

Features

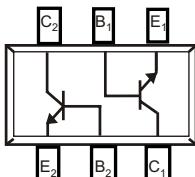
- Epitaxial Die Construction
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 833°C/W Junction to Ambient

| Parameter | Symbol | Rating | Unit |
|-----------------------------|-----------|--------|------|
| Collector-Base Voltage | V_{CBO} | 75 | V |
| Collector-Emitter Voltage | V_{CEO} | 40 | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_C | 0.6 | A |
| Collector Power Dissipation | P_C | 150 | mW |

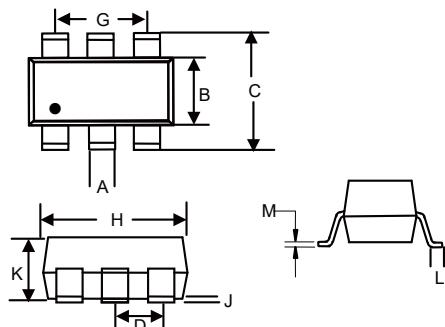
Internal Structure



Marking: K1P

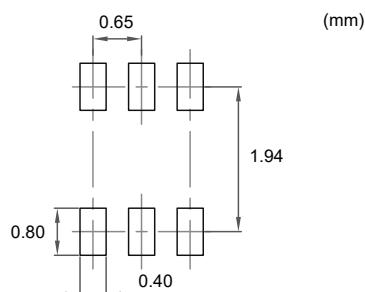
NPN Plastic Encapsulate Transistors

SOT-363



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.006 | 0.014 | 0.15 | 0.35 | |
| B | 0.045 | 0.053 | 1.15 | 1.35 | |
| C | 0.079 | 0.096 | 2.00 | 2.45 | |
| D | 0.026 | | 0.65 | | TYP. |
| G | 0.047 | 0.055 | 1.20 | 1.40 | |
| H | 0.071 | 0.087 | 1.80 | 2.20 | |
| J | ----- | 0.004 | ----- | 0.10 | |
| K | 0.031 | 0.043 | 0.80 | 1.10 | |
| L | 0.010 | 0.018 | 0.26 | 0.46 | |
| M | 0.003 | 0.006 | 0.08 | 0.15 | |

