



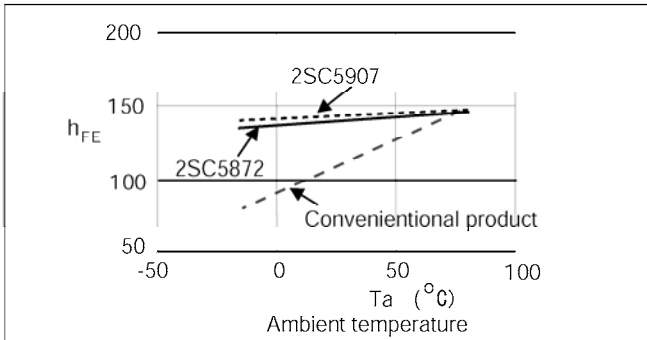
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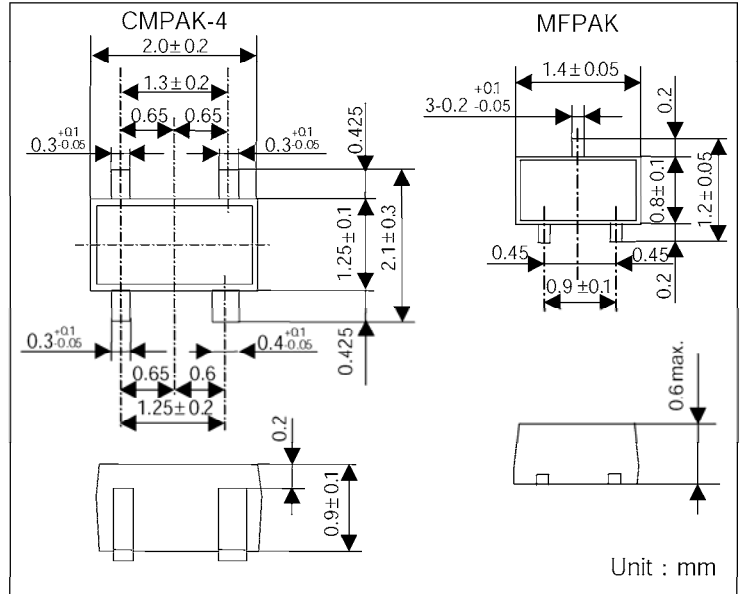
Hitachi High Frequency Bipolar Transistors

Features

- Excellent C/N characteristics
- Small package
- Excellent temperature characteristics



Package Dimensions

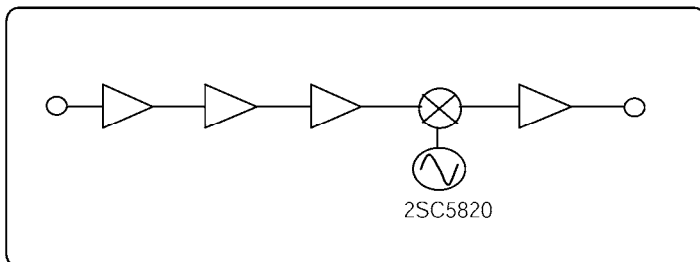


Main Electrical Characteristics

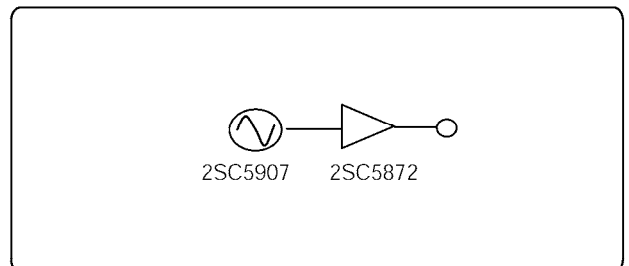
| Type No. | Ratings | | f_T (GHz) typ. | Characteristics | | | Cre (pF) typ. | Package |
|----------|---------------|------------|---------------------|-----------------|-----------------|---------|------------------|---------|
| | V_{CE0} (V) | I_c (mA) | | PG (dB) typ. | NF (dB) typ. | f (GHz) | | |
| 2SC5820 | 4.6 | 35 | 20 | 17.5 | 1.15 | 1.8 | 0.11 | CMPAK-4 |
| 2SC5872 | 6 | 50 | 10 | 16 | 1.0 | 0.9 | 0.25 | MFPK |
| 2SC5894 | 4 | 12 | 20 | 18 | 1.8 | 1.8 | 0.04 | CMPAK-4 |
| 2SC5907 | 4 | 80 | 7.5 | 14 | 1.2 | 0.9 | 0.45 | MFPK |

Application Examples

- Oscillator for BS/CS converters



- Oscillator and buffer amplifier for RF VCOs



- Low noise amplifier for cordless phones
 - Low noise amplifier for 2.4-GHz digital cordless phones
 - 2SC5894

Index

***2SA Series**

| Type No. | Package | P |
|----------|----------|---|
| 673 | TO-92 | 5 |
| 673A | TO-92 | 5 |
| 673A(K) | TO-92 | 6 |
| 778(K) | TO-92 | 6 |
| 778A(K) | TO-92 | 6 |
| 836 | TO-92 | 5 |
| 844 | TO-92 | 5 |
| 872A | TO-92 | 5 |
| 893 | TO-92 | 5 |
| 893A | TO-92 | 5 |
| 1029 | TO-92 | 5 |
| 1030 | TO-92 | 5 |
| 1052 | MPAK | 5 |
| 1082 | TO-92 | 5 |
| 1084 | TO-92 | 5 |
| 1085 | TO-92 | 5 |
| 1121 | MPAK | 5 |
| 1122 | MPAK | 5 |
| 1171 | MPAK | 5 |
| 1188 | TO-92 | 5 |
| 1190 | TO-92 | 5 |
| 1191 | TO-92 | 5 |
| 1193(K) | TO-92MOD | 6 |
| 1374 | SPAK | 5 |
| 1390 | SPAK | 5 |
| 1484 | MPAK | 5 |
| 1566 | MPAK | 5 |
| 1617 | MPAK | 5 |
| 2080 | CMPAK | 5 |
| 2081 | CMPAK | 5 |

***2SB Series**

| Type No. | Package | P |
|----------|----------|---|
| 561 | TO-92 | 5 |
| 562 | TO-92MOD | 5 |
| 566(K) | TO-220AB | 9 |
| 566A(K) | TO-220AB | 9 |
| 647 | TO-92MOD | 5 |
| 647A | TO-92MOD | 5 |
| 715 | TO-92MOD | 5 |
| 716 | TO-92MOD | 5 |
| 716A | TO-92MOD | 5 |
| 727(K) | TO-220AB | 9 |
| 738 | TO-92MOD | 5 |
| 739 | TO-92MOD | 5 |
| 740 | TO-92MOD | 5 |
| 791(K) | TO-220AB | 9 |
| 831 | MPAK | 5 |
| 857 | TO-220AB | 9 |
| 858 | TO-220AB | 9 |
| 859 | TO-220AB | 9 |
| 860 | TO-220AB | 9 |
| 861 | TO-220AB | 9 |
| 955(K) | TO-220AB | 9 |
| 1001 | UPAK | 6 |
| 1002 | UPAK | 6 |
| 1025 | UPAK | 6 |
| 1026 | UPAK | 6 |
| 1028 | UPAK | 6 |
| 1032(K) | TO-3P | 9 |
| 1048 | UPAK | 6 |
| 1079 | TO-3P | 9 |
| 1091 | TO-220AB | 9 |
| 1103 | TO-220AB | 9 |
| 1389 | TO-220FM | 9 |
| 1390 | TO-220FM | 9 |
| 1391 | TO-220FM | 9 |
| 1392 | TO-220FM | 9 |
| 1399 | TO-220FM | 9 |
| 1400 | TO-220FM | 9 |
| 1407 | DPAK | 9 |
| 1409 | DPAK | 9 |
| 1494 | TO-3P | 9 |
| 1530 | TO-220FM | 9 |
| 1688 | TO-92 | 5 |
| 1691 | MPAK | 5 |

***2SC Series**

| Type No. | Package | P |
|----------|---------|---|
| 458 | TO-92 | 5 |
| 458(K) | TO-92 | 6 |
| 458LG | TO-92 | 5 |
| 460 | TO-92 | 6 |
| 461 | TO-92 | 6 |
| 535 | TO-92 | 6 |
| 1213 | TO-92 | 5 |
| 1213A | TO-92 | 5 |
| 1213A(K) | TO-92 | 6 |
| 1214 | TO-92 | 5 |
| 1344 | TO-92 | 5 |
| 1345 | TO-92 | 5 |
| 1345(K) | TO-92 | 6 |
| 1472(K) | TO-92 | 6 |
| 1515(K) | TO-92 | 6 |

***2SC Series**

| Type No. | Package | P |
|----------|----------|---|
| 1775 | TO-92 | 5 |
| 1775A | TO-92 | 5 |
| 1881(K) | TO-220AB | 9 |
| 1890 | TO-92 | 5 |
| 1890A | TO-92 | 5 |
| 1906 | TO-92 | 6 |
| 1907 | TO-92 | 6 |
| 1921 | TO-92MOD | 5 |
| 2308 | TO-92 | 5 |
| 2309 | TO-92 | 5 |
| 2310 | TO-92 | 5 |
| 2396 | TO-92 | 5 |
| 2462 | MPAK | 5 |
| 2463 | MPAK | 5 |
| 2471 | TO-92 | 6 |
| 2512 | TO-92 | 6 |
| 2543 | TO-92 | 5 |
| 2544 | TO-92 | 5 |
| 2545 | TO-92 | 5 |
| 2546 | TO-92 | 5 |
| 2547 | TO-92 | 5 |
| 2610 | TO-92MOD | 5 |
| 2612 | TO-220AB | 9 |
| 2613 | TO-220AB | 9 |
| 2618 | MPAK | 5 |
| 2619 | MPAK | 6 |
| 2620 | MPAK | 6 |
| 2732 | MPAK | 6 |
| 2734 | MPAK | 6 |
| 2735 | MPAK | 6 |
| 2736 | MPAK | 6 |
| 2776 | MPAK | 6 |
| 2816 | TO-220AB | 9 |
| 2853 | TO-92 | 5 |
| 2854 | TO-92 | 5 |
| 2855 | TO-92 | 5 |
| 2856 | TO-92 | 5 |
| 2898 | TO-220AB | 9 |
| 2979 | TO-220AB | 9 |
| 3127 | MPAK | 6 |
| 3128 | TO-92 | 6 |
| 3336 | TO-3P | 9 |
| 3365 | TO-3P | 9 |
| 3380 | UPAK | 6 |
| 3390 | SPAK | 5 |
| 3391 | SPAK | 6 |
| 3413 | SPAK | 5 |
| 3470 | SPAK | 5 |
| 3510 | TO-92 | 6 |
| 3512 | TO-92 | 6 |
| 3513 | MPAK | 6 |
| 3553 | SPAK | 5 |
| 3793 | MPAK | 6 |
| 3836 | SPAK | 5 |
| 3957 | MPAK-4 | 6 |
| 4050 | MPAK | 5 |
| 4196 | MPAK | 6 |
| 4197 | MPAK | 6 |
| 4260 | CMPAK | 6 |
| 4261 | CMPAK | 6 |
| 4262 | CMPAK | 6 |
| 4264 | CMPAK | 6 |
| 4265 | CMPAK | 6 |
| 4308 | TO-92 | 6 |
| 4366 | MPAK | 5 |
| 4367 | TO-92MOD | 5 |
| 4463 | CMPAK | 6 |
| 4499 | DPAK | 9 |
| 4500 | DPAK | 9 |
| 4537 | CMPAK | 6 |
| 4591 | MPAK | 6 |
| 4593 | CMPAK | 6 |
| 4629 | TO-92 | 6 |
| 4680 | MPAK | 6 |
| 4693 | TO-92MOD | 6 |
| 4702 | MPAK | 5 |
| 4784 | CMPAK | 6 |
| 4807 | UPAK | 6 |
| 4899 | CMPAK | 6 |
| 4901 | CMPAK | 6 |
| 4913 | TO-220AB | 9 |
| 4926 | MPAK-4 | 6 |
| 4964 | MPAK | 6 |
| 4965 | CMPAK | 6 |
| 4988 | UPAK | 6 |
| 4995 | CMPAK-4 | 6 |
| 5022 | TO-220FM | 9 |
| 5049 | MPAK | 6 |
| 5050 | MPAK | 6 |
| 5051 | CMPAK | 6 |
| 5080 | MPAK-4 | 6 |
| 5081 | CMPAK-4 | 6 |

***2SC Series**

| Type No. | Package | P |
|----------|----------|---|
| 5137 | SMPAK | 6 |
| 5139 | SMPAK | 6 |
| 5218 | MPAK | 6 |
| 5247 | SMPAK | 6 |
| 5273 | TO-220AB | 9 |
| 5543 | MFPK | 6 |
| 5544 | MFPK | 6 |
| 5545 | MPAK-4 | 6 |
| 5554 | MFPK | 6 |
| 5555 | MFPK | 6 |
| 5593 | CMPAK-4 | 6 |
| 5594 | CMPAK-4 | 6 |
| 5623 | CMPAK-4 | 6 |
| 5624 | CMPAK-4 | 6 |
| 5628 | MFPK | 6 |
| 5629 | SMPAK | 6 |
| 5631 | UPAK | 6 |
| 5700 | MFPK | 6 |
| 5702 | MFPK | 6 |
| 5757 | MFPK | 6 |
| 5758 | MFPK | 6 |
| 5772 | MPAK | 6 |
| 5773 | MPAK | 6 |
| 5812 | MFPK | 6 |
| 5820 | CMPAK-4 | 6 |
| 5850 | CMPAK | 5 |
| 5851 | CMPAK | 6 |
| 5872 | MFPK | 6 |
| 5890 | MFPK | 6 |
| 5894 | CMPAK-4 | 6 |
| 5907 | MFPK | 6 |

***2SD Series**

| Type No. | Package | P |
|----------|----------|---|
| 467 | TO-92 | 5 |
| 468 | TO-92MOD | 5 |
| 476(K) | TO-220AB | 9 |
| 476A(K) | TO-220AB | 9 |
| 655 | TO-92 | 5 |
| 667 | TO-92MOD | 5 |
| 667A | TO-92MOD | 5 |
| 768(K) | TO-220AB | 9 |
| 787 | TO-92MOD | 5 |
| 788 | TO-92MOD | 5 |
| 789 | TO-92MOD | 5 |
| 970(K) | TO-220AB | 9 |
| 974 | TO-92MOD | 6 |
| 1101 | MPAK | 5 |
| 1113(K) | TO-220AB | 9 |
| 1126(K) | TO-220AB | 9 |
| 1133 | TO-220AB | 9 |
| 1134 | TO-220AB | 9 |
| 1135 | TO-220AB | 9 |
| 1137 | TO-220AB | 9 |
| 1138 | TO-220AB | 9 |
| 1163 | TO-220AB | 9 |
| 1163A | TO-220AB | 9 |
| 1209(K) | TO-92MOD | 6 |
| 1306 | MPAK | 5 |
| 1367 | UPAK | 6 |
| 1368 | UPAK | 6 |
| 1418 | UPAK | 6 |
| 1419 | UPAK | 6 |
| 1421 | UPAK | 6 |
| 1436(K) | TO-3P | 9 |
| 1470 | UPAK | 6 |
| 1472 | UPAK | 6 |
| 1504 | SPAK | 5 |
| 1527 | TO-220AB | 9 |
| 1559 | TO-3P | 9 |
| 1606 | TO-220AB | 9 |
| 1922 | TO-92MOD | 5 |
| 1974 | UPAK | 6 |
| 1976 | TO-220AB | 9 |
| 1978 | TO-92MOD | 6 |
| 2101 | TO-220FM | 9 |
| 2104 | TO-220FM | 9 |
| 2106 | TO-220FM | 9 |
| 2107 | TO-220FM | 9 |
| 2115 | DPAK | 9 |
| 2121 | DPAK | 9 |
| 2122 | DPAK | 9 |
| 2123 | DPAK | 9 |
| 2124 | DPAK | 9 |
| 2213 | TO-92MOD | 6 |
| 2337 | TO-220FM | 9 |
| 2651 | TO-92 | 5 |
| 2655 | MPAK | 5 |

***2SH Series**

| Type No. | Package | P |
|----------|----------|----|
| 11 | TO-220AB | 13 |
| 12 | TO-220AB | 13 |
| 13 | TO-220AB | 13 |

***2SH Series**

| Type No. | Package | P |
|----------|----------|----|
| 14 | TO-3P | 13 |
| 15 | TO-3P | 13 |
| 16 | TO-3PL | 13 |
| 17 | TO-220AB | 13 |
| 18 | TO-220AB | 13 |
| 19 | TO-220AB | 13 |
| 20 | TO-3P | 13 |
| 21 | TO-3P | 13 |
| 22 | TO-3PL | 13 |
| 26 | TO-220AB | 13 |
| 27 | TO-220AB | 13 |
| 28 | TO-220AB | 13 |
| 29 | TO-220AB | 13 |
| 30 | TO-3P | 13 |
| 31 | TO-3P | 13 |

***2SJ Series**

| Type No. | Package | P |
|----------|-----------|----|
| 76 | TO-220AB | 13 |
| 77 | TO-220AB | 13 |
| 78 | TO-220AB | 13 |
| 79 | TO-220AB | 13 |
| 160 | DPAK | 10 |
| 160 | TO-3P | 13 |
| 161 | TO-3P | 13 |
| 162 | TO-3P | 13 |
| 181 | DPAK | 10 |
| 186 | UPAK | 10 |
| 216 | TO-3PFM | 12 |
| 217 | TO-3P | 11 |
| 218 | TO-3PFM | 12 |
| 221 | TO-220AB | 10 |
| 222 | TO-220FM | 11 |
| 244 | UPAK | 10 |
| 247 | TO-220AB | 10 |
| 248 | TO-220FM | 11 |
| 278 | UPAK | 10 |
| 317 | UPAK | 10 |
| 319 | DPAK | 10 |
| 350 | TO-220FM | 11 |
| 351 | TO-3P | 13 |
| 352 | TO-3P | 13 |
| 361 | UPAK | 10 |
| 386 | TO-92MOD | 10 |
| 387 | DPAK | 10 |
| 399 | MPAK | 10 |
| 410 | TO-220FM | 11 |
| 451 | MPAK | 10 |
| 452 | MPAK | 10 |
| 471 | TO-220CFM | 11 |
| 479 | LDPK | 11 |
| 483 | TO-92MOD | 10 |
| 484 | UPAK | 10 |
| 486 | MPAK | 10 |
| 496 | TO-92MOD | 10 |
| 504 | TO-220FM | 11 |
| 505 | LDPK | 11 |
| 506 | DPAK | 10 |
| 517 | UPAK | 10 |
| 518 | UPAK | 10 |
| 526 | TO-220FM | 11 |
| 527 | DPAK | 10 |
| 528 | DPAK | 10 |
| 529 | DPAK | 10 |
| 530 | DPAK | 10 |
| 531 | TO-220CFM | 11 |
| 532 | TO-220CFM | 11 |
| 533 | TO-220CFM | 11 |
| 534 | TO-220FM | 11 |
| 535 | TO-220FM | 11 |
| 539 | TO-220AB | 10 |
| 540 | TO-220AB | 10 |
| 541 | TO-220AB | 10 |
| 542 | TO-220AB | 10 |
| 543 | TO-220AB | 10 |
| 544 | TO-220AB | 10 |
| 545 | TO-220CFM | 11 |
| 546 | TO-220CFM | 11 |
| 547 | TO-220FM | 11 |
| 548 | TO-220FM | 11 |
| 549 | LDPK | 11 |
| 549 | LDPK | 11 |
| 551 | LDPK | 11 |
| 552 | LDPK | 11 |
| 553 | LDPK | 11 |
| 554 | TO-3P | 11 |
| 555 | TO-3P | 11 |
| 574 | MPAK | 7 |
| 575 | MPAK | 7 |
| 576 | CMPAK | 7 |
| 586 | CMPAK | 7 |
| 587 | SMPAK | 7 |

