

T-27-01

1 Transistors

| Applications | Type No | | Electrical Characteristics (T _a = 25°C) | | | | | | | | | | | Package | | | | | | | |
|-----------------|---------------|----------|----------------------------------------------------|---------------------|---------------------|--------------------------|---------------------|---------------------|--------------------------|----------------------|---------------------|---------------------|---------|---------------------|---------------------|---------|---------------------|----------|----------|--------|----|
| | | | Maximum Ratings | | | V _{CE(sat)} MAX | | | f _T (TYP) MIN | | | NF (TYP) MAX | | | | | | | | | |
| | NPN | PNP | V _{CEO} (V) | I _C (mA) | P _C (mW) | h _{FE} | V _{CE} (V) | I _C (mA) | I _B (mA) | f _T (MHz) | V _{CE} (V) | I _C (mA) | NF (dB) | V _{CE} (V) | I _C (mA) | f (KHz) | R _g (KΩ) | Fig | | | |
| | 2SC387SS | 2SA1504S | 50 | 150 | 150 | 70~700 | 6 | 2 | 100 | 10 | 80 | 10 | 6 | 0.1 | 1 | 10 | 10 | SOT-23 | F1 | | |
| | 2SC3201 | 2SA1269 | 120 | 100 | 200 | 200~700 | 6 | 2 | 10 | 1 | (100) | 6 | 10 | 0.1 | 1 | 10 | 10 | TO-92M | F5 | | |
| | 2SC3199 | 2SA1267 | 50 | 150 | 200 | 70~700 | 6 | 2 | 100 | 10 | 80 | 10 | 6 | 0.1 | 1 | 10 | 10 | TO-92M | F5 | | |
| | 2SC3198A | — | 40 | 150 | 300 | 70~700 | 6 | 2 | 100 | 3 | (250) | 10 | 10 | 0.1 | 1 | 10 | 10 | TO-92(C) | F3 | | |
| | 2SC3198 | 2SA1266 | 50 | 150 | 400 | 70~700 | 6 | 2 | 100 | 10 | 80 | 10 | 6 | 0.1 | 1 | 10 | 10 | TO-92(C) | F3 | | |
| | KTC100 | — | 25 | 50 | 250 | 70~700 | 6 | 2 | 10 | 1 | 50 | 6 | *-1 | - | - | - | - | TO-92(C) | F3 | | |
| | KTC9014 | KTC9015 | 50 | 150 | 625 | 60~1000 | 5 | 1 | 100 | 10 | 60 | 10 | 6 | 0.1 | 1 | 10 | 10 | TO-92(B) | F3 | | |
| General Purpose | BCW31 | BCW29 | 20 | 100 | 200 | 110~220 | 5 | 2 | 10 | 0.5 | (300) | 5 | 10 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 | | |
| | BCW32 | BCW30 | 20 | 100 | 200 | 200~450 | 5 | 2 | 10 | 0.5 | (300) | 5 | 10 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 | | |
| | BCW33 | — | 20 | 100 | 200 | 420~800 | 5 | 2 | 10 | 0.5 | (300) | 5 | 10 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 | | |
| | BCW71 | BCW69 | 45 | 100 | 200 | 110~220 | 5 | 2 | 10 | 0.5 | (300) | 5 | 10 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 | | |
| | BCW72 | BCW70 | 45 | 100 | 200 | 200~450 | 5 | 2 | 10 | 0.5 | (300) | 5 | 10 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 | | |
| | BCW81 | — | 45 | 100 | 200 | 420~800 | 5 | 2 | 10 | 0.5 | (300) | 5 | 10 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 | | |