***2SK Series**

| Type No. | Package | P |
|----------|----------|----|
| 168 | TO-92 | 7 |
| 213 | TO-220AB | 13 |
| 214 | TO-220AB | 13 |
| 215 | TO-220AB | 13 |
| 216 | TO-220AB | 13 |
| 217 | MPAK | 7 |
| 359 | TO-92 | 7 |
| 360 | MPAK | 7 |
| 435 | TO-92 | 7 |
| 439 | SPAK | 7 |
| 494 | SPAK | 7 |
| 740 | TO-220AB | 10 |
| 975 | TO-92MOD | 10 |
| 1056 | TO-3P | 13 |
| 1057 | TO-3P | 13 |
| 1058 | TO-3P | 13 |
| 1070 | MPAK | 7 |
| 1151 | DPAK | 10 |
| 1152 | DPAK | 10 |
| 1153 | TO-220AB | 10 |
| 1154 | TO-220AB | 10 |
| 1155 | TO-220AB | 10 |
| 1156 | TO-220AB | 10 |
| 1157 | TO-220AB | 10 |
| 1158 | TO-220AB | 10 |
| 1159 | TO-220AB | 10 |
| 1160 | TO-220AB | 10 |
| 1161 | TO-3P | 11 |
| 1162 | | |

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•2SK Series

| Type No. | Package | P |
|----------|-----------|----|
| 2737 | TO-220CFM | 11 |
| 2738 | TO-220CFM | 11 |
| 2788 | UPAK | 10 |
| 2796 | DPAK | 10 |
| 2800 | TO-220AB | 10 |
| 2802 | MPAK | 10 |
| 2828 | TO-3P | 11 |
| 2851 | TO-92MOD | 10 |
| 2869 | DPAK | 10 |
| 2885 | LDBPAK | 11 |
| 2912 | LDBPAK | 11 |
| 2925 | DPAK | 10 |
| 2926 | DPAK | 10 |
| 2927 | TO-220AB | 10 |
| 2928 | TO-220AB | 10 |
| 2929 | TO-220AB | 10 |
| 2930 | TO-220AB | 10 |
| 2931 | TO-220AB | 10 |
| 2932 | TO-220CFM | 11 |
| 2933 | TO-220CFM | 11 |
| 2934 | TO-220CFM | 11 |
| 2935 | TO-220CFM | 11 |
| 2936 | TO-220CFM | 11 |
| 2937 | TO-220FM | 11 |
| 2938 | LDBPAK | 11 |
| 2939 | LDBPAK | 11 |
| 2940 | LDBPAK | 11 |
| 2955 | TO-3P | 11 |
| 2956 | TO-220CFM | 11 |
| 2957 | LDBPAK | 11 |
| 2958 | LDBPAK | 11 |
| 2959 | TO-220AB | 10 |
| 2978 | UPAK | 10 |
| 2980 | MPAK | 10 |
| 3000 | MPAK | 10 |
| 3069 | TO-220AB | 10 |
| 3070 | LDBPAK | 11 |
| 3080 | TO-220AB | 10 |
| 3081 | TO-220AB | 10 |
| 3082 | LDBPAK | 11 |
| 3134 | LDBPAK | 11 |
| 3135 | LDBPAK | 11 |
| 3136 | TO-220AB | 10 |
| 3140 | TO-220CFM | 11 |
| 3141 | TO-220AB | 10 |
| 3142 | TO-220CFM | 11 |
| 3147 | DPAK | 10 |
| 3148 | TO-220FM | 11 |
| 3149 | TO-220AB | 10 |
| 3150 | LDBPAK | 11 |
| 3151 | TO-3P | 11 |
| 3152 | TO-220FM | 11 |
| 3153 | TO-220FM | 11 |
| 3154 | TO-220AB | 10 |
| 3155 | TO-220FM | 11 |
| 3156 | TO-220AB | 10 |
| 3157 | TO-220FM | 11 |
| 3158 | TO-220AB | 10 |
| 3159 | TO-3P | 11 |
| 3160 | TO-220FM | 11 |
| 3161 | LDBPAK | 11 |
| 3162 | TO-220FM | 11 |
| 3163 | TO-3P | 11 |
| 3174A | RFPK-F | 8 |
| 3175A | RFPK-F | 8 |
| 3177 | TO-220FM | 11 |
| 3203 | LDBPAK | 11 |
| 3209 | TO-220FM | 11 |
| 3210 | LDBPAK | 11 |
| 3211 | LDBPAK | 11 |
| 3212 | TO-220FM | 11 |
| 3214 | TO-220AB | 10 |
| 3215 | TO-220AB | 10 |
| 3228 | TO-220AB | 10 |
| 3229 | TO-220CFM | 11 |
| 3233 | TO-220CFM | 11 |
| 3234 | TO-220CFM | 11 |
| 3235 | TO-3P | 11 |
| 3274 | DPAK | 10 |
| 3287 | MPAK | 7 |
| 3288 | MPAK | 7 |
| 3289 | CMPAK | 7 |
| 3290 | MPAK | 7 |
| 3348 | CMPAK | 7 |
| 3349 | SMPAK | 7 |
| 3378 | CMPAK | 7 |
| 3390 | RP8P | 8 |
| 3391 | UPAK | 8 |
| 3418 | TO-220AB | 10 |
| 3419 | TO-3P | 11 |
| 3446 | TO-92MOD | 10 |
| 3447 | TO-92MOD | 10 |

•2SK Series

| Type No. | Package | P |
|----------|---------|----|
| 3461 | LDBPAK | 11 |
| 3464 | RFPK-F | 8 |
| 3465 | RFPK-G | 8 |
| 3540 | RFPK-F | 8 |
| 3545 | RFPK-F | 8 |

•3SK Series

| Type No. | Package | P |
|----------|---------|---|
| 295 | MPAK-4 | 7 |
| 296 | CMPAK-4 | 7 |
| 297 | MPAK-4 | 7 |
| 298 | CMPAK-4 | 7 |
| 300 | MPAK-4 | 7 |
| 309 | CMPAK-4 | 7 |
| 317 | CMPAK-4 | 7 |
| 318 | CMPAK-4 | 7 |
| 319 | MPAK-4 | 7 |

•4A Series

| Type No. | Package | P |
|----------|---------|----|
| J11 | SP-12 | 13 |
| K15 | SP-10 | 13 |
| K16 | SP-10 | 13 |
| K17 | SP-10 | 13 |
| K18 | SP-10 | 13 |
| K19 | SP-10 | 13 |
| K20 | SP-10 | 13 |
| K21 | SP-10 | 13 |
| K23 | SP-12TA | 13 |
| K25 | SP-10 | 13 |
| K26 | SP-12 | 13 |
| K27 | SP-10 | 13 |
| M11 | SP-10 | 13 |
| M12 | SP-10 | 13 |
| M13 | SP-10 | 13 |
| M14 | SP-12TA | 13 |
| M15 | SP-12TA | 13 |
| M16 | SP-12 | 13 |

•6AM Series

| Type No. | Package | P |
|----------|---------|----|
| 11 | SP-12 | 13 |
| 12 | SP-12TA | 13 |
| 13 | SP-12TA | 13 |
| 14 | SP-12TA | 13 |
| 15 | SP-12TA | 13 |

•BB FET Series

| Type No. | Package | P |
|----------|---------|---|
| 101C | CMPAK-4 | 7 |
| 101M | MPAK-4 | 7 |
| 102C | CMPAK-4 | 7 |
| 102M | MPAK-4 | 7 |
| 301C | CMPAK-4 | 7 |
| 301M | MPAK-4 | 7 |
| 302C | CMPAK-4 | 7 |
| 302M | MPAK-4 | 7 |
| 304C | CMPAK-4 | 7 |
| 304M | MPAK-4 | 7 |
| 305C | CMPAK-4 | 7 |
| 305M | MPAK-4 | 7 |
| 501C | CMPAK-4 | 7 |
| 501M | MPAK-4 | 7 |
| 502C | CMPAK-4 | 7 |
| 502M | MPAK-4 | 7 |
| 503C | CMPAK-4 | 7 |
| 503M | MPAK-4 | 7 |
| 504C | CMPAK-4 | 7 |
| 504M | MPAK-4 | 7 |

•BICMIC Series

| Type No. | Package | P |
|----------|---------|---|
| 702C | CMPAK-4 | 7 |
| 702M | MPAK-4 | 7 |
| 703C | CMPAK-4 | 7 |
| 703M | MPAK-4 | 7 |

•GN Series

| Type No. | Package | P |
|----------|---------|----|
| 2550V4 | LDBPAK | 13 |
| LD/LS | | |
| 6020V4 | LDBPAK | 13 |
| LD/LS | | |
| 6030V4 | LDBPAK | 13 |
| LD/LS | | |

•HA Series

| Type No. | Package | P |
|----------|----------|---|
| 22022 | MPAK-5 | 8 |
| 22033 | MPAK-5 | 8 |
| 22040 | MPAK-6 | 8 |
| 22052 | TNP-16BV | 8 |

•HAF Series

| Type No. | Package | P |
|----------|----------|----|
| 1001 | TO-220AB | 13 |
| 1002 | LDBPAK | 13 |
| 1004 | DPAK | 13 |
| 1009 | LDBPAK | 13 |

•HAF Series

| Type No. | Package | P |
|----------|----------|----|
| 2001 | TO-220AB | 13 |
| 2002 | TO-220FM | 13 |
| 2005 | TO-220FM | 13 |
| 2007 | DPAK | 13 |
| 2008 | TO-220FM | 13 |
| 2011 | LDBPAK | 13 |
| 2012 | LDBPAK | 13 |
| 2014 | TO-220AB | 13 |
| 2015RJ | SOP-8 | 13 |
| 2017 | LDBPAK | 13 |
| 2021 | LDBPAK | 13 |

•HAT Series

| Type No. | Package | P |
|----------|----------|----|
| 1016R | FP-8DA | 12 |
| 1020R | FP-8DA | 12 |
| 1021R | FP-8DA | 12 |
| 1023R | FP-8DA | 12 |
| 1024R | FP-8DA | 12 |
| 1025R | FP-8DA | 12 |
| 1026R | FP-8DA | 12 |
| 1029R | FP-8DA | 12 |
| 1031T | TTP-8D | 12 |
| 1033T | TTP-8D | 12 |
| 1036R | FP-8DA | 12 |
| 1038R/RJ | FP-8DA | 12 |
| 1041T | TTP-8D | 12 |
| 1043M | TSOP-6 | 12 |
| 1044M | TSOP-6 | 12 |
| 1047R/RJ | SOP-8 | 12 |
| 1048R | FP-8DA | 12 |
| 1053M | TSOP-6 | 12 |
| 1054R | FP-8DA | 12 |
| 1058C | CMFPAK-6 | 12 |
| 1059C | CMFPAK-6 | 12 |
| 1062G | CMPAK-6 | 12 |
| 1063M | TSOP-6 | 12 |
| 1066G | CMPAK-6 | 7 |
| 1068C | CMFPAK-6 | 12 |
| 1069C | CMFPAK-6 | 12 |
| 1072H | LFPK | 12 |
| 2016R | FP-8DA | 12 |
| 2019R | FP-8DA | 12 |
| 2020R | FP-8DA | 12 |
| 2022R | FP-8DA | 12 |
| 2024R | FP-8DA | 12 |
| 2025R | FP-8DA | 12 |
| 2026R | FP-8DA | 12 |
| 2027R | FP-8DA | 12 |
| 2028R/RJ | FP-8DA | 12 |
| 2029R | FP-8DA | 12 |
| 2031T | TTP-8D | 12 |
| 2033R/RJ | FP-8DA | 12 |
| 2036R | FP-8DA | 12 |
| 2037T | TTP-8D | 12 |
| 2038R/RJ | FP-8DA | 12 |
| 2040R | FP-8DA | 12 |
| 2042T | TTP-8D | 12 |
| 2043R | FP-8DA | 12 |
| 2044R | FP-8DA | 12 |
| 2045T | TTP-8D | 12 |
| 2050T | TTP-8D | 12 |
| 2051T | TTP-8D | 12 |
| 2052T | TTP-8D | 12 |
| 2053M | TSOP-6 | 12 |
| 2054M | TSOP-6 | 12 |
| 2058R | FP-8DA | 12 |
| 2064R | FP-8DA | 12 |
| 2068R | FP-8DA | 12 |
| 2070R | FP-8DA | 12 |
| 2071R | FP-8DA | 12 |
| 2077R | FP-8DA | 12 |
| 2080R | FP-8DA | 12 |
| 2080T | TTP-8D | 12 |
| 2085T | TTP-8D | 12 |
| 2085R | FP-8DA | 12 |
| 2087R | FP-8DA | 12 |
| 2088R | FP-8DA | 12 |
| 2089R | FP-8DA | 12 |
| 2092R | FP-8DA | 12 |
| 2093R | FP-8DA | 12 |
| 2095R | FP-8DA | 12 |
| 2096H | LFPK | 12 |
| 2099H | LFPK | 12 |
| 2103R | FP-8DA | 12 |
| 2106G | CMPAK-6 | 7 |
| 2108R | FP-8DA | 12 |
| 2114R/RJ | SOP-8 | 12 |
| 2116H | LFPK | 12 |
| 2119H | LFPK | 12 |
| 2129H | LFPK | 12 |
| 2132H | LFPK | 12 |
| 2134H | LFPK | 12 |

•HAT Series

| Type No. | Package | P |
|----------|---------|----|
| 2137H | LFPK | 12 |
| 2139H | LFPK | 12 |
| 2140H | LFPK | 12 |
| 2141H | LFPK | 12 |
| 2142H | LFPK | 12 |
| 2143H | LFPK | 12 |
| 2159H | LFPK | 12 |
| 2160H | LFPK | 12 |
| 2161H | LFPK | 12 |
| 2162H | LFPK | 12 |
| 2163H | LFPK | 12 |
| 2164H | LFPK | 12 |
| 2165H | LFPK | 12 |
| 2166H | LFPK | 12 |
| 2167H | LFPK | 12 |
| 2168H | LFPK | 12 |
| 2169H | LFPK | 12 |
| 2170H | LFPK | 12 |
| 2171H | LFPK | 12 |
| 2172H | LFPK | 12 |
| 2173H | LFPK | 12 |
| 2174H | LFPK | 12 |
| 2175H | LFPK | 12 |
| 3004R | FP-8DA | 12 |
| 3006R | FP-8DA | 12 |
| 3008R/RJ | FP-8DA | 12 |
| 3010R | FP-8DA | 12 |
| 3016G | CMPAK-6 | 7 |
| 3017R | FP-8DA | 12 |
| 3019R | FP-8DA | 12 |

•H5N Series

| Type No. | Package | P |
|--------------|-----------|----|
| 0201MF | MFPK | 7 |
| 0301MF | MFPK | 7 |
| 0301SM | SMPK | 7 |
| 2004DL/DS | DPK | 10 |
| 2001LD/LS/LM | LDBPAK | 11 |
| 2003P | TO-3P | 11 |
| 2005DL/DS | DPK | 10 |
| 2301PF | TO-3PFM | 12 |
| 2501LD/LS/LM | LDBPAK | 11 |
| 2502CF | TO-220CFM | 11 |
| 2503P | TO-3P | 11 |
| 2504DL/DS | DPK | 10 |
| 2505DL/DS | DPK | 10 |
| 2507P | TO-3P | 12 |
| 2508DL/DS | DPK | 10 |
| 2509P | TO-3P | 12 |
| 2509PF | TO-3PFM | 12 |
| 2510DL/DS | DPK | 10 |
| 3003P | TO-3P | 12 |
| 3004P | TO-3P | 12 |
| 3008P | TO-3P | 12 |
| 5001FM | TO-220FM | 11 |
| 5004PL | TO-3PL | 12 |
| 5006DL/DS | DPK | 10 |
| 5006FM | TO-220FM | 11 |
| 5006LD/LS/LM | LDBPAK | 11 |
| 5007P | TO-3P | 12 |
| 5011PL | TO-3PL | 12 |
| 6001P | TO-3P | 12 |

•H5P Series

| Type No. | Package | P |
|----------|---------|---|
| 0201MF | MFPK | 7 |
| 0301MF | MFPK | 7 |
| 0301SM | SMPK | 7 |

•H7N Series

| Type No. | Package | P |
|--------------|-----------|----|
| 0203AB | TO-220AB | 10 |
| 0307AB | TO-220AB | 10 |
| 0307LD/LS/LM | LDBPAK | 11 |
| 0308AB | TO-220AB | 10 |
| 0308CF | TO-220CFM | 11 |
| 0308LD/LS/LM | LDBPAK | 11 |
| 0310LD/LS/LM | LDBPAK | 11 |
| 0311LD/LS/LM | LDBPAK | 11 |
| 0312AB | TO-220AB | 10 |

•H7N Series

| Type No. | Package | P |
|--------------|----------|----|
| 0312LD/LS/LM | LDBPAK | 11 |
| 0602LD/LS/LM | LDBPAK | 11 |
| 1002LD/LS/LM | LDBPAK | 11 |
| 1004AB | TO-220AB | 10 |
| 1004FM | TO-220FM | 11 |
| 1004LD/LS/LM | LDBPAK | 11 |
| 1005FM | TO-220FM | 11 |
| 1005LD/LS/LM | LDBPAK | 11 |

•H7P Series

Small Signal Transistors

• General Amplification

| Package | Type No. | Ratings | | Characteristics | | Status | |
|----------|----------|----------|--------|-----------------|------------------|--------|----|
| | | VCEO (V) | IC (A) | hFE | VCE(sat) (V) max | | |
| SPAK | 2SA1374 | -55 | -0.1 | 160 to 500 | -0.5 | O★ | |
| | 2SA1390 | -35 | -0.5 | 60 to 320 | -0.6 | O★ | |
| | 2SC3390 | 50 | 0.1 | 100 to 320 | 0.2 | O★ | |
| | 2SC3413 | 30 | 0.1 | 100 to 500 | 0.2 | O★ | |
| | 2SC3470 | 50 | 0.1 | 250 to 1200 | 0.2 | ★ | |
| | 2SC3553 | 35 | 0.5 | 60 to 320 | 0.6 | O★ | |
| | 2SC3836 | 50 | 0.3 | 800 to 2000 | 0.3 | O★ | |
| | 2SD1504 | 15 | 0.5 | 250 to 1200 | 0.5 | O★ | |
| | TO-92 | 2SA673 | -35 | -0.5 | 60 to 320 | -0.6 | O★ |
| | | 2SA673A | -50 | -0.5 | 60 to 320 | -0.6 | O★ |
| 2SA836 | | -55 | -0.1 | 160 to 500 | -0.5 | O★ | |
| 2SA844 | | -55 | -0.1 | 160 to 500 | -0.5 | O★ | |
| 2SA872A | | -120 | -50 m | 250 to 800 | -0.5 | O★ | |
| 2SA893 | | -90 | -50 m | 250 to 800 | -0.5 | ★ | |
| 2SA893A | | -120 | -50 m | 250 to 800 | -0.5 | O★ | |
| 2SA1029 | | -30 | -0.1 | 100 to 500 | -0.2 | O★ | |
| 2SA1030 | | -50 | -0.1 | 100 to 320 | -0.2 | O★ | |
| 2SA1082 | | -120 | -0.1 | 250 to 800 | -0.2 | ★ | |
| 2SA1084 | | -90 | -0.1 | 250 to 800 | -0.2 | O★ | |
| 2SA1085 | | -120 | -0.1 | 250 to 800 | -0.2 | O★ | |
| 2SA1188 | | -90 | -0.1 | 250 to 800 | -0.1 | O★ | |
| 2SA1190 | | -90 | -0.1 | 250 to 800 | -0.1 | O★ | |
| 2SA1191 | | -120 | -0.1 | 250 to 800 | -0.1 | O★ | |
| 2SB561 | | -20 | -0.7 | 85 to 240 | -0.5 | O★ | |
| 2SB1688 | | -300 | -50 m | 80 to 150 | 0.9 | O★ | |
| 2SC458 | | 30 | 0.1 | 100 to 500 | 0.2 | O★ | |
| 2SC458LG | | 30 | 0.1 | 100 to 500 | 0.2 | ★ | |
| 2SC1213 | | 35 | 0.5 | 60 to 320 | 0.6 | O★ | |
| 2SC1213A | | 50 | 0.5 | 60 to 320 | 0.6 | O★ | |
| 2SC1214 | | 50 | 0.5 | 60 to 320 | 0.6 | O★ | |
| 2SC1344 | | 30 | 0.1 | 250 to 1200 | 0.5 | ★ | |
| 2SC1345 | | 50 | 0.1 | 250 to 1200 | 0.5 | O★ | |
| 2SC1775 | | 90 | 50m | 400 to 1200 | 0.5 | O★ | |
| 2SC1775A | | 120 | 50 m | 400 to 1200 | 0.5 | O★ | |
| 2SC1890 | | 90 | 50 m | 250 to 1200 | 0.5 | ★ | |
| 2SC1890A | | 120 | 50 m | 250 to 1200 | 0.5 | O★ | |
| 2SC2308 | | 50 | 0.1 | 100 to 320 | 0.2 | O★ | |
| 2SC2309 | | 50 | 0.1 | 250 to 1200 | 0.2 | O★ | |
| 2SC2310 | | 50 | 0.1 | 100 to 320 | 0.2 | ★ | |
| 2SC2396 | | 60 | 0.1 | 250 to 1200 | 0.2 | ★ | |
| 2SC2543 | | 90 | 0.1 | 250 to 1200 | 0.2 | ★ | |
| 2SC2544 | | 120 | 0.1 | 250 to 800 | 0.2 | ★ | |
| 2SC2545 | | 60 | 0.1 | 250 to 1200 | 0.2 | O★ | |
| 2SC2546 | | 90 | 0.1 | 250 to 1200 | 0.2 | O★ | |
| 2SC2547 | | 120 | 0.1 | 250 to 800 | 0.2 | O★ | |
| 2SC2853 | | 90 | 0.1 | 250 to 800 | 0.1 | O★ | |

| Package | Type No. | Ratings | | Characteristics | | Status | |
|---------|-----------|----------|-------------|-----------------|------------------|--------|----|
| | | VCEO (V) | IC (A) | hFE | VCE(sat) (V) max | | |
| TO-92 | 2SC2854 | 120 | 0.1 | 250 to 800 | 0.1 | ★ | |
| | 2SC2855 | 90 | 0.1 | 250 to 800 | 0.1 | ★ | |
| | 2SC2856 | 120 | 0.1 | 250 to 800 | 0.1 | O★ | |
| | 2SD467 | 20 | 0.7 | 85 to 240 | 0.5 | O★ | |
| | 2SD655 | 15 | 0.7 | 250 to 1200 | 0.5 | O★ | |
| | 2SD2651 | 300 | 50 m | 80 to 150 | 0.5 | O★ | |
| | TO-92 MOD | 2SB562 | -20 | -1.0 | 85 to 240 | -0.5 | O★ |
| | | 2SB647 | -80 | -1.0 | 60 to 320 | -1.0 | O★ |
| | | 2SB647A | -100 | -1.0 | 60 to 200 | -1.0 | O★ |
| | | 2SB715 | -100 | -50 m | 250 to 800 | -0.2 | ★ |
| 2SB716 | | -120 | -50 m | 250 to 800 | -0.2 | ★ | |
| 2SB716A | | -140 | -50 m | 250 to 500 | -0.2 | ★ | |
| 2SB738 | | -16 | -2.0 | 100 to 320 | -0.3 | ★ | |
| 2SB739 | | -20 | -2.0 | 100 to 320 | -0.3 | O★ | |
| 2SB740 | | -50 | -1.0 | 100 to 320 | -0.6 | O★ | |
| 2SC1921 | | 200 | 50 m | 30 to 300 | 1.0 | O★ | |
| 2SC2610 | | 300 | 0.1 | 30 to 200 | 1.5 | O★ | |
| 2SC4367 | | 20 | 0.1 | From 40 | 1.0 | O★ | |
| 2SD468 | | 20 | 1.0 | 85 to 240 | 0.5 | O★ | |
| 2SD667 | | 80 | 1.0 | 60 to 320 | 1.0 | O★ | |
| 2SD667A | | 100 | 1.0 | 60 to 200 | 1.0 | O★ | |
| 2SD787 | | 16 | 2.0 | 100 to 800 | 0.3 | ★ | |
| 2SD788 | | 20 | 2.0 | 100 to 800 | 0.3 | O★ | |
| 2SD789 | | 50 | 1.0 | 100 to 800 | 0.3 | O★ | |
| 2SD1922 | 25 | 0.8 | 250 to 1200 | 0.3 | ★ | | |
| MPAK | 2SA1052 | -30 | -0.1 | 100 to 500 | -0.2 | O★ | |
| | 2SA1121 | -35 | -0.5 | 60 to 320 | -0.6 | O★ | |
| | 2SA1122 | -55 | -0.1 | 160 to 800 | -0.5 | O★ | |
| | 2SA1171 | -90 | -50 m | 250 to 800 | -0.5 | O★ | |
| | 2SA1484 | -90 | -0.1 | 250 to 800 | -0.1 | ★ | |
| | 2SA1566 | -120 | -0.1 | 250 to 800 | -0.1 | O★ | |
| | 2SA1617 | -50 | -0.1 | 100 to 320 | -0.2 | O★ | |
| | 2SB831 | -20 | -0.7 | 85 to 240 | -0.5 | O★ | |
| | 2SB1691 | -50 | -1 | 200 to 500 | -0.3 | O★ | |
| | 2SC2462 | 40 | 0.1 | 100 to 500 | 0.2 | O★ | |
| | 2SC2463 | 50 | 0.1 | 250 to 1200 | 0.5 | O★ | |
| | 2SC2618 | 35 | 0.5 | 60 to 320 | 0.6 | O★ | |
| | 2SC4050 | 120 | 0.1 | 250 to 800 | 0.1 | O★ | |
| | 2SC4366 | 50 | 0.3 | 800 to 2000 | 0.3 | ★ | |
| | 2SC4702 | 300 | 50 m | 60 to 150 | 0.5 | O★ | |
| | 2SD1101 | 20 | 0.7 | 85 to 240 | 0.5 | ★ | |
| | 2SD1306 | 15 | 0.7 | 250 to 800 | 0.5 | O★ | |
| | 2SD2655 | 50 | 1 | 200 to 500 | 0.3 | O★ | |
| | CMPAK | 2SA2080 | -30 | -100m | 100 to 500 | -0.2 | O★ |
| | | 2SA2081 | -55 | -100m | 160 to 800 | -0.5 | O★ |
| 2SC5850 | | 40 | 100m | 100 to 500 | 0.2 | O★ | |

Note: O: Mass production
 SPL: Samples available
 Δ: Can be mass produced (Delivery time: 3 months later)
 *: Provided to the limited customers
 ★: Large order device (Unit: 500 pcs x N)

• BRT Series (Small Signal Switching)

| Package | Type No. | Ratings | | Characteristics | | | Status | |
|---------|-----------|---------|---------|-----------------|--------|-------------|--------|-----------|
| | | Vcc (V) | Io (mA) | Vi(on) (V) max | Gi min | R1 (kΩ) typ | | R1/R2 typ |
| TO-92 | BRA114ETP | -50 | -100 | -2.4 | 30 | 10 | 1.0 | ★ |
| | BRA123ETP | -50 | -100 | -1.8 | 20 | 2.2 | 1.0 | ★ |
| | BRA124ETP | -50 | -100 | -3.0 | 56 | 22 | 1.0 | ★ |
| | BRA143ETP | -50 | -100 | -2.0 | 20 | 4.7 | 1.0 | ★ |
| | BRA144ETP | -50 | -100 | -4.5 | 70 | 47 | 1.0 | ★ |
| | BRC114ETP | 50 | 100 | 2.4 | 30 | 10 | 1.0 | ★ |
| | BRC123ETP | 50 | 100 | 1.8 | 20 | 2.2 | 1.0 | ★ |
| | BRC124ETP | 50 | 100 | 3.0 | 56 | 22 | 1.0 | ★ |
| | BRC143ETP | 50 | 100 | 2.0 | 20 | 4.7 | 1.0 | ★ |
| | BRC144ETP | 50 | 100 | 4.5 | 70 | 47 | 1.0 | ★ |
| MPAK | BRA114EMP | -50 | -100 | -2.4 | 30 | 10 | 1.0 | ★ |
| | BRA123EMP | -50 | -100 | -1.8 | 20 | 2.2 | 1.0 | ★ |
| | BRA124EMP | -50 | -100 | -3.0 | 56 | 22 | 1.0 | ★ |
| | BRA143EMP | -50 | -100 | -2.0 | 20 | 4.7 | 1.0 | ★ |
| | BRA144EMP | -50 | -100 | -4.5 | 70 | 47 | 1.0 | ★ |

| Package | Type No. | Ratings | | Characteristics | | | Status | |
|-----------|-----------|---------|---------|-----------------|--------|-------------|--------|-----------|
| | | Vcc (V) | Io (mA) | Vi(on) (V) max | Gi min | R1 (kΩ) typ | | R1/R2 typ |
| MPAK | BRC114EMP | 50 | 100 | 2.4 | 30 | 10 | 1.0 | ★ |
| | BRC123EMP | 50 | 100 | 1.8 | 20 | 2.2 | 1.0 | ★ |
| | BRC124EMP | 50 | 100 | 3.0 | 56 | 22 | 1.0 | ★ |
| | BRC143EMP | 50 | 100 | 2.0 | 20 | 4.7 | 1.0 | ★ |
| | BRC144EMP | 50 | 100 | 4.5 | 70 | 47 | 1.0 | ★ |
| CMPAK | BRA114ECM | -50 | -100 | -2.4 | 30 | 10 | 1.0 | ★ |
| | BRA123ECM | -50 | -100 | -1.8 | 20 | 2.2 | 1.0 | ★ |
| | BRA124ECM | -50 | -100 | -3.0 | 56 | 22 | 1.0 | ★ |
| | BRA143ECM | -50 | -100 | -2.0 | 20 | 4.7 | 1.0 | ★ |
| | BRA144ECM | -50 | -100 | -4.5 | 70 | 47 | 1.0 | ★ |
| | BRC114ECM | 50 | 100 | 2.4 | 30 | 10 | 1.0 | ★ |
| | BRC123ECM | 50 | 100 | 1.8 | 20 | 2.2 | 1.0 | ★ |
| | BRC124ECM | 50 | 100 | 3.0 | 56 | 22 | 1.0 | ★ |
| | BRC143ECM | 50 | 100 | 2.0 | 20 | 4.7 | 1.0 | ★ |
| BRC144ECM | 50 | 100 | 4.5 | 70 | 47 | 1.0 | ★ | |

Small Signal Transistors

• General Amplification

| Package | Type No. | Ratings | | Characteristics | | Status |
|---------|----------|----------------------|--------------------|-----------------|------------------------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | V _{CE(sat)} (V) max | |
| UPAK | 2SB1001 | -16 | -2.0 | 100 to 320 | -0.3 | O★ |
| | 2SB1002 | -50 | -1.0 | 100 to 320 | -0.6 | O★ |
| | 2SB1025 | -80 | -1.0 | 60 to 320 | -1.0 | O★ |
| | 2SB1026 | -100 | -1.0 | 60 to 200 | -1.0 | O★ |
| | 2SB1028 | -160 | -1.5 | 60 to 200 | -1.0 | O★ |
| | 2SC3380 | 300 | 0.1 | 30 to 200 | 1.5 | O★ |

| Package | Type No. | Ratings | | Characteristics | | Status |
|---------|----------|----------------------|--------------------|-----------------|------------------------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | V _{CE(sat)} (V) max | |
| UPAK | 2SD1367 | 16 | 2.0 | 100 to 500 | 0.3 | Δ★ |
| | 2SD1368 | 50 | 1.0 | 100 to 500 | 0.3 | O★ |
| | 2SD1418 | 80 | 1.0 | 60 to 320 | 1.0 | O★ |
| | 2SD1419 | 100 | 1.0 | 60 to 200 | 1.0 | O★ |
| | 2SD1421 | 160 | 1.5 | 60 to 200 | 1.0 | O★ |
| | 2SD1974 | 25 | 0.8 | 250 to 1200 | 0.4 | Δ★ |

• General Switching

| Package | Type No. | Ratings | | Characteristics | | Status |
|---------|-------------|----------------------|--------------------|-----------------|------------------------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | V _{CE(sat)} (V) max | |
| TO-92 | 2SA673A(K) | -50 | -0.5 | 60 to 320 | -0.6 | O★ |
| | 2SA778(K) | -150 | -50 m | From 30 | -1.0 | ★ |
| | 2SA778A(K) | -180 | -50 m | 40 to 200 | -1.0 | O★ |
| | 2SC458(K) | 30 | 0.1 | 100 to 500 | 0.4 | O★ |
| | 2SC1213A(K) | 50 | 0.5 | 60 to 320 | 0.6 | O★ |

| Package | Type No. | Ratings | | Characteristics | | Status |
|-----------|------------|----------------------|--------------------|-----------------|------------------------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | V _{CE(sat)} (V) max | |
| TO-92 | 2SC1345(K) | 50 | 0.1 | 250 to 1200 | 0.5 | ★ |
| | 2SC1515(K) | 150 | 50 m | 30 to 300 | 1.0 | O★ |
| TO-92 MOD | 2SD974 | 60 | 1.0 | From 100 | 0.3 | O★ |

• General Switching (Darlington Transistors)

| Package | Type No. | Ratings | | Characteristics | | Status |
|-----------|------------|----------------------|--------------------|-----------------|---------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | toff (μs) typ | |
| TO-92 | 2SC1472(K) | 30 | 0.3 | 2 k to 100 k | 0.8 | O★ |
| TO-92 MOD | 2SA1193(K) | -60 | -0.5 | From 2 k | 0.9 | O★ |
| | 2SD1209(K) | 60 | 1.0 | From 4 k | - | O★ |
| | 2SD1978 | 120 | 1.5 | 2 k to 30 k | 2.0 | O★ |
| | 2SD2213 | 80 | 1.5 | 5 k to 30 k | 4.0 | O★ |

| Package | Type No. | Ratings | | Characteristics | | Status |
|---------|----------|----------------------|--------------------|-----------------|---------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | toff (μs) typ | |
| MPAK-4 | 2SC3957 | 30 | 0.3 | 2 k to 100 k | 0.8 | ★ |
| UPAK | 2SB1048 | -60 | -1.0 | From 2 k | 0.9 | O★ |
| | 2SD1470 | 60 | 1.0 | 2 k to 100 k | - | O★ |
| | 2SD1472 | 120 | 1.5 | 2 k to 30 k | 2.0 | O★ |

• High Frequency Amplification

| Package | Type No. | Ratings | | Characteristics | | | Status | | | |
|---------|--------------|----------------------|--------------------|--------------------------|-------------|--------------|---------|------|-----|----|
| | | V _{CEO} (V) | I _C (A) | f _t (GHz) typ | NF (dB) typ | Cob (pF) max | | | | |
| SPAK | 2SC3391 | 20 | 20 m | 0.94 | 3.5 | 1.2 | O★ | | | |
| TO-92 | 2SC460 | 30 | 0.1 | 0.23 | - | 3.5 | O★ | | | |
| | 2SC461 | 30 | 0.1 | 0.23 | - | 3.5 | O★ | | | |
| | 2SC535 | 20 | 20 m | 0.94 | 3.5 | 1.2 | O★ | | | |
| | 2SC1906 | 19 | 50 m | 1.0 | - | 2.0 | O★ | | | |
| | 2SC1907 | 19 | 50 m | 1.1 | - | 2.0 | O★ | | | |
| | 2SC2471 | 30 | 50 m | 2.0 | - | 1.5 | ★ | | | |
| | 2SC2512 | 20 | 50 m | 0.9 | - | - | ★ | | | |
| | 2SC3128 | 12 | 50 m | 4.5 | 2.2 | 0.9 | 1.5 | ★ | | |
| | 2SC3510 | 12 | 50 m | 4.5 | 2.2 | 0.9 | 1.5 | ★ | | |
| | 2SC3512 | 11 | 50 m | 6.0 | 1.6 | 0.9 | 1.6 | ★ | | |
| | 2SC4308 | 20 | 0.3 | 2.5 | - | 4.0 typ | O★ | | | |
| | 2SC4629 | 9.0 | 50 m | 8.0 | 1.2 | 0.9 | 1.85 | ★ | | |
| | TO-92 MOD | 2SC4693 | 20 | 0.3 | 2.5 | - | 4.5 typ | ★ | | |
| | MFPAK (1408) | 2SC5543 | 8 | 20 m | 8.5 | 1.1 | 0.9 | 0.9 | O★ | |
| | | 2SC5544 | 8 | 50 m | 6 | 1.0 | 0.9 | 1.4 | O★ | |
| | | 2SC5554 | 9 | 20 m | 7 | 1.4 | 0.9 | 0.9 | O★ | |
| | | 2SC5555 | 8 | 50 m | 9 | 1.1 | 0.9 | 0.85 | O★ | |
| | | 2SC5628 | 6 | 50 m | 5 | 1.1 | 0.9 | 1.3 | O★ | |
| | | 2SC5700 | 4 | 50 m | 16.0 | 0.9 | 0.9 | 0.8 | O★ | |
| | | 2SC5702 | 6 | 50 m | 7.8 | 1.1 | 0.9 | 0.9 | O★ | |
| | | 2SC5757 | 3.5 | 80 m | 6.5 | 1.2 | 0.9 | 1.2 | O★ | |
| | | 2SC5758 | 3.5 | 80 m | 8 | 1.2 | 0.9 | 0.95 | O★ | |
| | | 2SC5812 | 4 | 50 m | 15 | 1 | 0.9 | 0.4 | Δ★ | |
| | | 2SC5872 | 4 | 50 m | 10.5 | 1.0 | 0.9 | 0.4 | Δ★ | |
| | | 2SC5907 | 4 | 80 m | 15 | 1.2 | 0.9 | 0.85 | Δ★ | |
| | | SMPAK | 2SC5137 | 8.0 | 20 m | 10 | 1.5 | 0.9 | 0.8 | Δ★ |
| | | | 2SC5139 | 8.0 | 50 m | 11 | 1.1 | 0.9 | 1.1 | O★ |
| 2SC5247 | 8 | | 50 m | 13.5 | 1.2 | 0.9 | 0.75 | O★ | | |
| 2SC5629 | 6 | | 50 m | 5 | 1.1 | 0.9 | 1.3 | O★ | | |
| CMPAK | 2SC4260 | 13 | 50 m | 3.8 | - | - | 1.5 | O★ | | |
| | 2SC4261 | 15 | 50 m | 2.4 | - | - | 1.0 | O★ | | |
| | 2SC4262 | 15 | 50 m | 2.9 | - | - | 1.0 | O★ | | |
| | 2SC4264 | 11 | 50 m | 3.5 | - | - | 1.5 | O★ | | |
| | 2SC4265 | 20 | 50 m | 1.2 | - | - | 1.5 | O★ | | |
| | 2SC4463 | 20 | 50 m | 1.0 | - | - | - | ★ | | |
| | 2SC4537 | 11 | 50 m | 6.0 | 1.6 | 0.9 | 1.5 | O★ | | |
| | 2SC4593 | 9.0 | 50 m | 9.0 | 1.2 | 0.9 | 1.5 | ★ | | |
| | 2SC4784 | 8.0 | 20 m | 10 | 1.2 | 0.9 | 0.8 | O★ | | |