| | BCV71 | BCW89 | 60 | 100 | 200 | 110~220 | 5 | 2 | 10 | 0.5 | (300) | 5 | 10 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 | | |
| | BCV72 | — | 60 | 100 | 200 | 200~450 | 5 | 2 | 10 | 0.5 | (300) | 5 | 10 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 | | |
| | BSS64 | — | 80 | 100 | 200 | 80(TYP) | 1 | 10 | 0.15 | 4 | 0.4 | 60 | 10 | 4 | - | - | - | SOT-23 | F1 | | |
| | — | BSS63 | 100 | 100 | 200 | 30(MIN) | 1 | 10 | 0.25 | 25 | 2.5 | 50 | 5 | 25 | - | - | - | SOT-23 | F1 | | |
| | BCX20 | — | 25 | 100 | 310 | 100~600 | 1 | 100 | 0.62 | 500 | 50 | (200) | 5 | 10 | - | - | - | SOT-23 | F1 | | |
| | BC238 | BC308 | 20 | 100 | 300 | 120~800 | 5 | 2 | 0.6 | 100 | 5 | 50 | 5 | 10 | 0.1 | 1 | 10 | TO-92(B) | F3 | | |
| | BC168 | BC258 | 20 | 100 | 300 | 120~800 | 5 | 2 | 0.6 | 100 | 5 | 150 | 5 | 10 | 0.1 | 1 | 10 | TO-92(C) | F3 | | |
| | BC167 | BC257 | 45 | 100 | 300 | 120~460 | 5 | 2 | 0.6 | 100 | 5 | 150 | 5 | 10 | 0.1 | 1 | 10 | TO-92(C) | F3 | | |
| | BC237 | BC307 | 45 | 100 | 300 | 120~460 | 5 | 2 | 0.6 | 100 | 5 | 150 | 5 | 10 | 0.1 | 1 | 10 | TO-92(B) | F3 | | |
| | Low Noise Amp | 2SC3277S | 2SA1506S | 120 | 400 | 150 | 200~700 | 6 | 2 | 10 | 1 | (100) | 6 | 1 | 3 | 6 | 0.1 | 1 | 10 | SOT-23 | F1 |
| | | 2SC3199L | 2SA1267L | 50 | 150 | 200 | 70~700 | 6 | 2 | 100 | 10 | 80 | 10 | 1 | 3 | 6 | 0.1 | 1 | 10 | TO-92M | F5 |
| 2SC3200 | | 2SA1268 | 120 | 100 | 300 | 200~700 | 6 | 2 | 10 | 1 | (100) | 6 | 1 | 2 | 6 | 0.1 | 1 | 10 | TO-92(C) | F3 | |

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| Applications | Type No | | Electrical Characteristics (Ta = 25°C) | | | | | | | | | | Package | | | | | | | | |
|---------------|----------|----------|----------------------------------------|---------------------|---------------------|-----------------|--------------------------|---------------------|---------------------|----------------------|---------------------|---------------------|---------|---------------------|---------------------|---------|---------------------|------|----|----------|----|
| | | | Maximum Ratings | | | | | (TYP) MIN | | | | | | | (TYP) MAX | | | | | | |
| | NPN | PNP | V _{CEO} (V) | I _C (mA) | P _C (mW) | h _{FE} | V _{CE(sat)} (V) | I _C (mA) | I _B (mA) | f _T (MHz) | V _{CE} (V) | I _C (mA) | NF (dB) | V _{CE} (V) | I _C (mA) | f (kHz) | R _g (KΩ) | Fig | | | |
| Low Noise Amp | 2SC3198L | 2SA1266L | 50 | 150 | 400 | 70~700 | 6 | 2 | 0.3 | 10 | 1 | 80 | 6 | *-1 | 3 | 6 | 0.1 | 1 | 10 | TO-92(C) | F3 |