| Package | Type No. | Ratings | | Characteristics | | | Status | | |
|---------|----------|----------------------|--------------------|--------------------------|-------------|--------------|--------|------|------|
| | | V _{CEO} (V) | I _C (A) | f _t (GHz) typ | NF (dB) typ | Cob (pF) max | | | |
| CMPAK | 2SC4899 | 9.0 | 20 m | 9.0 | 1.2 | 0.9 | 0.85 | O★ | |
| | 2SC4901 | 9.0 | 50 m | 9.0 | 1.2 | 0.9 | 1.4 | O★ | |
| | 2SC4965 | 8.0 | 100m | - | - | - | 1.6 | O★ | |
| | 2SC5051 | 8.0 | 50 m | 11 | 1.1 | 0.9 | 1.15 | O★ | |
| | 2SC5851 | 30 | 100m | 0.23 | 5.5 | 0.1 | 1.6 | O★ | |
| | CMPAK-4 | 2SC4995 | 8.0 | 50 m | 11 | 1.1 | 0.9 | 1.05 | O★ |
| 2SC5081 | | 8.0 | 50 m | 13.5 | 1.1 | 0.9 | 0.75 | O★ | |
| 2SC5593 | | 4 | 12 m | 23 | 1.9 | 1.8 | 0.4 | O★ | |
| 2SC5594 | | 4 | 35 m | 22 | 1.2 | 1.8 | 0.6 | O★ | |
| 2SC5623 | | 3.5 | 12 m | 27 | 1.8 | 1.8 | 0.4 | O★ | |
| 2SC5624 | | 3.5 | 35 m | 28 | 1.2 | 1.8 | 0.6 | O★ | |
| 2SC5820 | | 4.6 | 35 | 20 | 1.4 | 1.8 | 0.15 | O★ | |
| 2SC5894 | | 4.6 | 12 | 20 | 2 | 1.8 | 0.29 | SPL★ | |
| MPAK | | 2SC2619 | 30 | 0.1 | 0.23 | - | - | 3.5 | O★ |
| | | 2SC2620 | 20 | 20 m | 0.94 | - | - | 1.2 | O★ |
| | | 2SC2732 | 25 | 20 m | 1.0 | - | - | 0.8 | ★ |
| | | 2SC2734 | 11 | 50 m | 3.5 | - | - | 1.5 | O★ |
| | | 2SC2735 | 20 | 50 m | 1.2 | - | - | 1.5 | O★ |
| | | 2SC2736 | 20 | 50 m | 2.2 | - | - | 1.0 | ★ |
| | 2SC2776 | 20 | 30 m | 0.32 | 5.5 | 0.1 | 1.5 | ★ | |
| | 2SC3127 | 12 | 50 m | 4.5 | 2.2 | 0.9 | 1.5 | O★ | |
| | 2SC3513 | 11 | 50 m | 6.0 | 1.6 | 0.9 | 1.5 | ★ | |
| | 2SC3793 | 15 | 50 m | 2.9 | - | - | 1.0 | ★ | |
| | 2SC4196 | 15 | 50 m | 2.4 | - | - | 1.0 | O★ | |
| | 2SC4197 | 13 | 50 m | 3.8 | - | - | 1.3 | O★ | |
| | 2SC4591 | 9.0 | 50 m | 9.0 | 1.2 | 0.9 | 1.5 | O★ | |
| | 2SC4680 | 8.0 | 50 m | - | - | - | 1.5 | ★ | |
| | 2SC4964 | 8.0 | 100m | - | - | - | 1.6 | ★ | |
| | 2SC5049 | 8.0 | 20 m | 10 | 1.2 | 0.9 | 0.8 | O★ | |
| | 2SC5050 | 8.0 | 50 m | 11 | 1.1 | 0.9 | 1.1 | ★ | |
| | 2SC5218 | 9.0 | 50 m | 9.0 | 1.2 | 0.9 | 1.4 | ★ | |
| | 2SC5772 | 9 | 100m | 9 | 1.1 | 0.9 | 0.9 | O★ | |
| | MPAK-4 | 2SC5890 | 12 | 75 m | 7.8 | 1.0 | 0.9 | 0.9 | SPL★ |
| 2SC4926 | | 8.0 | 50 m | 11 | 1.1 | 0.9 | 1.1 | O★ | |
| UPAK | 2SC5080 | 8.0 | 50 m | 13.5 | 1.1 | 0.9 | 0.75 | Δ★ | |
| | 2SC5545 | 6.0 | 50 m | 13 | 1.1 | 0.9 | 1.1 | O★ | |
| | 2SC4807 | 15 | 200m | 4.4 | 2.5 | 0.9 | 2.8 | O★ | |
| UPAK | 2SC4988 | 9.0 | 100m | 8.5 | 1.3 | 0.9 | 1.6 | O★ | |
| | 2SC5631 | 6.0 | 80 m | 11 | 1.8 | 0.9 | 2.0 | O★ | |

• Twin Transistors

| Package | Type No. | Ref. Chip Q1 | | | | | | | | Ref. Chip Q2 | | | | | | | | Status |
|----------|----------|----------------------|--------------------|--------------------------|-------------|---------|----------|----------------------|--------------------|--------------------------|-------------|---------|----------|-----|-----|----|--|--------|
| | | Ratings | | Characteristics | | | Cre (pF) | Ratings | | Characteristics | | | Cre (pF) | | | | | |
| | | V _{CEO} (V) | I _C (A) | f _t (GHz) typ | NF (dB) typ | f (GHz) | | V _{CEO} (V) | I _C (A) | f _t (GHz) typ | NF (dB) typ | f (GHz) | | | | | | |
| SMFPAK-6 | HTT1115S | 2SC5700 | 4 | 50 m | 13 | 1.0 | 0.9 | 0.3 | 2SC5757 | 3.5 | 80 m | 6 | 1.5 | 0.9 | 0.8 | O★ | | |
| | HTT1213S | 2SC5700 | 4 | 50 m | 12 | 1.0 | 0.9 | 0.3 | 2SC5700 | 4.0 | 50 m | 12 | 1.0 | 0.9 | 0.3 | O★ | | |
| EMFPAK-6 | HTT1115E | 2SC5700 | 4 | 50 m | 13 | 1.0 | 0.9 | 0.3 | 2SC5757 | 3.5 | 80 m | 6 | 1.5 | 0.9 | 0.8 | O★ | | |
| | HTT1213E | 2SC5700 | 4 | 50 m | 12 | 1.0 | 0.9 | 0.3 | 2SC5700 | 4.0 | 50 m | 12 | 1.0 | 0.9 | 0.9 | O★ | | |

Small Signal FET

•High Frequency Amplification

| Package | Type No. | Ratings | | Characteristics | | | | Status |
|---------|----------|---------------------|--------------------|---------------------------|------------|-------------|---------|--------|
| | | V _{DS} (V) | I _D (A) | C _{iss} (pF) typ | PG(dB) typ | NF (dB) typ | f (GHz) | |
| SPAK | 2SK439 | 20 | 30m | 2.5 | 30 | 2.0 | 0.1 | O★ |
| TO-92 | 2SK168 | 30 | 20m | 5.0 | 27 | 1.7 | 0.1 | *★ |
| | 2SK359 | 20 | 30m | 2.5 | 30 | 2.0 | 0.1 | O★ |
| CMPAK | 2SK1215 | 20 | 30m | 2.5 | 30 | 2.0 | 0.1 | O★ |
| CMPAK-4 | 2SK2685☆ | 6 | 20m | 0.80 | 21 | 0.5 | 0.9 | O★ |
| | 3SK296 | 12 | 25m | 1.5 | 19.5 | 2.0 | 0.9 | O★ |
| | 3SK298 | 12 | 25m | 2.9 | 25 | 1.0 | 0.2 | O★ |
| | 3SK309☆ | 6 | 18m | 0.39 | 21 | 1.25 | 0.9 | O★ |
| | 3SK317 | 14 | 25m | 3.0 | 27.6 | 1.0 | 0.2 | O★ |
| | 3SK318 | 6 | 20m | 1.7 | 21.5 | 1.6 | 0.9 | O★ |
| | BB101C | 6 | 25m | 1.7 | 20 | 2.1 | 0.9 | O★ |
| | BB102C | 12 | 25m | 1.6 | 20 | 2.1 | 0.9 | *★ |
| | BB301C | 6 | 25m | 3.1 | 26 | 1.3 | 0.2 | O★ |
| | BB302C | 12 | 25m | 3.0 | 26 | 1.7 | 0.2 | *★ |
| | BB304C | 12 | 25m | 3.1 | 29 | 1.2 | 0.2 | O★ |
| | BB305C | 12 | 25m | 3.1 | 28 | 1.5 | 0.2 | O★ |
| | BB501C | 6 | 20m | 1.7 | 21.5 | 1.8 | 0.9 | O★ |
| | BB502C | 6 | 20m | 1.7 | 22 | 1.6 | 0.9 | O★ |
| | BB503C | 6 | 20m | 1.7 | 22 | 1.8 | 0.9 | Δ★ |
| | BB504C | 6 | 30m | 2.1 | 22 | 1.75 | 0.9 | Δ★ |
| | BIC702C | 6 | 20m | 2.0 | 23 | 1.6 | 0.9 | *★ |
| | BIC703C | 6 | 30m | 2.0 | 22 | 1.8 | 0.9 | *★ |

| Package | Type No. | Ratings | | Characteristics | | | | Status |
|---------|----------|---------------------|--------------------|---------------------------|------------|-------------|---------|--------|
| | | V _{DS} (V) | I _D (A) | C _{iss} (pF) typ | PG(dB) typ | NF (dB) typ | f (GHz) | |
| MPAK | 2SK217 | 30 | 20m | 6.8 | 27 | 1.7 | 0.1 | *★ |
| | 2SK360 | 20 | 30m | 2.5 | 30 | 2.0 | 0.1 | O★ |
| MPAK-4 | 3SK295 | 12 | 25m | 1.5 | 19.5 | 2.0 | 0.9 | O★ |
| | 3SK297 | 12 | 25m | 2.9 | 25 | 1.0 | 0.2 | O★ |
| | 3SK300 | 14 | 25m | 3.1 | 27.6 | 1.0 | 0.2 | O★ |
| | 3SK319 | 6 | 20m | 1.7 | 21.5 | 1.6 | 0.9 | O★ |
| | BB101M | 6 | 25m | 1.7 | 20 | 2.1 | 0.9 | O★ |
| | BB102M | 12 | 25m | 1.6 | 20 | 2.1 | 0.9 | O★ |
| | BB301M | 6 | 25m | 3.1 | 26 | 1.3 | 0.2 | O★ |
| | BB302M | 12 | 25m | 3.0 | 26 | 1.7 | 0.2 | *★ |
| | BB304M | 12 | 25m | 3.1 | 29 | 1.2 | 0.2 | O★ |
| | BB305M | 12 | 25m | 3.1 | 28 | 1.5 | 0.2 | O★ |
| | BB501M | 6 | 20m | 1.7 | 21.5 | 1.8 | 0.9 | O★ |
| | BB502M | 6 | 20m | 1.7 | 22 | 1.6 | 0.9 | Δ★ |
| | BB503M | 6 | 20m | 1.7 | 22 | 1.8 | 0.9 | Δ★ |
| | BB504M | 6 | 30m | 2.1 | 22 | 1.75 | 0.9 | Δ★ |
| BIC702M | 6 | 20m | 2.0 | 23 | 1.6 | 0.9 | *★ | |
| BIC703M | 6 | 30m | 2.0 | 22 | 1.8 | 0.9 | *★ | |

•High Frequency Amplification (Twin Type)

| Package | Type No. | Ratings | | Characteristics (FET-1) | | | | Characteristics (EET-2) | | | | Status |
|---------|----------|---------------------|--------------------|---------------------------|----------------|-------------|---------|---------------------------|----------------|-------------|---------|--------|
| | | V _{DS} (V) | I _D (A) | C _{iss} (pF) typ | lyfsl (mS) typ | NF (dB) typ | f (GHz) | C _{iss} (pF) typ | lyfsl (mS) typ | NF (dB) typ | f (GHz) | |
| CMPAK-6 | TBB1002 | 6 | 30m | 1.8 | 26 | 1.7 | 0.9 | 2.6 | 25 | 1.2 | 0.2 | O★ |
| | TBB1004 | 6 | 30m | 1.8 | 26 | 1.7 | 0.9 | 2.7 | 32 | 1.2 | 0.2 | O★ |
| | TBB1005 | 6 | 30m | 1.8 | 26 | 1.7 | 0.9 | 2.6 | 25 | 1.2 | 0.2 | Δ★ |
| | TBB1008 | 6 | 30m | 1.8 | 26 | 1.7 | 0.9 | 2.7 | 32 | 1.2 | 0.2 | Δ★ |

•μ-FET Series (Small Signal Switching)

| Package | Type No. | V _{DSS} (V) | I _D (A) | RDS(on) (Ω) | | | | | | | | C _{iss} | Status |
|---------|----------|----------------------|--------------------|-------------|-------|----------|------|------------|------|------------|-----|------------------|--------|
| | | | | VGS = 10V | | VGS = 4V | | VGS = 2.5V | | VGS = 1.5V | | | |
| | | | | typ | max | typ | max | typ | max | typ | max | | |
| MPAK | 2SJ574 | -30 | -0.3 | 1.1 | 1.3 | 2.2 | 3.1 | - | - | - | - | 50 | O★ |
| | 2SJ575 | -30 | -0.1 | 2.8 | 3.3 | 5.7 | 7.9 | - | - | - | - | 25 | Δ★ |
| | 2SK3287 | 30 | 0.3 | 1.26 | 1.44 | 2.8 | 3.44 | - | - | - | - | 6 | O★ |
| | 2SK3288 | 30 | 0.1 | 2.7 | 3.5 | 4.7 | 7.0 | - | - | - | - | 3 | O★ |
| | 2SK3290 | 30 | 0.5 | 0.46 | 0.525 | 0.9 | 1.25 | - | - | - | - | 5 | O★ |
| CMPAK | 2SJ576 | -30 | -0.1 | 2.8 | 3.3 | 5.7 | 7.9 | - | - | - | - | 25 | O★ |
| | 2SJ586 | -20 | -0.1 | - | - | 4.1 | 5.0 | 6.0 | 8.5 | - | - | 28 | O★ |
| | 2SK3289 | 30 | 0.3 | 1.26 | 1.44 | 2.8 | 3.44 | - | - | - | - | 6 | O★ |
| | 2SK3348 | 20 | 0.1 | - | - | 1.6 | 1.9 | 2.2 | 3.2 | - | - | 18 | O★ |
| SMPAK | 2SK3378 | 30 | 0.1 | 2.7 | 3.5 | 4.7 | 7.0 | - | - | - | - | 1.6 | O★ |
| | 2SJ587 | -20 | 50m | - | - | 8.5 | 11.0 | 15.0 | 22.0 | - | - | 13 | O★ |

| Package | Type No. | V _{DSS} (V) | I _D (A) | RDS(on) (Ω) | | | | | | | | C _{iss} | Status |
|---------|-----------|----------------------|--------------------|-------------|-----|----------|------|------------|-------|------------|-----|------------------|--------|
| | | | | VGS = 10V | | VGS = 4V | | VGS = 2.5V | | VGS = 1.5V | | | |
| | | | | typ | max | typ | max | typ | max | typ | max | | |
| SMPAK | 2SK3349 | 20 | 50m | - | - | 2.8 | 3.6 | 4.8 | 7.2 | - | - | 6 | O★ |
| | H5N0301SM | 30 | 50m | - | - | 6 | 7.2 | 9 | 13 | - | - | 12 | Δ★ |
| | H5P0301SM | -30 | 50m | - | - | 16 | 20 | 22 | 30 | - | - | 15 | Δ★ |
| MFPK | H5N0201MF | 20 | 0.05 | - | - | 2.8 | 3.6 | 4.8 | 7.2 | - | - | 6 | Δ★ |
| | H5N0301MF | 30 | 0.05 | - | - | 6 | 7.2 | 9 | 13 | - | - | 12 | Δ★ |
| | H5P0201MF | -20 | -0.05 | - | - | 8.5 | 11.0 | 15.0 | 22.0 | - | - | 13 | Δ★ |
| CMPAK-6 | H5P0301MF | -30 | -0.05 | - | - | 16 | 20 | 22 | 30 | - | - | 15 | Δ★ |
| | HAT1066G | -30 | -0.05 | - | - | 16 | 20 | 22 | 31 | - | - | 12 | SPL |
| | HAT2106G | 30 | 0.05 | - | - | 6.5 | 8 | 10 | 14 | - | - | 15 | SPL |
| | HAT3016G | -30/30 | -0.05/0.05 | - | - | 16/6.5 | 20/8 | 22/10 | 31/20 | - | - | 12/15 | SPL |

•General Amplification

| Package | Type No. | Ratings | | | Characteristics | | Status |
|---------|----------|-----------------------------------------|------------------------------------------|--------------------------------------|-----------------|-----------------------|--------|
| | | V _{DS} (V _{DSX}) (V) | V _{GSS} (V _{GSO}) (V) | I _D (I _G) (A) | lyfsl (mS) min | I _{DSS} (mA) | |
| SPAK | 2SK494 | 22 | - | 0.1 | 20 | 6 to 40 | O★ |
| TO-92 | 2SK435 | 22 | - | 0.1 | 20 | 6 to 40 | O★ |
| MPAK | 2SK1070 | - | (-22) | 50m | 20 | 6 to 40 | O★ |

Note: O: Mass production
 SPL: Samples available
 Δ: Can be mass produced (Delivery time: 3 months later)
 *: Provided to the limited customers
 ★: Large order device (Unit: 500 pcs x N)
 ☆: GaAs

GaAs Linear IC

• High Frequency Linear IC

| Package | Type No. | Function and Characteristics | Status |
|---------|----------|-------------------------------------------------------------------------------------------------------------------------|--------|
| MPAK-5 | HA22022 | LNA, V _{DD} = 3 V, I _{dd} = 3 mA typ, NF = 1.3 dB typ (f = 1.5 GHz), PG = 16 dB typ (f = 1.5 GHz) | O |
| | HA22033 | LNA, V _{DD} = 2.7 V, I _{dd} = 1.7 mA typ, NF = 1.4 dB typ (f = 1.5 GHz), PG = 14 dB typ (f = 1.5 GHz) | O |

| Package | Type No. | Function and Characteristics | Status |
|----------|----------|-------------------------------------------------------------------------------------------------------|--------|
| MPAK-6 | HA22040 | PDC MIXER, CG = 10dBtyp, NF = 45 dB typ (V _{cc} = 2.7 V, I _b = 6 mA, f = 1.5 GHz) | O |
| TNP-16BV | HA22052 | CDMA/LNA+MIXER, V _{DD} = 2.8 V, I _{dd} = 20 mA, f = 894 MHz | O |

High Frequency Power MOS FET

• High Frequency Power Amplification

| Package | Type No. | Ratings | | Characteristics | | | | Status |
|---------|----------|----------------------|--------------------|--------------------------|---------------------|---------------------|----|--------|
| | | V _{DSS} (V) | I _D (A) | P _{out} (W) typ | | | | |
| | | | | f (MHz) | P _{in} (W) | V _{DD} (V) | | |
| RFPK-F | 2SK3174A | 60 | 16 | 270 | 860 | 14 | 28 | SPL |
| | 2SK3464 | 60 | 14 | 180 | 1482 | 10 | 28 | Δ |
| | 2SK3540 | 60 | 20 | 390 | 860 | 24 | 28 | Δ |
| | 2SK3545 | 60 | 20 | 260 | 2140 | 20 | 28 | SPL |
| RFPK-G | 2SK3175A | 60 | 8 | 135 | 860 | 7 | 28 | SPL |
| | 2SK3465 | 60 | 7 | 90 | 1482 | 5 | 28 | Δ |

| Package | Type No. | Ratings | | Characteristics | | | | Status |
|---------|----------|----------------------|--------------------|----------------------------|-----------------------|---------------------|------|--------|
| | | V _{DSS} (V) | I _D (A) | P _{out} (dBm) min | | | | |
| | | | | f (MHz) | P _{in} (dBm) | V _{DD} (V) | | |
| UPAK | 2SK3391 | 17 | 0.3 | 32 | 836 | 14 | 13.7 | O |
| RP8P | 2SK3390 | 17 | 1 | 38 | 836 | 21 | 13.7 | O |

Overseas Sales Only

Notice: These products are for overseas sales only.