| | — | BCF29 | 20 | 100 | 200 | 120~260 | 5 | 2 | 0.3 | 10 | 0.5 | (150) | 5 | 10 | 4 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 |
| | BCF32 | BCF30 | 20 | 100 | 200 | (160) | 5 | 10μA | 0.25 | 10 | 5 | (300) | 5 | 5 | 4 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 |
| | BCF33 | — | 20 | 100 | 200 | (250) | 5 | 10μA | 0.25 | 10 | 5 | (300) | 5 | 5 | 4 | 5 | 0.2 | 1MHz | 2 | SOT-23 | F1 |
| | — | BCF70 | 45 | 100 | 200 | 200~460 | 5 | 2 | 0.3 | 10 | 0.5 | (150) | 5 | 10 | 4 | 5 | 0.2 | 1 | 2 | SOT-23 | F1 |
| | BCF81 | — | 45 | 100 | 200 | (250) | 5 | 10μA | 0.25 | 10 | 5 | (300) | 5 | 5 | 4 | 5 | 0.2 | 1MHz | 2 | SOT-23 | F1 |
| | BC169 | BC259 | 20 | 50 | 300 | 180~800 | 5 | 2 | 0.2 | 10 | 0.5 | 150 | 5 | 10 | 3 | 6 | 0.1 | 1 | 10 | TO-92(C) | F3 |
| | BC239 | BC309 | 20 | 50 | 300 | 180~800 | 5 | 2 | 0.2 | 10 | 0.5 | 150 | 5 | 10 | 3 | 6 | 0.1 | 1 | 10 | TO-92(B) | F3 |
| | BC549 | BC559 | 30 | 100 | 625 | 110~800 | 5 | 2 | 0.6 | 100 | 5 | (300) | 5 | 10 | 4 | 5 | 0.2 | 1 | 10 | TO-92(B) | F3 |
| | BC550 | BC560 | 45 | 100 | 625 | 110~800 | 5 | 2 | 0.6 | 100 | 5 | (300) | 5 | 10 | - | - | - | - | - | TO-92(B) | F3 |

| Applications | Type No | | Electrical Characteristics (Ta = 25°C) | | | | | | | | | | Package | | | | | | | | |
|---------------------|----------|----------|----------------------------------------|--------------------|--------------------|-----------------|--------------------------|---------------------|---------------------|----------------------|---------------------|---------------------|---------|---------------------|---------------------|---------|---------------------|-----|----|-----------|----|
| | | | Maximum Ratings | | | | | (TYP) | | | | | | | Cob (TYP) MAX | | | | | | |
| | NPN | PNP | V _{CEO} (V) | I _C (A) | P _C (W) | h _{FE} | V _{CE(sat)} (V) | I _C (mA) | I _B (mA) | f _T (MHz) | V _{CE} (V) | I _C (mA) | NF | V _{CE} (V) | I _C (mA) | f (MHz) | V _{CB} (V) | Fig | | | |
| AF Drive and Output | 2SC3876S | 2SA1505S | 30 | 0.5 | 0.15 | 70~240 | 1 | 100 | 0.25 | 100 | 10 | 300 | 6 | 20 | (7) | 6 | 1 | 6 | 1 | SOT-23 | F1 |
| | 2SC3204 | 2SA1272 | 30 | 0.8 | 0.3 | 100~320 | 1 | 100 | 0.5 | 500 | 20 | 120 | 5 | 10 | (13) | 10 | 1 | 10 | 1 | TO-92M | F5 |
| | 2SC3202 | 2SA1270 | 30 | 0.5 | 0.5 | 70~240 | 1 | 100 | 0.25 | 100 | 10 | 300 | 6 | *-20 | (7) | 6 | 1 | 6 | 1 | TO-92(C) | F3 |
| | 2SC4372 | 2SA1660 | 150 | 0.05 | *0.8 | 70~240 | 5 | 10 | 0.5 | 10 | 1 | 120 | 30 | 10 | 5 | 10 | 1 | 5 | 10 | SOT-89 | F2 |