Please contact: HISEM Design Center
HITACHI Semiconductor (Malaysia) Sdn. Bhd.
TEL: (60)(4)-6438121

• General Amplification (Small Signal Transistors)

| Package | Type No. | Ratings | | Characteristics | | Status |
|---------|-----------|----------------------|--------------------|-----------------|------------------------------|------------------|
| | | V _{CEO} (V) | I _C (A) | hFE | V _{CE(sat)} (V) max | |
| TO-92 | H945 | 50 | 0.2 | 135 to 600 | 0.25 | ★ |
| | H8050 | 20 | 0.7 | 20 to 240 | 0.5 | ★ |
| | H8550 | -20 | -0.7 | 60 to 240 | -0.5 | ★ |
| | H9012 | -20 | -0.5 | 64 to 250 | -1.5 | ★ ^{CBT} |
| | H9013 | 20 | 0.5 | 64 to 250 | 1.5 | ★ ^{CBT} |
| | H9014 | 30 | 0.1 | 100 to 1000 | 0.5 | ★ ^{CBT} |
| | H9015 | -30 | -0.1 | 100 to 1000 | -0.5 | ★ ^{CBT} |
| | HIT5417 | 20 | 0.03 | 39 to 198 | - | ★ |
| | HIT8050 | 20 | 0.7 | 20 to 240 | 0.5 | ★ |
| | HIT8550 | -20 | -0.7 | 60 to 240 | -0.5 | ★ |
| | HIT9012 | -20 | -0.5 | 64 to 250 | -1.5 | ★ |
| | HIT9013 | 20 | 0.5 | 64 to 250 | 1.5 | ★ |
| | HIT9014 | 30 | 0.1 | 100 to 1000 | 0.5 | ★ |
| | HIT9015 | -30 | -0.1 | 100 to 1000 | -0.5 | ★ |
| | TO-92 MOD | HIN5697 | 450 | 0.1 | 40 to 240 | 0.5 |
| HIT5609 | | 20 | 1.0 | 60 to 240 | 0.5 | ★ |
| HIT5610 | | -20 | -1.0 | 60 to 240 | -0.5 | ★ |

• High Frequency Amplification (Small Signal Transistors)

| Package | Type No. | Ratings | | Characteristics | | | Status |
|---------|----------|----------------------|--------------------|--------------------------|-------------|--------------------------|--------|
| | | V _{CEO} (V) | I _C (A) | f _r (GHz) typ | NF (dB) typ | C _{ob} (pF) max | |
| TO-92 | HIT9011 | 20 | 0.1 | - | - | - | ★ |
| | HIT9016 | 20 | 20 m | - | - | - | ★ |

Note: ★: Large order device (Unit: 500 pcs x N)
^{CBT}: Center Base Type

Power Transistors

• General Amplification

| Package | Type No. | Ratings | | Characteristics | | Status |
|---------|----------------|----------------------|--------------------|-----------------|------------------------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | V _{CE(sat)} (V) max | |
| DPAK | 2SB1407(L)/(S) | -35 | -2.5 | 60 to 320 | -1.0 | O |
| | 2SB1409(L)/(S) | -160 | -1.5 | 60 to 200 | -1.0 | O |
| | 2SD2121(L)/(S) | 35 | 2.5 | 60 to 320 | 1.0 | O |
| | 2SD2122(L)/(S) | 120 | 1.5 | 60 to 200 | 1.0 | * |
| | 2SD2123(L)/(S) | 160 | 1.5 | 60 to 200 | 1.0 | O |

| Package | Type No. | Ratings | | Characteristics | | Status |
|-----------|----------|----------------------|--------------------|-----------------|------------------------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | V _{CE(sat)} (V) max | |
| TO-220 AB | 2SB857 | -50 | -4.0 | 60 to 320 | -1.0 | O |
| | 2SB858 | -60 | -4.0 | 60 to 320 | -1.0 | O |
| | 2SB859 | -80 | -4.0 | 60 to 200 | -2.0 | O |
| | 2SB860 | -100 | -4.0 | 50 to 250 | -1.0 | O |
| | 2SB861 | -150 | -2.0 | 60 to 200 | -3.0 | O |
| | 2SD1133 | 50 | 4.0 | 60 to 320 | 1.0 | O |
| | 2SD1134 | 60 | 4.0 | 60 to 320 | 1.0 | O |
| | 2SD1135 | 80 | 4.0 | 60 to 200 | 2.0 | O |

• General Switching

| Package | Type No. | Ratings | | | Characteristics | | Status |
|-----------|----------------|----------------------|------------------------------------------|--------------------|-------------------------------|-------------------------|--------|
| | | V _{CEO} (V) | V _{CB0} (V _{CEs}) (V) | I _C (A) | V _{CE} (sat) (V) max | t _r (μs) max | |
| DPAK | 2SC4499(L)/(S) | 400 | 500 | 0.5 | 1.0 | 1.0 | O |
| | 2SD2115(L)/(S) | 60 | 150 | 2.0 | 0.8 | 0.6 | O |
| TO-220 AB | 2SB566(K) | -50 | -70 | -40 | -1.0 | 0.5 typ | O |
| | 2SB566A(K) | -60 | -70 | -40 | -1.0 | 0.5 typ | O |
| | 2SC2612 | 400 | 500 | 3.0 | 1.0 | 1.0 | O |
| | 2SC2613 | 400 | 500 | 5.0 | 1.0 | 1.0 | O |
| | 2SC2816 | 400 | 500 | 5.0 | 1.0 | 0.5 | O |
| | 2SC2898 | 400 | 500 | 8.0 | 1.0 | 0.8 | O |
| | 2SC2979 | 800 | 900 | 3.0 | 1.0 | 0.8 | O |
| | 2SC4913 | 2000 | 2000 | 20 m | 5.0 | - | O |
| | 2SC5273 | 1300 | 1300 | 0.03 | 5.0 | - | O |
| | 2SD476(K) | 50 | 70 | 4.0 | 1.0 | 0.5 typ | O |
| | 2SD476A(K) | 60 | 70 | 4.0 | 1.0 | 0.5 typ | O |

| Package | Type No. | Ratings | | | Characteristics | | Status |
|-----------|----------|----------------------|------------------------------------------|--------------------|-------------------------------|-------------------------|--------|
| | | V _{CEO} (V) | V _{CB0} (V _{CEs}) (V) | I _C (A) | V _{CE} (sat) (V) max | t _r (μs) max | |
| TO-220 AB | 2SD1137 | 100 | 100 | 4.0 | 1.0 | - | O |
| | 2SD1138 | 150 | 200 | 2.0 | 3.0 | - | O |
| | 2SD1163 | 120 | 300 | 7.0 | 2.0 | 0.5 | O |
| | 2SD1163A | 150 | 350 | 7.0 | 1.0 | 0.5 | O |
| | 2SD1527 | 1000 | - | 0.5 | 5.0 | - | O |
| TO-220 FM | 2SB1392 | -60 | -70 | -4.0 | -1.0 | - | O |
| | 2SB1530 | -150 | -200 | -2.0 | -3.0 | - | Δ |
| | 2SC5022 | 1500 | 1500 | 20 m | 5.0 | - | O |
| | 2SD2107 | 60 | 70 | 4.0 | 1.0 | - | O |
| | 2SD2337 | 150 | 200 | 2.0 | 3.0 | - | O |
| TO-3P | 2SC3336 | 400 | 500 | 15 | 1.0 | 0.5 | O |
| | 2SC3365 | 400 | 500 | 10 | 1.0 | 1.0 | O |

• General Switching (Darlington Transistors)

| Package | Type No. | Ratings | | Characteristics | | Status |
|-----------|----------------|----------------------|--------------------|-----------------|---------------------------|--------|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | t _{off} (μs) typ | |
| DPAK | 2SC4500(L)/(S) | 60 | 1.0 | From 2 k | 0.6 | O |
| | 2SD2124(L)/(S) | 120 | 1.5 | 2 k to 30 k | 2.0 | O |
| TO-220 AB | 2SB727(K) | -120 | -6.0 | 1 k to 20 k | 3.0 | O |
| | 2SB791(K) | -120 | -8.0 | 1 k to 20 k | 3.1 | O |
| | 2SB955(K) | -120 | -10 | 1 k to 20 k | 4.0 | O |
| | 2SB1091 | -60 | -8.0 | 1 k to 20 k | 3.0 | O |
| | 2SB1103 | -60 | -8.0 | 1 k to 20 k | 4.0 | O |
| | 2SC1881(K) | 60 | 3.0 | From 1 k | 5.0 | O |
| | 2SD768(K) | 120 | 6.0 | 1 k to 20 k | 3.0 | O |
| | 2SD970(K) | 120 | 8.0 | 1 k to 20 k | 6.5 | O |
| | 2SD1113(K) | 300 | 6.0 | From 500 | 23 | O |
| | 2SD1126(K) | 120 | 10 | 1 k to 20 k | 8.0 | O |
| | 2SD1606 | 120 | 6.0 | 1 k to 20 k | 9.0 | O |
| | 2SD1976 | 300 | 6.0 | From 500 | 16.0 | O |

| Package | Type No. | Ratings | | Characteristics | | Status | |
|------------|----------|----------------------|--------------------|-----------------|---------------------------|--------|---|
| | | V _{CEO} (V) | I _C (A) | h _{FE} | t _{off} (μs) typ | | |
| TO-220 FM | 2SB1389 | -60 | -4.0 | 1 k to 20 k | 5.0 | O | |
| | 2SB1390 | -60 | -8.0 | 1 k to 20 k | 4.0 | O | |
| | 2SB1391 | -120 | -8.0 | 1 k to 20 k | 3.1 | O | |
| | 2SB1399 | -120 | -10 | 1 k to 20 k | 4.0 | O | |
| | 2SB1400 | -120 | -6.0 | 1 k to 20 k | 3.0 | O | |
| | 2SD2101 | 200 | 10 | From 1500 | 11.5 | O | |
| | 2SD2104 | 120 | 8.0 | 1 k to 20 k | 6.5 | O | |
| | 2SD2106 | 120 | 6.0 | 1 k to 20 k | 3.0 | O | |
| | TO-3P | 2SB1032(K) | -120 | -10 | 1 k to 20 k | 4.0 | O |
| | | 2SB1079 | -100 | -20 | 1 k to 20 k | 3.5 | O |
| 2SB1494 | | -120 | -25 | 2 k to 20 k | 10 | O | |
| 2SD1436(K) | | 120 | 10 | 1 k to 20 k | 4.0 | O | |
| | 2SD1559 | 100 | 20 | 1 k to 20 k | 12.0 | O | |

Note: O: Mass production

SPL: Samples available

Δ: Can be mass produced (Delivery time: 3 months later)

*: Provided to the limited customers

★: Large order device (Unit: 500 pcs x N)

Power MOS FET

•General Switching

| Package | Type No. | Ratings | | Characteristics | | | Ciss (pF) typ | Status |
|-----------------|-----------|---------------|--------|-----------------|--------------|------|---------------|--------|
| | | Vdss (V) | Id (A) | Rds(ON) (Ω) max | | | | |
| | | | | 4 V (5 V) | 10 V (2.5 V) | | | |
| TO-92 | 2SK1336 | 60 | 0.3 | 2.5 | 1.7 | 33 | Δ★ | |
| | 2SK1337 | 100 | 0.3 | 6.5 | 4.5 | 35 | Δ★ | |
| TO-92 MOD | 2SJ386 | -30 | -3.0 | 0.8 | 0.4 | 177 | O★ | |
| | 2SJ483 | -30 | -5.0 | 0.17 | 0.11 | 630 | Δ★ | |
| | 2SJ496 | -60 | -5 | 0.24 | 0.16 | 600 | O★ | |
| | 2SK975 | 60 | 1.5 | 0.55 | 0.4 | 140 | O★ | |
| | 2SK2085 | 100 | 1 | 1.35 | 0.9 | 130 | Δ★ | |
| | 2SK2734 | 30 | 5 | 0.08 | 0.055 | 550 | Δ★ | |
| | 2SK2851 | 60 | 5 | 0.1 | 0.07 | 500 | O★ | |
| | 2SK3446 | 150 | 1 | 1.95 | (2.5) | 95 | Δ★ | |
| | 2SK3447 | 150 | 1 | 2.5 | 1.95 | 85 | Δ★ | |
| | H7P1001MD | -100 | -1.1 | 1.1 | 0.8 | 400 | SPL | |
| MPAK | 2SJ399 | -30 | -0.2 | 5.0 | 3.0 | 1.1 | O★ | |
| | 2SJ451▼ | -20 | -0.2 | 3.5 | (9) | 2.4 | O★ | |
| | 2SJ452▼ | -50 | -0.2 | 7.0 | (12) | 1.1 | *★ | |
| | 2SJ486▼ | -30 | -0.3 | 0.65 | (1.2) | 45 | O★ | |
| | 2SK2373 | 30 | 0.2 | 2.5 | 1.4 | 17.8 | O★ | |
| | 2SK2569▼ | 50 | 0.2 | 2.6 | (5) | 14 | O★ | |
| | 2SK2570▼ | 20 | 0.2 | 1.1 | (2.2) | 45 | O★ | |
| | 2SK2802▼ | 30 | 0.5 | 0.28 | (0.5) | 14 | *★ | |
| | 2SK2980▼ | 30 | 1.0 | 0.28 | (0.5) | 155 | O★ | |
| | 2SK3000 | 40 | 1 | 0.5 | 0.3 | 14 | O★ | |
| UPAK | 2SJ186 | -200 | -0.5 | - | 12 | 75 | O★ | |
| | 2SJ244▼ | -12 | -2.0 | 0.5* | (0.9) | 130 | O★ | |
| | 2SJ278 | -60 | -1.0 | 1.2 | 0.83 | 160 | O★ | |
| | 2SJ317▼ | -12 | -2.0 | 0.35 | 0.7 (-2.2V) | 63 | O★ | |
| | 2SJ361▼ | -20 | -2.0 | - | (1.5) | 3.2 | *★ | |
| | 2SJ484 | -30 | -2.0 | 0.45 | 0.23 | 230 | O★ | |
| | 2SJ517▼ | -20 | -2.0 | 0.24 | (0.43) | 320 | O★ | |
| | 2SJ518 | -60 | -2.0 | 0.63 | 0.46 | 220 | Δ★ | |
| | 2SK1334 | 200 | 1.0 | - | 3.8 | 80 | O★ | |
| | 2SK1579▼ | 12 | 2.0 | 0.35 | 0.7 (2.2V) | 110 | O★ | |
| | 2SK1697 | 60 | 0.5 | 2.5 | 1.7 | 33 | O★ | |
| | 2SK1698 | 100 | 0.3 | 6.5 | 4.5 | 35 | *★ | |
| | 2SK1764 | 60 | 2.0 | 0.6 | 0.45 | 140 | O★ | |
| | 2SK1772 | 30 | 1.0 | 0.85 | 0.6 | 30 | O★ | |
| | 2SK2247 | 30 | 2.0 | 0.45 | 0.35 | 177 | *★ | |
| | 2SK2315▼ | 60 | 2.0 | 0.45 | 0.6 (3V) | 173 | O★ | |
| | 2SK2788 | 60 | 2.0 | 0.25 | 0.16 | 180 | O★ | |
| | 2SK2978▼ | 20 | 2.5 | 0.12 | (0.2) | 260 | Δ★ | |
| | DPAK | 2SJ130(L)/(S) | -300 | -1.0 | - | 8.5 | 235 | O |
| | | 2SJ181(L)/(S) | -600 | -0.5 | - | 25 | 220 | O |
| 2SJ319(L)/(S) | | -200 | -3.0 | - | 2.3 | 330 | O | |
| 2SJ387(L)/(S)▼ | | -20 | -10 | 0.07 | (0.11) | 1170 | O | |
| 2SJ506(L)/(S) | | -30 | -10 | 0.18 | 0.085 | 630 | O | |
| 2SJ527(L)/(S) | | -60 | -5 | 0.8 | 0.4 | 220 | O | |
| 2SJ528(L)/(S) | | -60 | -7 | 0.37 | 0.22 | 400 | O | |
| 2SJ529(L)/(S) | | -60 | -10 | 0.24 | 0.16 | 580 | O | |
| 2SJ530(L)/(S) | | -60 | -15 | 0.16 | 0.1 | 850 | O | |
| 2SK1151(L)/(S) | | 450 | 1.5 | - | 5.5 | 160 | O | |
| 2SK1152(L)/(S) | | 500 | 1.5 | - | 6 | 160 | O | |
| 2SK1254(L)/(S) | | 120 | 3.0 | 0.55 | 0.4 | 420 | O | |
| 2SK1299(L)/(S) | | 100 | 3.0 | 0.45 | 0.35 | 400 | * | |
| 2SK1335(L)/(S) | | 200 | 3.0 | - | 0.8 | 380 | * | |
| 2SK1838(L)/(S) | | 250 | 1.0 | - | 8 | 60 | O | |
| 2SK1880(L)/(S) | | 600 | 1.5 | - | 8 | 250 | O | |
| 2SK2059(L)/(S) | | 600 | 3.0 | - | 5 | 295 | Δ | |
| 2SK2084(L)/(S) | | 20 | 7.0 | 0.075 | 0.053 | 800 | O | |
| 2SK2329(L)/(S)▼ | | 30 | 10 | 0.04 | (0.06) | 1250 | O | |
| 2SK2735(L)/(S) | | 30 | 20 | 0.05 | 0.028 | 750 | O | |
| 2SK2796(L)/(S) | 60 | 5 | 0.25 | 0.16 | 180 | O | | |
| 2SK2869(L)/(S) | 60 | 20 | 0.07 | 0.045 | 740 | O | | |
| 2SK2925(L)/(S) | 60 | 10 | 0.16 | 0.08 | 350 | O | | |
| 2SK2926(L)/(S) | 60 | 15 | 0.11 | 0.055 | 500 | O | | |
| 2SK3147(L)/(S) | 100 | 5 | 0.17 | 0.13 | 420 | O | | |
| 2SK3274(L)/(S) | 30 | 30 | 0.03 | 0.013 | 1500 | O | | |

| Package | Type No. | Ratings | | Characteristics | | | Ciss (pF) typ | Status |
|-----------|--------------|----------|--------|-----------------|--------------|------|---------------|--------|
| | | Vdss (V) | Id (A) | Rds(ON) (Ω) max | | | | |
| | | | | 4 V (5 V) | 10 V (2.5 V) | | | |
| DPAK | H5N2004DL/DS | 200 | 8 | - | 0.48 | 450 | O | |
| | H5N2005DL/DS | 200 | 6 | - | 0.65 | 300 | O | |
| | H5N2504DL/DS | 250 | 7 | 0.67 | 0.63 | 570 | O | |
| | H5N2505DL/DS | 250 | 5 | - | 0.89 | 300 | O | |
| | H5N2508DL/DS | 250 | 7 | - | 0.63 | 450 | O | |
| | H5N2510DL/DS | 250 | 5 | 0.97 | 0.89 | 390 | O | |
| | H5N5006DL/DS | 500 | 3 | - | 3.0 | 365 | O | |
| | H7P1002DL/DS | -100 | -15 | 0.15 | 0.105 | 2600 | SPL | |
| | TO-220 AB | 2SJ221 | -100 | -20 | 0.22 | 0.16 | 1800 | O |
| | | 2SJ247 | -100 | -8.0 | 0.45 | 0.3 | 880 | O |
| 2SJ539 | | -60 | -10 | 0.36 | 0.21 | 400 | O | |
| 2SJ540 | | -60 | -12 | 0.23 | 0.15 | 580 | O | |
| 2SJ541 | | -60 | -15 | 0.155 | 0.095 | 850 | O | |
| 2SJ542 | | -60 | -18 | 0.11 | 0.065 | 1300 | O | |
| 2SJ543 | | -60 | -20 | 0.095 | 0.055 | 1750 | O | |
| 2SJ544 | | -60 | -30 | 0.055 | 0.037 | 2500 | O | |
| 2SK740 | | 150 | 10 | - | 0.15 | 1200 | O | |
| 2SK1153 | | 450 | 3.0 | - | 2.8 | 330 | O | |
| 2SK1154 | | 500 | 3.0 | - | 3 | 330 | O | |
| 2SK1155 | | 450 | 5.0 | - | 1.4 | 640 | O | |
| 2SK1156 | | 500 | 5.0 | - | 1.5 | 640 | O | |
| 2SK1157 | | 450 | 7.0 | - | 0.8 | 1050 | O | |
| 2SK1158 | | 500 | 7.0 | - | 0.9 | 1050 | O | |
| 2SK1159 | | 450 | 8.0 | - | 0.7 | 1150 | O | |
| 2SK1160 | | 500 | 8.0 | - | 0.8 | 1150 | O | |
| 2SK1300 | | 100 | 10 | 0.35 | 0.25 | 525 | O | |
| 2SK1301 | | 100 | 15 | 0.18 | 0.13 | 860 | O | |
| 2SK1302 | | 100 | 20 | 0.12 | 0.085 | 1300 | O | |
| 2SK1338 | | 900 | 2.0 | - | 7 | 425 | O | |
| 2SK1400 | | 300 | 7.0 | - | 0.7 | 635 | O | |
| 2SK1400A | | 350 | 7.0 | - | 0.8 | 635 | O | |
| 2SK1402 | | 600 | 4.0 | - | 2.4 | 600 | O | |
| 2SK1402A | | 650 | 4.0 | - | 2.6 | 600 | O | |
| 2SK1667 | | 250 | 7.0 | - | 0.55 | 690 | O | |
| 2SK1761 | | 250 | 12 | - | 0.35 | 1100 | O | |
| 2SK1807 | | 900 | 4.0 | - | 4 | 740 | O | |
| 2SK1809 | | 600 | 5.0 | - | 1.5 | 1000 | O | |
| 2SK2328 | | 650 | 7.0 | - | 1.4 | 1180 | O | |
| 2SK2408▲ | | 500 | 7 | - | 0.9 | 1100 | O | |
| 2SK2590 | | 200 | 7 | - | 0.45 | 700 | O | |
| 2SK2800 | | 60 | 40 | 0.04 | 0.02 | 1500 | O | |
| 2SK2927 | | 60 | 10 | 0.15 | 0.075 | 350 | O | |
| 2SK2928 | | 60 | 15 | 0.105 | 0.052 | 500 | O | |
| 2SK2929 | | 60 | 25 | 0.07 | 0.034 | 740 | O | |
| 2SK2930 | | 60 | 35 | 0.05 | 0.026 | 1100 | Δ | |
| 2SK2931 | | 60 | 45 | 0.025 | 0.013 | 2200 | O | |
| 2SK2959 | | 30 | 50 | 0.018 | 0.01 | 2000 | O | |
| 2SK3069 | | 60 | 75 | 0.012 | 0.0075 | 7100 | O | |
| 2SK3080 | 30 | 30 | 0.05 | 0.028 | 750 | Δ | | |
| 2SK3081 | 30 | 45 | 0.025 | 0.014 | 1570 | O | | |
| 2SK3136 | 40 | 75 | 0.010 | 0.0058 | 6800 | O | | |
| 2SK3141 | 30 | 75 | 0.0085 | 0.005 | 6800 | O | | |
| 2SK3149 | 100 | 20 | 0.085 | 0.060 | 840 | Δ | | |
| 2SK3154 | 150 | 15 | 0.15 | 0.13 | 850 | O | | |
| 2SK3156 | 150 | 20 | 0.08 | 0.07 | 1750 | O | | |
| 2SK3158 | 150 | 30 | 0.063 | 0.045 | 2600 | Δ | | |
| 2SK3214 | 200 | 10 | 0.19 | 0.17 | 1100 | Δ | | |
| 2SK3215 | 200 | 8 | 0.55 | 0.40 | 410 | Δ | | |
| 2SK3228 | 80 | 75 | 0.012 | 0.0075 | 9800 | O | | |
| 2SK3418 | 60 | 85 | 0.009 | 0.0055 | 9770 | Δ | | |
| H7N0203AB | 20 | 90 | 0.0051 | 0.003 | 6800 | O | | |
| H7N0307AB | 30 | 60 | 0.0115 | 0.0058 | 2500 | Δ | | |
| H7N0308AB | 30 | 70 | 0.0085 | 0.0048 | 3350 | Δ | | |
| H7N0312AB | 30 | 85 | 0.0058 | 0.0033 | 6900 | Δ | | |
| H7N1004AB | 100 | 30 | 0.045 | 0.035 | 2800 | O | | |

Power MOS FET

• General Switching

| Package | Type No. | Ratings | | Characteristics | | | Status | |
|-------------|----------------|----------|---------|-----------------|--------------|---------------|--------|---|
| | | Vdss (V) | ID (A) | Rds(ON) (Ω) max | | Ciss (pF) typ | | |
| | | | | 4 V (4.5 V) | 10 V (2.5 V) | | | |
| TO-220 C/FM | 2SJ471 | -30 | -30 | 0.06 | 0.035 | 1700 | O | |
| | 2SJ531 | -60 | -18 | 0.11 | 0.065 | 1300 | O | |
| | 2SJ532 | -60 | -20 | 0.095 | 0.055 | 1750 | O | |
| | 2SJ533 | -60 | -30 | 0.055 | 0.037 | 2500 | O | |
| | 2SJ545 | -60 | -12 | 0.23 | 0.15 | 580 | O | |
| | 2SJ546 | -60 | -15 | 0.155 | 0.095 | 850 | O | |
| | 2SK2114 | 450 | 5.0 | - | 1.4 | 640 | O | |
| | 2SK2116 | 450 | 7.0 | - | 0.8 | 1050 | O | |
| | 2SK2117 | 500 | 7.0 | - | 0.9 | 1050 | O | |
| | 2SK2118 | 600 | 5.0 | - | 1.5 | 1000 | Δ | |
| | 2SK2144 | 600 | 3.0 | - | 5 | 295 | Δ | |
| | 2SK2423 | 450 | 7 | - | 0.7 | 1150 | * | |
| | 2SK2425 | 250 | 7 | - | 0.55 | 690 | O | |
| | 2SK2426 | 250 | 12 | - | 0.35 | 1100 | O | |
| | 2SK2431 | 450 | 3.0 | - | 2.8 | 330 | O | |
| | 2SK2529 | 60 | 50 | 0.016 | 0.01 | 3550 | O | |
| | 2SK2725 | 500 | 5 | - | 1.6 | 630 | O | |
| | 2SK2726 | 500 | 7 | - | 0.95 | 1100 | O | |
| | 2SK2736 | 30 | 30 | 0.05 | 0.028 | 750 | O | |
| | 2SK2737 | 30 | 45 | 0.025 | 0.014 | 1570 | O | |
| | 2SK2738 | 60 | 40 | 0.04 | 0.02 | 1500 | O | |
| | 2SK2932 | 60 | 10 | 0.15 | 0.075 | 350 | O | |
| | 2SK2933 | 60 | 15 | 0.105 | 0.052 | 500 | O | |
| | 2SK2934 | 60 | 25 | 0.07 | 0.034 | 740 | O | |
| | 2SK2935 | 60 | 35 | 0.05 | 0.026 | 1100 | O | |
| | 2SK2936 | 60 | 45 | 0.025 | 0.013 | 2200 | O | |
| | 2SK2956 | 30 | 50 | 0.018 | 0.01 | 2000 | O | |
| | 2SK3140 | 60 | 60 | 0.012 | 0.0075 | 7100 | O | |
| | 2SK3142 | 30 | 60 | 0.0085 | 0.005 | 6800 | O | |
| | 2SK3229 | 80 | 60 | 0.012 | 0.0075 | 9800 | O | |
| | 2SK3233 | 500 | 5 | - | 1.5 | 580 | O | |
| | 2SK3234 | 500 | 8 | - | 0.85 | 970 | O | |
| | H5N2502CF | 250 | 18 | - | 0.105 | 2300 | SPL | |
| | H7N0308CF | 30 | 60 | 0.0085 | 0.0048 | 3350 | O | |
| | TO-220 FM | 2SJ222 | -100 | -20 | 0.22 | 0.16 | 1800 | O |
| | | 2SJ248 | -100 | -8.0 | 0.45 | 0.3 | 880 | O |
| | | 2SJ350 | -120 | -6.0 | 0.9 | 0.7 | 900 | O |
| | | 2SJ410 | -200 | -6 | - | 0.85 | 920 | Δ |
| | | 2SJ504 | -60 | -20 | 0.095 | 0.055 | 1750 | O |
| | | 2SJ526 | -60 | -12 | 0.23 | 0.15 | 580 | O |
| | | 2SJ534 | -60 | -18 | 0.11 | 0.065 | 1300 | O |
| | | 2SJ535 | -60 | -30 | 0.055 | 0.037 | 2500 | O |
| 2SJ547 | | -60 | -10 | 0.36 | 0.21 | 400 | O | |
| 2SJ548 | | -60 | -15 | 0.155 | 0.095 | 850 | O | |
| 2SK1305 | | 100 | 10 | 0.35 | 0.25 | 525 | O | |
| 2SK1306 | | 100 | 15 | 0.18 | 0.13 | 860 | O | |
| 2SK1307 | | 100 | 20 | 0.12 | 0.085 | 1300 | O | |
| 2SK1318 | | 120 | 20 | 0.16 | 0.12 | 1300 | O | |
| 2SK1404 | | 600 | 5.0 | - | 1.5 | 1000 | O | |
| 2SK1566 | | 450 | 7.0 | - | 0.8 | 1050 | O | |
| 2SK1567 | | 500 | 7.0 | - | 0.9 | 1050 | O | |
| 2SK1572 | | 600 | 3.0 | - | 5 | 295 | O | |
| 2SK1626 | | 450 | 5.0 | - | 1.4 | 640 | O | |
| 2SK1627 | | 500 | 5.0 | - | 1.5 | 640 | O | |
| 2SK1637 | | 600 | 4.0 | - | 2.4 | 600 | O | |
| 2SK1668 | | 250 | 7.0 | - | 0.55 | 690 | O | |
| 2SK1762 | | 250 | 12 | - | 0.35 | 1100 | O | |
| 2SK1808 | | 900 | 4.0 | - | 4 | 740 | O | |
| 2SK1862 | | 450 | 3.0 | - | 2.8 | 330 | O | |
| 2SK1863 | | 500 | 3.0 | - | 3 | 330 | O | |
| 2SK1957 | | 200 | 7.0 | - | 0.45 | 700 | O | |
| 2SK2202 | | 120 | 7.0 | 0.55 | 0.4 | 420 | O | |
| 2SK2212 | | 200 | 10 | - | 0.3 | 1000 | O | |
| 2SK2422 | | 650 | 4.0 | - | 2.6 | 600 | Δ | |
| 2SK2937 | | 60 | 25 | 0.07 | 0.034 | 740 | O | |
| 2SK3148 | | 100 | 20 | 0.085 | 0.060 | 840 | O | |
| 2SK3152 | | 120 | 10 | 0.17 | 0.13 | 580 | O | |
| 2SK3153 | | 120 | 15 | 0.11 | 0.085 | 830 | Δ | |
| 2SK3155 | | 150 | 15 | 0.15 | 0.13 | 850 | O | |
| 2SK3157 | | 150 | 20 | 0.08 | 0.07 | 1750 | O | |
| 2SK3160 | | 200 | 10 | 0.19 | 0.17 | 1100 | O | |
| 2SK3162 | | 200 | 20 | 0.085 | 0.075 | 2420 | O | |
| 2SK3177 | | 200 | 15 | 0.125 | 0.115 | 1550 | O | |
| 2SK3209 | | 150 | 25 | 0.063 | 0.045 | 2600 | O | |
| 2SK3212 | | 100 | 5 | 0.17 | 0.13 | 420 | Δ | |
| H5N5001FM | | 500 | 5 | - | 1.5 | 580 | O | |
| H5N5006FM | 500 | 3 | - | 3.0 | 365 | O | | |
| H7N1004FM | 100 | 25 | (0.045) | 0.035 | 2800 | O | | |
| H7N1005FM | 100 | 12 | (0.155) | 0.11 | 830 | O | | |
| LPAK | 2SJ479(L)/(S) | -30 | -30 | 0.06 | 0.035 | 1700 | O | |
| | 2SJ505(L)/(S) | -60 | -50 | 0.036 | 0.022 | 4100 | O | |
| | 2SJ549(L)/(S) | -60 | -12 | 0.23 | 0.15 | 580 | O | |
| | 2SJ550(L)/(S) | -60 | -15 | 0.155 | 0.095 | 850 | O | |
| | 2SJ551(L)/(S) | -60 | -18 | 0.11 | 0.065 | 1300 | O | |
| | 2SJ552(L)/(S) | -60 | -20 | 0.095 | 0.055 | 1750 | O | |
| | 2SJ553(L)/(S) | -60 | -30 | 0.055 | 0.037 | 2500 | O | |
| | 2SK1313(L)/(S) | 450 | 5.0 | - | 1.4 | 640 | O | |
| | 2SK1314(L)/(S) | 500 | 5.0 | - | 1.5 | 640 | O | |
| | 2SK1315(L)/(S) | 450 | 8.0 | - | 0.7 | 1150 | O | |
| | 2SK1316(L)/(S) | 500 | 8.0 | - | 0.8 | 1150 | O | |
| | 2SK1528(L)/(S) | 900 | 4.0 | - | 4 | 740 | O | |

| Package | Type No. | Ratings | | Characteristics | | | Status | |
|----------|------------------|----------|--------|-----------------|--------------|---------------|--------|---|
| | | Vdss (V) | ID (A) | Rds(ON) (Ω) max | | Ciss (pF) typ | | |
| | | | | 4 V (4.5 V) | 10 V (2.5 V) | | | |
| LPAK | 2SK1540(L)/(S) | 450 | 7.0 | - | 0.8 | 1050 | O | |
| | 2SK1620(L)/(S) | 150 | 10 | - | 0.15 | 1200 | O | |
| | 2SK1623(L)/(S) | 100 | 20 | 0.12 | 0.085 | 1300 | O | |
| | 2SK1636(L)/(S) | 250 | 15 | - | 0.27 | 1250 | O | |
| | 2SK1647(L)/(S) | 900 | 2.0 | - | 7 | 425 | O | |
| | 2SK2553(L)/(S) | 60 | 50 | 0.016 | 0.01 | 3550 | O | |
| | 2SK2684(L)/(S) | 30 | 30 | 0.05 | 0.028 | 750 | O | |
| | 2SK2885(L)/(S) | 30 | 45 | 0.025 | 0.014 | 1570 | O | |
| | 2SK2912(L)/(S) | 60 | 40 | 0.04 | 0.02 | 1500 | O | |
| | 2SK2938(L)/(S) | 60 | 25 | 0.07 | 0.034 | 740 | O | |
| | 2SK2939(L)/(S) | 60 | 35 | 0.05 | 0.026 | 1100 | O | |
| | 2SK2940(L)/(S) | 60 | 45 | 0.025 | 0.013 | 2200 | O | |
| | 2SK2957(L)/(S) | 30 | 50 | 0.018 | 0.01 | 2000 | O | |
| | 2SK2958(L)/(S) | 30 | 75 | 0.014 | 0.007 | 4100 | O | |
| | 2SK3070(L)/(S) | 40 | 75 | 0.010 | 0.0058 | 6800 | O | |
| | 2SK3082(L)/(S) | 60 | 10 | 0.15 | 0.075 | 350 | O | |
| | 2SK3134(L)/(S) | 30 | 75 | 0.0085 | 0.005 | 6800 | O | |
| | 2SK3135(L)/(S) | 60 | 75 | 0.012 | 0.0075 | 7100 | O | |
| | 2SK3150(L)/(S) | 100 | 20 | 0.085 | 0.060 | 840 | O | |
| | 2SK3161(L)/(S) | 200 | 15 | 0.125 | 0.115 | 1550 | O | |
| | 2SK3203(L)/(S) | 30 | 45 | 0.028 | 0.014 | 1200 | O | |
| | 2SK3210(L)/(S) | 150 | 30 | 0.063 | 0.045 | 2600 | O | |
| | 2SK3211(L)/(S) | 200 | 25 | 0.085 | 0.075 | 2420 | O | |
| | 2SK3461(L)/(S) | 60 | 85 | 0.009 | 0.0055 | 9770 | O | |
| | H5N2001LD/L/S/LM | 200 | 20 | - | 0.125 | 1350 | Δ | |
| | H5N2501LD/L/S/LM | 250 | 18 | - | 0.18 | 1350 | SPL | |
| | H5N5006LD/L/S/LM | 500 | 3.5 | - | 3.0 | 365 | Δ | |
| | H7N0307LD/L/S/LM | 30 | 60 | 0.0115 | 0.0058 | 2500 | O | |
| | H7N0308LD/L/S/LM | 30 | 70 | 0.0085 | 0.0048 | 3350 | Δ | |
| | H7N0310LD/L/S/LM | 30 | 30 | (0.019) | 0.01 | 1400 | Δ | |
| | H7N0311LD/L/S/LM | 30 | 45 | (0.016) | 0.0088 | 1650 | Δ | |
| | H7N0312LD/L/S/LM | 30 | 85 | 0.0058 | 0.0033 | 6900 | Δ | |
| | H7N0602LD/L/S/LM | 60 | 85 | (0.009) | 0.0052 | 9000 | SPL | |
| | H7N1002LD/L/S/LM | 100 | 75 | (0.015) | 0.01 | 9700 | O | |
| | H7N1004LD/L/S/LM | 100 | 30 | (0.045) | 0.035 | 2800 | O | |
| | H7N1005LD/L/S/LM | 100 | 15 | (0.155) | 0.11 | 830 | O | |
| | TO-3P | 2SJ217 | -60 | -45 | 0.06 | 0.042 | 3800 | O |
| | | 2SJ554 | -60 | -45 | 0.055 | 0.037 | 2500 | O |
| | | 2SJ555 | -60 | -60 | 0.036 | 0.022 | 4100 | O |
| | | 2SK1161 | 450 | 10 | - | 0.8 | 1050 | O |
| | | 2SK1162 | 500 | 10 | - | 0.9 | 1050 | O |
| | | 2SK1163 | 450 | 11 | - | 0.7 | 1150 | O |
| 2SK1164 | | 500 | 11 | - | 0.8 | 1150 | O | |
| 2SK1165 | | 450 | 12 | - | 0.55 | 1450 | O | |
| 2SK1166 | | 500 | 12 | - | 0.6 | 1450 | O | |
| 2SK1167 | | 450 | 15 | - | 0.36 | 2050 | O | |
| 2SK1168 | | 500 | 15 | - | 0.4 | 2050 | O | |
| 2SK1169 | | 450 | 20 | - | 0.25 | 2800 | O | |
| 2SK1170 | | 500 | 20 | - | 0.27 | 2800 | O | |
| 2SK1303 | | 100 | 30 | 0.09 | 0.06 | 1750 | O | |
| 2SK1304 | | 100 | 40 | 0.04 | 0.03 | 3500 | O | |
| 2SK1317 | | 1500 | 2.5 | - | 12 | 990 | O | |
| 2SK1339 | | 900 | 3.0 | - | 7 | 410 | O | |
| 2SK1340 | | 900 | 5.0 | - | 4 | 760 | O | |
| 2SK1341 | | 900 | 6.0 | - | 3 | 980 | O | |
| 2SK1342 | | 900 | 8.0 | - | 1.6 | 1730 | O | |
| 2SK1401 | | 300 | 15 | - | 0.35 | 1250 | O | |
| 2SK1401A | | 350 | 15 | - | 0.4 | 1250 | O | |
| 2SK1403 | | 600 | 8.0 | - | 1.3 | 1180 | O | |
| 2SK1403A | | 650 | 8.0 | - | 1.4 | 1180 | O | |
| 2SK1515▲ | | 450 | 10 | - | 0.8 | 1050 | O | |
| 2SK1516▲ | | 500 | 10 | - | 0.9 | 1050 | O | |
| 2SK1517▲ | | 450 | 20 | - | 0.25 | 2800 | O | |
| 2SK1518▲ | | 500 | 20 | - | 0.27 | 2800 | O | |
| 2SK1573 | | 600 | 15 | - | 0.5 | 3150 | O | |
| 2SK1669▲ | | 250 | 30 | - | 0.095 | 3100 | O | |
| 2SK1671 | | 250 | 30 | - | 0.095 | 3100 | O | |
| 2SK1773 | | 1000 | 5.0 | - | 2 | 1700 | O | |
| 2SK1835 | | 1500 | 4.0 | - | 7 | 1700 | O | |
| 2SK1933 | | 900 | 10 | - | 1.2 | 2620 | O | |
| 2SK1934 | | 1000 | 8.0 | - | 1.6 | 2690 | O | |
| 2SK1968 | | 600 | 12 | - | 0.88 | 1800 | O | |
| 2SK2007▲ | | 250 | 20 | - | 0.15 | 2350 | O | |
| 2SK2075 | | 250 | 20 | - | 0.13 | 2400 | Δ | |
| 2SK2096 | | 60 | 45 | 0.028 | 0.022 | 3780 | O | |
| 2SK2554 | | 60 | 75 | 0.01 | 0.006 | 7700 | O | |
| 2SK2568 | | 500 | 12 | - | 0.6 | 1560 | O | |
| 2SK2586 | | 60 | 60 | 0.016 | 0.01 | 3550 | O | |
| 2SK2727 | 500 | 10 | - | 0.95 | 1100 | O | | |
| 2SK2728 | 500 | 18 | - | 0.45 | 2150 | O | | |
| 2SK2729 | 500 | 20 | - | 0.29 | 3300 | O | | |
| 2SK2730 | 500 | 25 | - | 0.24 | 3500 | O | | |
| 2SK2828 | 700 | 12 | - | 1.2 | 1850 | O | | |
| 2SK2955 | 60 | 45 | 0.025 | 0.013 | 2200 | O | | |
| 2SK3151 | 100 | 50 | 0.025 | 0.015 | 4000 | O | | |
| 2SK3159 | 150 | 50 | 0.042 | 0.030 | 4060 | Δ | | |
| 2SK3163 | 60 | 75 | 0.012 | 0.0075 | 7100 | O | | |
| 2SK3235 | 500 | 15 | - | 0.4 | 1920 | O | | |
| 2SK3419 | 60 | 90 | 0.009 | 0.0055 | 9770 | O | | |
| H5N2003P | 200 | 60 | - | 0.042 | 5150 | Δ | | |
| H5N2503P | 250 | 50 | - | 0.055 | 5150 | O | | |