| | 2SC4374 | 2SA1662 | 80 | 0.4 | *1 | 70~240 | 2 | 50 | 0.4 | 200 | 20 | 100 | 10 | 10 | (10) | 10 | 1 | 10 | 1 | SOT-89 | F2 |
| | 2SC4376 | 2SA1664 | 30 | 0.8 | *1 | 100~320 | 1 | 100 | 0.5 | 500 | 20 | 120 | 5 | 10 | (13) | 10 | 1 | 10 | 1 | SOT-89 | F2 |
| | 2SC4373 | 2SA1661 | 120 | 0.8 | *1 | 80~240 | 5 | 100 | 1.0 | 500 | 50 | 120 | 5 | 100 | 30 | 10 | 1 | 30 | 10 | SOT-89 | F2 |
| | 2SC4375 | 2SA1663 | 30 | 1.5 | *1 | 100~320 | 2 | 500 | 2.0 | 1.5A | 30 | 120 | 2 | 500 | 40 | 10 | 1 | 40 | 10 | SOT-89 | F2 |
| | 2SC3227 | 2SA1274 | 80 | 0.4 | 0.8 | 70~240 | 2 | 50 | 0.4 | 200 | 20 | 100 | 10 | 10 | (10) | 10 | 1 | 10 | 1 | GO-92L | F4 |
| | 2SC4370 | 2SA1659 | 160 | 1.5 | *20 | 70~240 | 5 | 100 | 1.5 | 500 | 50 | 100 | 10 | 100 | (25) | 10 | 1 | 10 | 1 | TO-220(S) | F7 |

P_C* T_C = 25°C Pc* mounted on ceramic substrate (250mm² × 0.8t) *I_T

| Applications | Type No | | Maximum Ratings | | | | | | | | | | Electrical Characteristics (Ta = 25°C) | | | | | | | | | | Package | |
|--------------|------------------------|------------------------|-----------------|-----|------------------------|-----------------------|-----------------------|-----------------|------------------------|------------------------|------------------------|------------------------|----------------------------------------|------------------------|------------------------|-------------------------|------------------------|------------|-----|--|--|--|---------|--|
| | | | NPN | PNP | V _{CE} (V) | I _C (A) | P _C (W) | h _{FE} | V _{CE(sat)} | | MAX | | f _T (MHz) | (TYP) MIN | | C _{ob} (pF) | (TYP) MAX | | Fig | | | | | |
| | V _{CE} (V) | I _C (mA) | | | | | | | I _C (mA) | I _B (mA) | V _{CE} (V) | I _C (mA) | | V _{CE} (V) | I _C (mA) | | V _{CB} (V) | f (MHz) | | | | | | |
| | 2SC4370A | 2SA1659A | 180 | 1.5 | ≥20 | 70~240 | 5 | 100 | 1.5 | 500 | 50 | (100) | 10 | 100 | (25) | 10 | 1 | TO-220IS | F7 | | | | | |
| | 2SD2060 | 2SB1368 | 80 | 4 | ≥25 | 40~240 | 5 | 0.5A | 1.5 | 3A | 0.3A | (8.0) | 5 | 0.5A | (90) | 10 | 1 | TO-220IS | F7 | | | | | |
| | 2SD2059 | 2SB1367 | 100 | 5 | ≥30 | 40~240 | 5 | 1A | 2.0 | 4A | 0.4A | (12) | 5 | 1A | (100) | 10 | 1 | TO-220IS | F7 | | | | | |
| | 2SD1352 | 2SB989 | 80 | 4 | ≥30 | 40~240 | 5 | 0.5A | 1.5 | 3A | 0.3A | (8.0) | 5 | 0.5A | (90) | 10 | 1 | TO-220AB | F6 | | | | | |
| | KTC200 | KTA200 | 50 | 0.5 | 0.6 | 70~240 | 2 | 50 | 0.25 | 100 | 10 | (300) | 6 | *-20 | (7) | 6 | 1 | TO-92(C) | F3 | | | | | |