Power MOS FET

•General Switching

| Package | Type No. | Ratings | | Characteristics | | | Status | |
|----------------|--------------------|-------------|--------|-----------------|--------------|---------------|--------|---|
| | | Vdss (V) | ID (A) | Rds(ON) (Ω) max | | Ciss (pF) typ | | |
| | | | | 4 V (4.5 V) | 10 V (2.5 V) | | | |
| TO-3P | H5N2507P▲ | 250 | 50 | - | 0.055 | 5000 | Δ | |
| | H5N2509P | 250 | 30 | - | 0.069 | 3600 | O | |
| | H5N3003P | 300 | 40 | - | 0.069 | 5150 | O | |
| | H5N3004P | 300 | 25 | - | 0.093 | 3600 | O | |
| | H5N3008P▲ | 300 | 40 | - | 0.069 | 5150 | Δ | |
| | H5N5007P | 500 | 25 | - | 0.225 | 3900 | O | |
| | H5N6001P | 600 | 20 | - | 0.38 | 4640 | O | |
| | TO-3P FM | 2SJ216 | -60 | -35 | 0.09 | 0.06 | 2400 | O |
| 2SJ218 | | -60 | -45 | 0.06 | 0.042 | 3800 | O | |
| 2SK1298 | | 60 | 40 | 0.025 | 0.018 | 3600 | O | |
| 2SK1328 | | 450 | 12 | - | 0.55 | 1450 | O | |
| 2SK1329 | | 500 | 12 | - | 0.6 | 1450 | O | |
| 2SK1405▲ | | 600 | 15 | - | 0.5 | 2660 | O | |
| 2SK1666 | | 60 | 45 | 0.035 | 0.02 | 3950 | Δ | |
| 2SK1670▲ | | 250 | 30 | - | 0.095 | 3100 | O | |
| 2SK1775 | | 900 | 8.0 | - | 1.6 | 1730 | O | |
| 2SK1832 | | 500 | 10 | - | 0.9 | 1050 | O | |
| 2SK1859 | | 900 | 6.0 | - | 3 | 980 | O | |
| 2SK2008▲ | | 250 | 20 | - | 0.15 | 2350 | O | |
| 2SK2203 | | 60 | 50 | 0.013 | 0.01 | 8330 | O | |
| 2SK2225 | | 1500 | 2.0 | - | 12 | 990 | O | |
| H5N2301PF | | 230 | 25 | - | 0.085 | 2300 | O | |
| H5N2509PF | | 250 | 30 | - | 0.069 | 3600 | Δ | |
| TO-3PL | | 2SK1519▲ | 450 | 30 | - | 0.15 | 5800 | O |
| | | 2SK1520▲ | 500 | 30 | - | 0.16 | 5800 | O |
| | | 2SK1521▲ | 450 | 50 | - | 0.1 | 8700 | O |
| | | 2SK1522▲ | 500 | 50 | - | 0.11 | 8700 | O |
| | | 2SK1526 | 450 | 40 | - | 0.15 | 5800 | O |
| | 2SK1527 | 500 | 40 | - | 0.16 | 5800 | O | |
| | 2SK1628 | 450 | 30 | - | 0.25 | 2800 | O | |
| | 2SK1629 | 500 | 30 | - | 0.27 | 2800 | O | |
| | 2SK1836 | 450 | 50 | - | 0.1 | 8150 | O | |
| | 2SK1837 | 500 | 50 | - | 0.11 | 8150 | O | |
| | 2SK1947▲ | 250 | 50 | - | 0.06 | 5810 | O | |
| | 2SK1948 | 250 | 50 | - | 0.06 | 5830 | O | |
| | 2SK1971 | 500 | 35 | - | 0.23 | 8800 | O | |
| | 2SK2393 | 1500 | 8 | - | 2.8 | 4370 | O | |
| | H5N5004PL▲ | 500 | 50 | - | 0.11 | 7630 | Δ | |
| | H5N5011PL | 500 | 50 | - | 0.115 | 7700 | Δ | |
| | FP-8DA JEDEC SOP-8 | HAT1016R(D) | -30 | -4.5 | 0.18 | 0.09 | 660 | O |
| | | HAT1020R | -30 | -5 | 0.13 | 0.07 | 860 | O |
| | | HAT1021R▼ | -20 | -5.5 | 0.06 | (0.085) | 1200 | O |
| | | HAT1023R▼ | -20 | -7 | 0.04 | (0.06) | 2250 | O |
| | | HAT1024R(D) | -30 | -3.5 | 0.34 | 0.16 | 350 | O |
| HAT1025R▼(D) | | -20 | -4.5 | 0.095 | (0.15) | 860 | O | |
| HAT1026R | | -30 | -7 | 0.065 | 0.037 | 1700 | O | |
| HAT1029R▼(D) | | -20 | -3.5 | 0.14 | (0.23) | 465 | Δ | |
| HAT1036R | | -30 | -12 | 0.034 | 0.014 | 4200 | O | |
| HAT1038R/RJ(D) | | -60 | -3.5 | 0.23 | 0.15 | 600 | O | |
| HAT1048R | | -30 | -16 | (0.0135) | 0.007 | 5700 | O | |
| HAT1054R▼(D) | | -20 | -6 | (0.03) | (0.05) | 1550 | O | |
| HAT2016R(D) | | 30 | 6.5 | 0.08 | 0.045 | 560 | O | |
| HAT2019R▼ | | 30 | 8 | 0.027 | (0.037) | 920 | * | |
| HAT2020R | | 30 | 8 | 0.05 | 0.028 | 780 | * | |
| HAT2022R | | 30 | 11 | 0.025 | 0.015 | 1450 | O | |
| HAT2024R(D) | | 30 | 5.5 | 0.11 | 0.065 | 310 | O | |
| HAT2025R | | 30 | 8 | (0.05) | 0.026 | 660 | O | |
| HAT2026R▼ | | 20 | 11 | 0.015 | (0.021) | 1760 | O | |
| HAT2027R▼(D) | | 20 | 7 | 0.038 | (0.053) | 720 | O | |
| HAT2028R/RJ(D) | | 60 | 4 | 0.16 | 0.10 | 280 | O | |
| HAT2029R▼(D) | | 28 | 7.5 | 0.033 | (0.043) | 780 | O | |
| HAT2033R/RJ | | 60 | 7 | 0.053 | 0.038 | 740 | O | |
| HAT2036R | | 30 | 12 | (0.03) | 0.015 | 1200 | O | |
| HAT2038R/RJ(D) | | 60 | 5 | 0.058 | 0.084 | 520 | O | |
| HAT2040R | | 30 | 15 | 0.013 | 0.008 | 4400 | O | |
| HAT2043R(D) | | 30 | 8 | 0.029 | 0.022 | 1170 | O | |
| HAT2044R▼ | | 30 | 15 | (0.009) | (0.013) | 3420 | Δ | |
| HAT2058R(D) | | 100 | 4 | 0.18 | 0.145 | 420 | O | |
| HAT2064R | | 30 | 16 | (0.01) | 0.0063 | 2200 | O | |
| HAT2068R | | 30 | 14 | (0.016) | 0.009 | 1650 | O | |
| HAT2070R | | 30 | 12 | (0.022) | 0.014 | 1400 | O | |
| HAT2071R | | 30 | 10 | (0.036) | 0.020 | 740 | O | |
| HAT2077R | | 200 | 3 | - | 0.235 | 830 | O | |
| HAT2080R | | 250 | 1.7 | - | 0.85 | 300 | O | |
| HAT2085R | | 200 | 2 | - | 0.64 | 300 | O | |
| HAT2087R | | 250 | 2.5 | - | 0.31 | 830 | O | |

| Package | Type No. | Ratings | | Characteristics | | | Status |
|--------------------|-----------------------|----------|-------------|-----------------|--------------|---------------|--------|
| | | Vdss (V) | ID (A) | Rds(ON) (Ω) max | | Ciss (pF) typ | |
| | | | | 4 V (4.5 V) | 10 V (2.5 V) | | |
| FP-8DA JEDEC SOP-8 | HAT2088R | 200 | 2 | - | 0.44 | 450 | O |
| | HAT2089R | 250 | 2 | - | 0.6 | 450 | O |
| | HAT2092R(D) | 30 | 11 | (0.025) | 0.016 | 1400 | Δ |
| | HAT2093R(D) | 30 | 9 | (0.039) | 0.023 | 750 | O |
| | HAT2095R | 150 | 2.5 | - | 0.42 | 300 | SPL |
| | HAT2103R(D) | 30 | 4.5 | (0.13) | 0.065 | 220 | O |
| | HAT2108R(D) | 28 | 11 | 0.015 | (0.022) | 2200 | O |
| | HAT3004R (Nch/Pch) | 30/-30 | 5.5/-3.5 | 0.11/0.34 | 0.065/0.16 | 310/350 | O |
| | HAT3006R (Nch/Pch) | 30/-30 | 6.5/-4.5 | 0.08/0.18 | 0.045/0.09 | 560/660 | O |
| | HAT3008R/RJ (Nch/Pch) | 60/-60 | 5/-3.5 | 0.084/0.23 | 0.058/0.15 | 520/600 | O |
| | HAT3010R (Nch/Pch) | 60 | 6/-5 | 0.045/0.13 | 0.032/0.076 | 1050/1350 | O |
| | HAT3017R (Nch/Pch) | 30/-30 | 3.8/-2.6 | (0.185/0.45) | 0.18/0.115 | 150/210 | SPL |
| HAT3019R (Nch/Pch) | 100/-100 | 3.5/-2.3 | (0.16/0.50) | 0.115/0.30 | 815/930 | SPL | |
| TTP-8D (TSSOP-8) | HAT1031T▼(D) | -20 | -2.5 | 0.16 | (0.28) | 390 | O |
| | HAT1033T▼ | -20 | -3.5 | 0.063 | (0.09) | 970 | O |
| | HAT1041T▼ | -20 | -6 | 0.026 | (0.045) | 1850 | O |
| | HAT2031T▼(D) | 20 | 3.5 | 0.07 | (0.098) | 300 | Δ |
| | HAT2037T▼ | 28 | 5.5 | 0.028 | (0.038) | 780 | O |
| | HAT2042T▼(D) | 28 | 5 | 0.034 | (0.044) | 510 | O |
| | HAT2045T▼(D) | 28 | 6 | 0.026 | (0.037) | 650 | O |
| | HAT2050T(D) | 100 | 1 | 1 | 0.75 | 90 | O |
| | HAT2051T▼(D) | 30 | 1 | 0.2 | (0.3) | 155 | O |
| | HAT2052T▼(D) | 28 | 5 | 0.034 | (0.044) | 510 | O |
| | HAT2080T | 250 | 1.2 | - | 0.85 | 300 | O |
| HAT2085T | 200 | 1.4 | - | 0.64 | 300 | O | |
| TSOP-6 | HAT1043M▼ | -20 | -4.4 | (0.065) | (0.110) | 750 | O |
| | HAT1044M | -30 | -4.5 | (0.105) | 0.060 | 600 | O |
| | HAT1053M▼ | -20 | -5.5 | (0.048) | (0.074) | 1240 | * |
| | HAT1063M(D)▼ | -12 | -1 | (0.15) | (0.265) | 385 | O |
| | HAT2053M▼ | 20 | 6.1 | (0.033) | (0.048) | 570 | O |
| | HAT2054M | 30 | 6.3 | (0.052) | 0.031 | 620 | O |
| LFPACK | HAT1072H | -30 | -40 | (0.0077) | 0.0045 | 9100 | O |
| | HAT2096H | 30 | 40 | (0.0088) | 0.0053 | 2200 | O |
| | HAT2099H | 30 | 50 | (0.0073) | 0.0037 | 4750 | O |
| | HAT2116H | 30 | 35 | (0.015) | 0.0077 | 1650 | O |
| | HAT2119H | 250 | 5 | - | 0.63 | 450 | O |
| | HAT2129H | 40 | 30 | - | 7.5 | 3300 | Δ |
| | HAT2132H | 200 | 6 | - | 0.45 | 450 | SPL |
| | HAT2134H | 20 | 60 | 5.8 | 2.9 | 4500 | Δ |
| | HAT2137H | 40 | 45 | - | 4.8 | 6200 | Δ |
| | HAT2139H | 40 | 20 | - | 11.5 | 2000 | Δ |
| | HAT2140H | 100 | 25 | - | 16 | 6350 | Δ |
| | HAT2141H | 100 | 15 | - | 27.5 | 3200 | Δ |
| | HAT2142H | 100 | 10 | - | 44 | 2000 | Δ |
| | HAT2143H | 30 | 40 | 11.5 | 6.1 | 2450 | O |
| | HAT2159H | 20 | 55 | (0.0049) | 0.003 | 5200 | SPL |
| | HAT2160H | 20 | 60 | (0.0041) | 0.0026 | 7750 | SPL |
| | HAT2161H | 20 | 50 | (0.0057) | 0.0034 | 4200 | SPL |
| | HAT2162H | 20 | 40 | (0.0086) | 0.005 | 2800 | SPL |
| | HAT2163H | 20 | 30 | (0.0125) | 0.0071 | 1780 | SPL |
| | HAT2164H | 30 | 60 | (0.0044) | 0.0031 | 7600 | SPL |
| | HAT2165H | 30 | 55 | (0.0053) | 0.0033 | 5200 | SPL |
| | HAT2166H | 30 | 45 | (0.0061) | 0.0038 | 4200 | SPL |
| | HAT2167H | 30 | 40 | (0.0093) | 0.0055 | 2800 | SPL |
| | HAT2168H | 30 | 30 | (0.0135) | 0.0079 | 1780 | SPL |
| | HAT2169H | 40 | 50 | - | 0.0043 | 4350 | SPL |
| | HAT2170H | 40 | 45 | - | 0.0056 | 3600 | SPL |
| HAT2171H | 40 | 40 | - | 0.0068 | 2280 | SPL | |
| HAT2172H | 40 | 30 | - | 0.0098 | 1445 | SPL | |
| HAT2173H | 100 | 25 | - | 0.015 | 4350 | SPL | |
| HAT2174H | 100 | 20 | - | 0.027 | 2280 | SPL | |
| HAT2175H | 100 | 15 | - | 0.042 | 1445 | SPL | |
| CMFPAK-6 | HAT1058C▼ | -20 | -3 | (0.074) | (0.126) | 770 | O |
| | HAT1059C▼ | -12 | -3 | (0.064) | (0.088) | 500 | O |
| | HAT1068C▼ | -20 | -3 | (0.065) | (0.096) | 1010 | SPL |
| CMPAK-6 SOP-8 | HAT1069C▼ | -12 | -3 | (0.059) | (0.077) | 1310 | SPL |
| | HAT1062G▼ | -20 | -0.3 | (0.57) | (0.96) | 95 | O |
| | HAT1047R/RJ | -30 | -14 | (0.025) | 0.012 | 3500 | O |
| | HAT2114R/RJ | 60 | 6 | (0.05) | 0.032 | 1000 | O |

Note: O: Mass Production
 SPL: Samples available
 Δ: Can be mass produced (Delivery time: 3 months later)
 *: Provided to the limited customers

▼: 2.5 V RDS (ON)(Ω)
 ▲: Built-in high speed diode
 (D): Dual chip
 Samples of HAT series is available in type numbers HATxxxxWS.

Power MOS FET

•General Amplification

| Package | Type No. | Ratings | | Characteristics | | | Status |
|--------------|----------|-------------------------------------------------|-----------------------|------------------|--------------------------------------------------------------|------------------|--------|
| | | V _{DSS} (V _{DSSX}) (V) | I _D (A) | lyfsI (S) typ | V _{DSS} (sat) (V _{DSS} (on)) (V) max | Ciss (pF) typ | |
| TO-220 AB | 2SJ76 | (-140) | -0.5 | 0.035 | -2 | 120 | O |
| | 2SJ77 | (-160) | -0.5 | 0.035 | -2 | 120 | O |
| | 2SJ78 | (-180) | -0.5 | 0.035 | -2 | 120 | O |
| | 2SJ79 | (-200) | -0.5 | 0.035 | -2 | 120 | O |
| | 2SK213 | (140) | 0.5 | 0.04 | 2 | 90 | O |
| | 2SK214 | (160) | 0.5 | 0.04 | 2 | 90 | O |
| | 2SK215 | (180) | 0.5 | 0.04 | 2 | 90 | O |
| | 2SK216 | (200) | 0.5 | 0.04 | 2 | 90 | O |
| TO-3P | 2SJ160 | (-120) | -7 | 1.0 | -12 | 900 | O |

| Package | Type No. | Ratings | | Characteristics | | | Status |
|---------|----------|-------------------------------------------------|-----------------------|------------------|--------------------------------------------------------------|------------------|--------|
| | | V _{DSS} (V _{DSSX}) (V) | I _D (A) | lyfsI (S) typ | V _{DSS} (sat) (V _{DSS} (on)) (V) max | Ciss (pF) typ | |
| TO-3P | 2SJ161 | (-140) | -7 | 1.0 | -12 | 900 | O |
| | 2SJ162 | (-160) | -7 | 1.0 | -12 | 900 | O |
| | 2SJ351 | (-180) | -8 | 1.0 | -12 | 800 | O |
| | 2SJ352 | (-200) | -8 | 1.0 | -12 | 800 | O |
| | 2SK1056 | (120) | 7 | 1.0 | 12 | 600 | O |
| | 2SK1057 | (140) | 7 | 1.0 | 12 | 600 | O |
| | 2SK1058 | (160) | 7 | 1.0 | 12 | 600 | O |
| | 2SK2220 | (180) | 8 | 1.0 | 12 | 600 | O |
| | 2SK2221 | (200) | 8 | 1.0 | 12 | 600 | O |

•Arrays

| Package | Type No. | Ratings | | Characteristics | | | Status | |
|---------|-----------------|-------------------------|-----------------------|------------------------------|-----------------|------------------|--------|---|
| | | V _{DSS} (V) | I _D (A) | R _{DS} (ON) (Ω) max | | Ciss (pF) typ | | |
| | | | | 4 V | 10 V (2.5 V) | | | |
| SP-10 | 4AK15 | 60 | 8.0 | 0.095 | 0.07 | 860 | O | |
| | 4AK16 | 60 | 5.0 | 0.25 | 0.18 | 400 | O | |
| | 4AK17 | 60 | 10 | 0.065 | 0.045 | 1400 | O | |
| | 4AK18 | 60 | 2.5 | 0.53 | 0.38 | 240 | O | |
| | 4AK19 | 120 | 5.0 | 0.6 | 0.5 | - | O | |
| | 4AK20 | 100 | 5.0 | 0.35 | 0.25 | 525 | O | |
| | 4AK21 | 100 | 8.0 | 0.125 | 0.09 | 1300 | O | |
| | 4AK25 | 60 | 1.5 | 0.6 | 0.45 | 140 | O | |
| | 4AK27 | 60 | 5 | 0.2 | 0.15 | 390 | * | |
| | 4AM11 (Nch/Pch) | 60/ -60 | 5.0/ -5.0 | 0.24/ 0.27 | 0.17/ 0.2 | 400/ 900 | O | |
| | 4AM12 (Nch/Pch) | 60/ -60 | 8.0/ -8.0 | 0.11/ 0.18 | 0.075/ 0.09 | 860/ 1400 | O | |
| | 4AM13 (Nch/Pch) | 60/ -60 | 3.0/ -3.0 | 0.5/ 0.55 | 0.35/ 0.4 | 240/ 425 | O | |
| | SP-12 | 4AJ11 | -60 | 8.0 | 0.17 | 0.13 | 1400 | O |
| | | 4AK26 | 60 | 8.0 | 0.075 | 0.06 | 1400 | O |

| Package | Type No. | Ratings | | Characteristics | | | Status |
|---------|------------------|-------------------------|-----------------------|------------------------------|-----------------|------------------|--------|
| | | V _{DSS} (V) | I _D (A) | R _{DS} (ON) (Ω) max | | Ciss (pF) typ | |
| | | | | 4 V | 10 V (2.5 V) | | |
| SP-12 | 4AM16 (Nch/Pch) | 60/ -60 | 8.0/ -8.0 | 0.24/ 0.27 | 0.17/ 0.2 | 400/ 850 | * |
| | 6AM11 (Nch/Pch) | 60/ -60 | 5.0/ -5.0 | 0.24/ 0.27 | 0.17/ 0.2 | 400/ 900 | O |
| SP-12TA | 4AK23 | 100 | 5.0 | 0.25 | 0.25 | 400 | * |
| | 4AM14 (Nch/Pch) | 60/ -60 | 8.0/ -8.0 | 0.24/ 0.27 | 0.17/ 0.2 | 400/ 900 | O |
| | 4AM15 (Nch/Pch) | 200/ -200 | 4.0/ -4.0 | -/ - | 0.5/ 0.7 | 600/ 800 | O |
| | 6AM12 (Nch/Pch) | 60/ -60 | 7.0/ -7.0 | 0.24/ 0.27 | 0.17/ 0.2 | 400/ 900 | O |
| | 6AM13 (Nch/Pch) | 60/ -60 | 10/ -10 | 0.11/ 0.18 | 0.075/ 0.12 | 860/ 1400 | O |
| | 6AM14 (Nch/Pch)▼ | 60/ -60 | 7.0/ -7.0 | 0.2/ 0.16 | (0.5)/ (0.3) | 500/ 1450 | O |
| | 6AM15 (Nch/Pch) | 60/ -60 | 10/ -10 | 0.115/ 0.165 | 0.06/ 0.105 | 500/ 850 | O |

•Thermal FET

| Package | Type No. | Ratings | | Characteristics | | | Status |
|--------------|----------------|-------------------------|-----------------------|------------------------------|-------|-----------------------------|--------|
| | | V _{DSS} (V) | I _D (A) | R _{DS} (ON) (Ω) max | | T _{SD} (°C) typ | |
| | | | | 4 V (5 V) | 10 V | | |
| TO-220 AB | HAF1001 | -60 | -15 | 0.13 | 0.09 | 175 | O |
| | HAF2001 | 60 | 20 | 0.065 | 0.043 | 175 | O |
| | HAF2014 | 60 | 40 | 0.033 | 0.02 | 175 | O |
| TO-220 FM | HAF2002 | 60 | 20 | 0.065 | 0.043 | 175 | O |
| | HAF2005 | 60 | 40 | 0.033 | 0.02 | 175 | O |
| | HAF2008 | 60 | 20 | 0.065 | 0.044 | 175 | SPL |
| LDBPAK | HAF1002(L)/(S) | -60 | -15 | 0.13 | 0.09 | 175 | O |
| | HAF1009(L)/(S) | -60 | -40 | 0.045 | 0.027 | 175 | SPL |

| Package | Type No. | Ratings | | Characteristics | | | Status |
|---------|----------------|-------------------------|-----------------------|------------------------------|-------|-----------------------------|--------|
| | | V _{DSS} (V) | I _D (A) | R _{DS} (ON) (Ω) max | | T _{SD} (°C) typ | |
| | | | | 4 V (5 V) | 10 V | | |
| LDBPAK | HAF2011(L)/(S) | 60 | 40 | 0.033 | 0.02 | 175 | O |
| | HAF2012(L)/(S) | 60 | 20 | 0.065 | 0.043 | 175 | O |
| | HAF2017(L)/(S) | 60 | 20 | 0.065 | 0.043 | 175 | SPL |
| | HAF2021(L)/(S) | 60 | 50 | 0.015 | 0.012 | 175 | O |
| DPAK | HAF1004(L)/(S) | -60 | -5 | 0.34 | 0.2 | 175 | SPL |
| | HAF2007(L)/(S) | 60 | 5 | 0.12 | 0.075 | 175 | O |
| SOP-8 | HAF2015RJ | 60 | 2 | (0.2) | 0.16 | 175 | SPL |

IGBT

•General Switching

| Package | Type No. | Ratings | | Characteristics | | Status |
|--------------|----------|------------------------|-----------------------|----------------------------------|----------------------------|--------|
| | | V _{CE} (V) | I _C (A) | V _{CE} (sat) (V) typ | t _r (μs) typ | |
| TO-220 AB | 2SH11 | 600 | 10 | 2.6 | 0.3 | * |
| | 2SH12 | 600 | 15 | 2.6 | 0.3 | * |
| | 2SH13 | 600 | 20 | 2.6 | 0.3 | * |
| | 2SH17 | 600 | 12 | 2.0 | 2.0 | * |
| | 2SH18 | 600 | 18 | 2.0 | 2.0 | * |
| | 2SH19 | 600 | 24 | 2.0 | 2.0 | * |
| | 2SH26 | 600 | 10 | 2.1 | 0.3 | Δ |
| | 2SH27 | 600 | 15 | 2.1 | 0.3 | Δ |
| | 2SH28 | 600 | 20 | 2.1 | 0.3 | Δ |
| | 2SH29 | 600 | 30 | 2.1 | 0.3 | Δ |

| Package | Type No. | Ratings | | Characteristics | | Status |
|---------|----------------|------------------------|-----------------------|----------------------------------|----------------------------|--------|
| | | V _{CE} (V) | I _C (A) | V _{CE} (sat) (V) typ | t _r (μs) typ | |
| LDBPAK | GN2550V4 LD/LS | 250 | 50 | 1.6 | 0.12 | SPL |
| | GN6020V4 LD/LS | 600 | 20 | 2.1 | 0.1 | O |
| | GN6030V4 LD/LS | 600 | 30 | 2.1 | 0.1 | O |
| TO-3P | 2SH14 | 600 | 30 | 2.6 | 0.3 | Δ |
| | 2SH15 | 600 | 50 | 2.6 | 0.3 | Δ |
| | 2SH20 | 600 | 36 | 2.0 | 2.0 | Δ |
| | 2SH21 | 600 | 50 | 2.0 | 2.0 | * |
| | 2SH30 | 600 | 50 | 2.1 | 0.3 | Δ |
| | 2SH31 | 600 | 75 | 2.1 | 0.3 | Δ |
| TO-3PL | 2SH16 | 600 | 75 | 2.6 | 0.3 | O |
| | 2SH22 | 600 | 75 | 2.0 | 2.0 | * |

RF Power Modules

•High Frequency Amplification

| Part No. | Package | Main Characteristics | | | | Status |
|----------|---------|--------------------------------------------|-----------|------------------|---------|--------|
| | | f (MHz) | Pin (dBm) | Pout Min (dBm) | VDD (V) | |
| PF08122B | RF-K-8 | 880 to 915 1710 to 1785 | 0 | 35 32.5 | 3.5 | O |
| PF08123B | RF-K-8 | 880 to 915 1710 to 1785 1850 to 1910 | 0 | 35 32.5 32 | 3.5 | O |

Note: O: Mass Production
 SPL: Samples available
 Δ: Can be mass produced (Delivery time: 3 months later)
 *: Provided to the limited customers

Standard Taping Specifications

•Packing Unit

| Package | Name Note) | Packing Unit |
|------------------------------------------------------------------|------------------------|----------------|
| TO-92 TO-92 MOD SPAK | Type No. Grade TZ | 2500 Pcs/Box |
| MPAK MPAK-4 CMPAK CMPAK-4 CMPAK-6 MPAK-5 SMPAK | Type No. Marking TL/TR | 3000 Pcs/Reel |
| | Type No. Marking UL/UR | 12000 Pcs/Reel |
| MFPAK | Type No. Marking TL/TR | 9000 Pcs/Reel |
| SMFPAK-6 | Type No. Marking TL/TR | 5000 Pcs/Reel |
| EMFPAK-6 | Type No. Marking TL/TR | 5000 Pcs/Reel |
| MPAK-5 MPAK-6 (High frequency linear IC) | Type No. Marking EL | 3000 Pcs/Reel |
| TSOP-6 CMFPAK-6 | Type No. EL | 3000 Pcs/Reel |

| Package | Name Note) | Packing Unit |
|----------------------------------------|------------------------|---------------|
| TSSOP-14 (High frequency linear IC) | Type No. EL | 1000 Pcs/Reel |
| FP-8DA (JEDEC,SOP-8) | Type No. EL | 2500 Pcs/Reel |
| LFPAK | Type No. EL | 2500 Pcs/Reel |
| TTP-8D (TSSOP-8) | Type No. EL | 3000 Pcs/Reel |
| DPAK S | Type No. TL/TR | 3000 Pcs/Reel |
| LDPAK S | Type No. TL/TR | 1000 Pcs/Reel |
| UPAK | Type No. Marking TL/TR | 1000 Pcs/Reel |
| | Type No. Marking UL/UR | 4000 Pcs/Reel |
| RP-8P | Type No. Marking TB | 1000 Pcs/Reel |
| | Type No. Marking UB | 4000 Pcs/Reel |

Note: Lead (Pb) free: + "-E"

Discrete Semiconductor Data Book

•Printing

| | Document Name | Publication Date | Document No. |
|---------|----------------------------------|------------------|--------------|
| English | Hitachi Power MOS FET No.1 | 2001.3 | ADE-408-002G |
| | Hitachi Power MOS FET No.2 | 2001.3 | ADE-408-008G |
| | Hitachi Power MOS FET No.3 | 2001.3 | ADE-408-009G |
| | Hitachi Small Signal Transistor | 2001.3 | ADE-408-004E |
| | Hitachi Bipolar Power Transistor | 2000.9 | ADE-408-005C |
| | Hitachi RF Power Module | 2002.9 | ADE-408-007D |

Package

| | | | | | | | | |
|-----------------------|-------------------------|---------------------------|---------------------------|----------------------|-----------|-------------------------|------------------------|----------------------------|
| SPAK (JEITA:SC-72) | TO-92 (JEITA:SC-43A) | TO-92MOD (JEITA:SC-51) | EMFPAK-6 | MFPAK (1408 flat) | SMFPAK-6 | SMPAK (JEITA:SC-75A) | CMPAK (JEITA:SC-70) | CMPAK-4 (JEITA:SC-82AB) |
| | | | | | | | | |
| CMFPAK-6 | CMPAK-6 | MPAK (JEITA:SC-59A) | MPAK-4 (JEITA:SC-61AA) | MPAK-5 | MPAK-6 | TSOP-6 | MSP-18 | |
| | | | | | | | | |
| TSSOP-14 | TNP-16BV | UPAK (JEITA:SC-62) | RP8P | DPAK (L) | DPAK (S) | FP-8DA (JEDEC SOP-8) | TTP-8D (TSSOP-8) | TO-220AB |
| | | | | | | | | |
| TO-220C-FM | TO-220FM | TO-3P | TO-3PFM | TO-3PL | LDBAK-(L) | LDBAK-(S) | LDBAK | |
| | | | | | | | | |
| TRANSISTOR ARRAY | | | RF POWER TRANSISTER | | | | | |
| SP-10 | SP-12 | SP-12TA | RFPK-F | RFPK-G | | | | |
| | | | | | | | | |
| RF POWER MODULE | | | | | | | | |
| RF-K | RF-K-4 | RF-K2 | RF-K-8 | RF-K1 | RF-K1-10 | RF-O | RF-O-12 | |
| | | | | | | | | |

Note: These packages are not full size.

Surface Mount Type Marking

•MPAK

| Type No. | Marking |
|-----------|--------------------|
| 2SA1052 | MB, MC, MD |
| 2SA1121 | SB, SC, SD |
| 2SA1122 | CC, CD, CE |
| 2SA1171 | PD, PE |
| 2SA1484 | IRD, IRE |
| 2SA1566 | JID, JIE |
| 2SA1617 | VIB, VIC |
| 2SB831 | BB, BC |
| 2SB1691 | WL- |
| 2SC2462 | LB, LC, LD |
| 2SC2463 | DD, DE, DF |
| 2SC2618 | RB, RC, RD |
| 2SC2619 | FA, FB, FC |
| 2SC2620 | QB, QC |
| 2SC2732 | EC |
| 2SC2734 | GC |
| 2SC2735 | JC |
| 2SC2736 | TC |
| 2SC2776 | VA, VB, VC |
| 2SC3127 | ID- |
| 2SC3513 | IS- |
| 2SC3793 | IP- |
| 2SC4050 | KID, KIE |
| 2SC4196 | QI- |
| 2SC4197 | TI- |
| 2SC4366 | ZI- |
| 2SC4591 | XM- |
| 2SC4680 | XU- |
| 2SC4702 | XV- |
| 2SC4964 | YV- |
| 2SC5049 | YA- |
| 2SC5050 | YZ- |
| 2SC5218 | YK- |
| 2SC5772 | FR- |
| 2SC5773 | JR- |
| 2SC5890 | FS- |
| 2SD1101 | AB, AC |
| 2SD1306 | ND, NE |
| 2SD2655 | WM- |
| 2SJ399 | ZF- |
| 2SJ451 | ZK- |
| 2SJ452 | ZM- |
| 2SJ486 | ZU- |
| 2SJ574 | BP |
| 2SJ575 | AP |
| 2SK217 | ZC, ZD, ZE |
| 2SK360 | IGD, IGE, IGF |
| 2SK1070 | PIB, PIC, PID, PIE |
| 2SK2373 | ZE- |
| 2SK2569 | ZN- |
| 2SK2570 | ZL- |
| 2SK2802 | ZV- |
| 2SK2980 | ZZ- |
| 2SK3000 | ZY- |
| 2SK3287 | AN |
| 2SK3288 | EN |
| 2SK3290 | BN |
| BRA114EMP | EG |
| BRA123EMP | JG |
| BRA124EMP | CG |
| BRA143EMP | GG |
| BRA144EMP | AG |
| BRC114EMP | FG |
| BRC123EMP | KG |
| BRC124EMP | DG |
| BRC143EMP | HG |
| BRC144EMP | BG |

•MPAK-4

| Type No. | Marking |
|----------|----------|
| 2SC3957 | GIA, GIB |
| 2SC4926 | YD- |
| 2SC5080 | ZD- |
| 2SC5545 | ZS- |
| 3SK295 | ZQ- |
| 3SK297 | ZP- |
| 3SK300 | ZR- |
| 3SK319 | YB- |
| BB101M | AU- |
| BB102M | BU- |
| BB301M | AW- |
| BB302M | BW- |
| BB304M | DW- |
| BB305M | EW- |
| BB501M | AS- |
| BB502M | BS- |
| BB503M | CS- |
| BB504M | DS- |
| BIC702M | BZ- |
| BIC703M | CZ- |

| Type No. | Marking |
|----------|--------------------|
| HA22022 | GDA (A: Date code) |
| HA22033 | GEA (A: Date code) |

| Type No. | Marking |
|----------|---------|
| HA22040 | GH |

| Type No. | Marking |
|-----------|---------|
| 2SC5137 | YA- |
| 2SC5139 | YZ- |
| 2SC5247 | ZD- |
| 2SC5629 | XZ- |
| 2SJ587 | DP |
| 2SK3349 | DN |
| H5N0301SM | GN |
| H5P0301SM | GP |

•UPAK

| Type No. | Marking |
|----------|------------|
| 2SB1001 | BH, BJ |
| 2SB1002 | CH, CJ |
| 2SB1025 | DH, DJ, DK |
| 2SB1026 | DL, DM |
| 2SB1028 | EL, EM |
| 2SB1048 | BT |
| 2SC3380 | AS |
| 2SC4807 | ER |
| 2SC4988 | FR |
| 2SC5631 | JR |
| 2SD1367 | BA, BB, BC |
| 2SD1368 | CA, CB, CC |
| 2SD1418 | DA, DB, DC |
| 2SD1419 | DD, DE |

•UPAK

| Type No. | Marking |
|----------|---------|
| 2SD1421 | ED, EE |
| 2SD1470 | AT |
| 2SD1472 | CT |
| 2SD1974 | ES |
| 2SJ186 | CY |
| 2SJ244 | JY |
| 2SJ278 | MY |
| 2SJ317 | NY |
| 2SJ361 | RY |
| 2SJ484 | WY |
| 2SJ517 | YY |
| 2SJ518 | AZ |
| 2SK1334 | BY |
| 2SK1579 | DY |
| 2SK1697 | EY |
| 2SK1698 | FY |
| 2SK1764 | KY |
| 2SK1772 | HY |
| 2SK2247 | QY |
| 2SK2315 | TY |
| 2SK2788 | VY |
| 2SK2978 | ZY |
| 2SK3391 | JX |

| Type No. | Marking |
|----------|---------|
| 2SK3390 | IX |

| Type No. | Marking |
|-----------|---------------|
| 2SA2080 | MB, MC, MD |
| 2SA2081 | CC, CD, CE |
| 2SC4260 | TI- |
| 2SC4261 | QI- |
| 2SC4262 | IP- |
| 2SC4264 | GC |
| 2SC4265 | JC |
| 2SC4463 | HC |
| 2SC4537 | IS- |
| 2SC4593 | XM- |
| 2SC4784 | YA- |
| 2SC4899 | YH- |
| 2SC4901 | YK- |
| 2SC4965 | YV- |
| 2SC5051 | YZ- |
| 2SC5850 | LB, LC, LD |
| 2SC5851 | FA, FB, FC |
| 2SJ576 | AP |
| 2SJ586 | CP |
| 2SK1215 | IGD, IGE, IGF |
| 2SK3289 | AN |
| 2SK3348 | CN |
| 2SK3378 | EN |
| BRA114ECM | EG |
| BRA123ECM | JG |
| BRA124ECM | CG |
| BRA143ECM | GG |
| BRA144ECM | AG |
| BRC114ECM | FG |
| BRC123ECM | KG |
| BRC124ECM | DG |
| BRC143ECM | HG |
| BRC144ECM | BG |

•CMPAK-4

| Type No. | Marking |
|----------|---------|
| 2SC4995 | YD- |
| 2SC5081 | ZD- |
| 2SC5593 | XH- |
| 2SC5594 | XP- |
| 2SC5623 | WH- |
| 2SC5624 | VH- |
| 2SC5820 | WU- |
| 2SC5894 | WY- |
| 2SK2685 | ZT- |
| 3SK296 | ZQ- |
| 3SK298 | ZP- |
| 3SK309 | XV- |
| 3SK317 | ZR- |
| 3SK318 | YB- |
| BB101C | AU- |
| BB102C | BU- |
| BB301C | AW- |
| BB302C | BW- |
| BB304C | DW- |
| BB305C | EW- |
| BB501C | AS- |
| BB502C | BS- |
| BB503C | CS- |
| BB504C | DS- |
| BIC702C | BZ- |
| BIC703C | CZ- |

| Type No. | Marking |
|----------|---------|
| HAT1062G | 062 |
| HAT1066G | 66 |
| HAT2106G | 06 |
| HAT3016G | 16 |
| TBB1002 | BM |
| TBB1004 | DM |
| TBB1005 | EM |
| TBB1008 | HM |

| Type No. | Marking |
|-----------|---------|
| 2SC5543 | YA- |
| 2SC5544 | YZ- |
| 2SC5554 | YH- |
| 2SC5555 | ZD- |
| 2SC5628 | XZ- |
| 2SC5700 | WB- |
| 2SC5702 | ZS- |
| 2SC5757 | WE- |
| 2SC5758 | WF- |
| 2SC5812 | WG- |
| 2SC5872 | WZ- |
| 2SC5907 | WK- |
| H5N0201MF | DN |
| H5N0301MF | GN |
| H5P0201MF | DP |
| H5P0301MF | GP |

| Type No. | Marking |
|----------|---------|
| HAT1058C | 058 |
| HAT1059C | 059 |
| HAT1068C | 068 |
| HAT1069C | 069 |

| Type No. | Marking |
|----------|---------|
| HTT1115S | EK |
| HTT1213S | CK |

| Type No. | Marking |
|----------|---------|
| HTT1115E | F |
| HTT1213E | E |