| | KTC2235 | KTA965 | 120 | 0.8 | 0.9 | 80~240 | 5 | 100 | 1.0 | 500 | 50 | (120) | 5 | 100 | 30 | 10 | 1 | TO-92L | F4 | | | | | |
| | KTC2238 | KTA968 | 160 | 1.5 | ≥25 | 70~240 | 5 | 100 | 1.5 | 500 | 50 | (100) | 10 | 100 | (25) | 10 | 1 | TO-220AB | F6 | | | | | |
| | KTC2238A | KTA968A | 180 | 1.5 | ≥25 | 70~240 | 5 | 100 | 1.5 | 500 | 50 | (100) | 10 | 100 | (25) | 10 | 1 | TO-220AB | F6 | | | | | |
| AF Drive | KTD525 | KTBS95 | 100 | 5 | ≥40 | 40~240 | 5 | 1A | 2.0 | 4A | 0.4A | (12) | 5 | 1A | (100) | 10 | 1 | TO-220AB | F6 | | | | | |
| and Output | KTD718 | KTBS88 | 120 | 8 | ≥80 | 55~160 | 5 | 1A | 2.5 | 5A | 0.5A | (12) | 5 | 1A | (170) | 10 | 1 | TO-3P(I) | F9 | | | | | |
| | KTC9013 | KTC9012 | 30 | 0.5 | 0.625 | 64~246 | 1 | 50 | 0.25 | 100 | 20 | 140 | 6 | *-20 | (7) | 6 | 1 | TO-92(B) | F3 | | | | | |
| | KN4400 | KN4402 | 40 | 0.6 | 0.31 | 50~150 | 1 | 50 | 0.25 | 500 | 50 | (200) | 10 | *-20 | (7) | 10 | 1 | TO-92(B) | F3 | | | | | |
| | KN4401 | KN4403 | 40 | 0.6 | 0.31 | 100~300 | 1 | 150 | 0.75 | 500 | 50 | (200) | 10 | *-20 | (7) | 10 | 1 | TO-92(B) | F3 | | | | | |
| | BCX19 | — | 45 | 0.5 | 0.31 | 100~600 | 1 | 100 | 0.62 | 500 | 50 | (200) | 5 | 10 | (6) | 10 | 1 | SOT-23 | F1 | | | | | |
| | — | BCW67 | 32 | 0.8 | 0.36 | 100~630 | 1 | 100 | 0.3 | 100 | 10 | 100 | 10 | 80 | 18 | 10 | 1 | SOT-23 | F1 | | | | | |
| | — | BCW68 | 45 | 0.8 | 0.36 | 100~630 | 1 | 100 | 0.7 | 500 | 50 | 100 | 10 | 80 | 18 | 10 | 1 | SOT-23 | F1 | | | | | |
| | BC183 | BC213 | 30 | 0.2 | 0.3 | 120~800 | 5 | 2 | 0.6 | 100 | 5 | 150 | 5 | 10 | 5 | 10 | 1 | TO-92 | F3 | | | | | |
| | BC184 | BC214 | 30 | 0.2 | 0.3 | 250~800 | 5 | 2 | 0.25 | 10 | 0.5 | 150 | 5 | 10 | 5 | 10 | 1 | TO-92 | F3 | | | | | |
| | BC182 | BC212 | 50 | 0.2 | 0.3 | 120~460 | 5 | 2 | 0.6 | 100 | 5 | 200 | 5 | 10 | 5 | 10 | 1 | TO-92 | F3 | | | | | |
| | BC548 | BC558 | 30 | 0.1 | 0.5 | 75~800 | 5 | 2 | 0.6 | 100 | 5 | (150) | 5 | 10 | 4.5 | 10 | 1 | TO-92(B) | F3 | | | | | |
| | BC547 | BC557 | 45 | 0.1 | 0.5 | 75~450 | 5 | 2 | 0.6 | 100 | 5 | (150) | 5 | 10 | 4.5 | 10 | 1 | TO-92(B) | F3 | | | | | |
| | BC546 | BC556 | 65 | 0.1 | 0.5 | 75~450 | 5 | 2 | 0.6 | 100 | 5 | (150) | 5 | 10 | 4.5 | 10 | 1 | TO-92(B) | F3 | | | | | |
| | BC338 | BC328 | 25 | 0.8 | 0.625 | 100~400 | 1 | 100 | 0.7 | 500 | 50 | (100) | 5 | 10 | (12) | 10 | 1 | TO-92(B) | F3 | | | | | |
| | BC337 | BC327 | 45 | 0.8 | 0.625 | 100~400 | 1 | 100 | 0.7 | 500 | 50 | (100) | 5 | 10 | (12) | 10 | 1 | TO-92(B) | F3 | | | | | |

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Pc*:Tc = 25°C