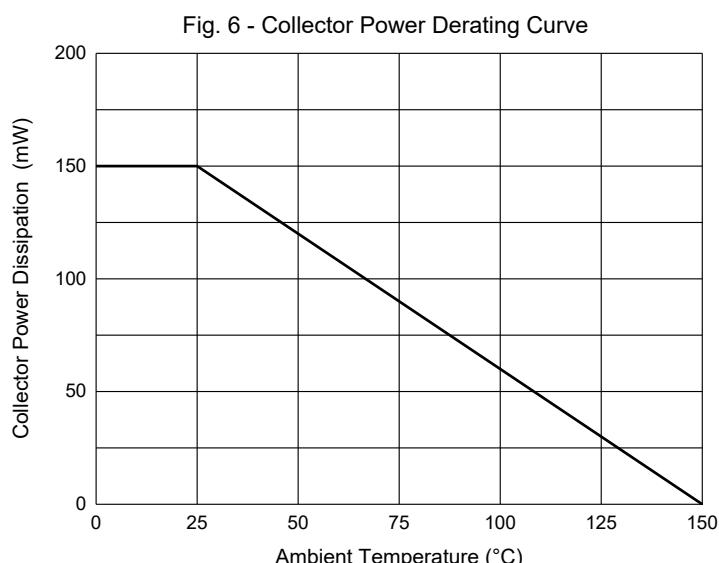
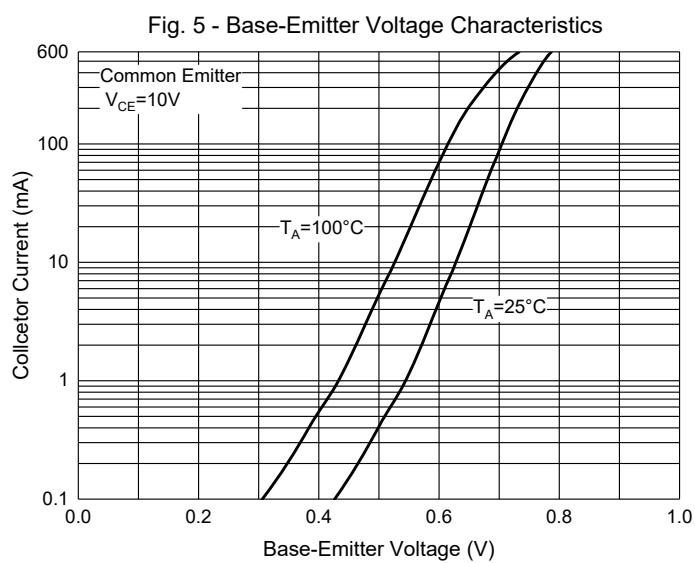
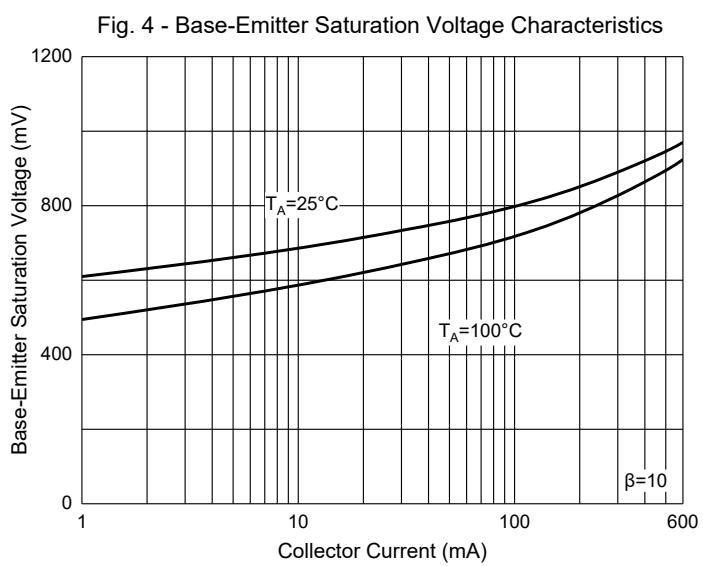
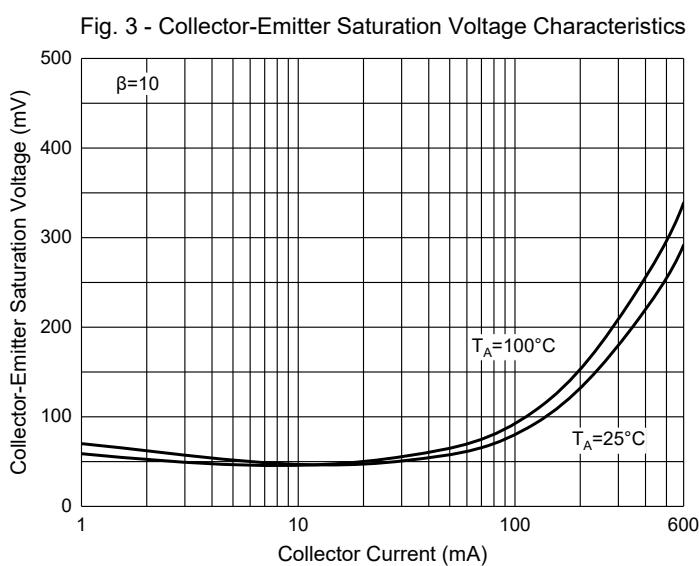
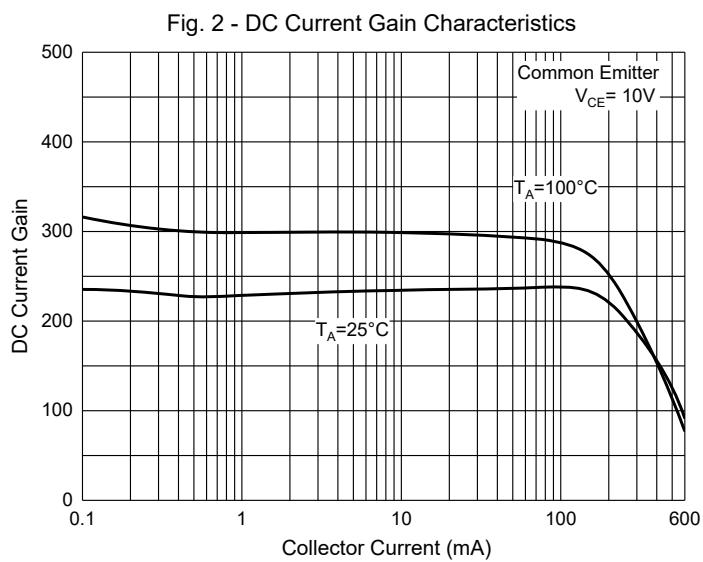
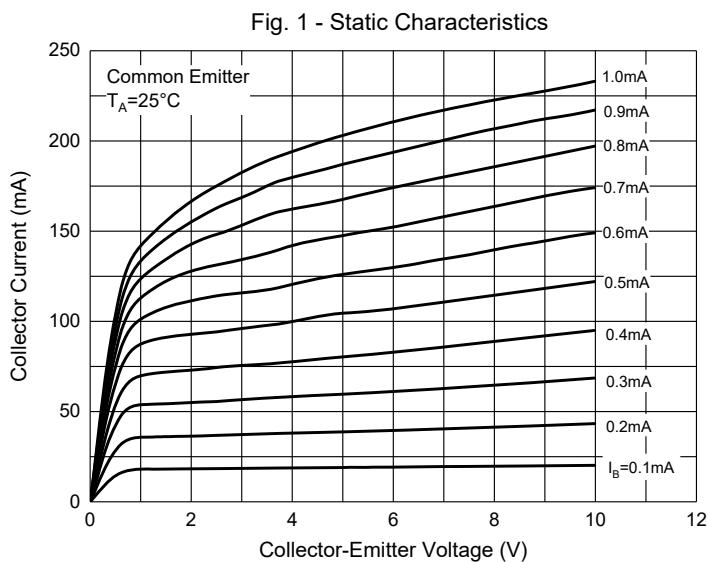
Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter | Symbol | Min | Typ | Max | Units | Conditions |
|--------------------------------------|---------------|-----|-----|-----|-------|--|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 75 | | | V | $I_C=10\mu A, I_E=0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 40 | | | V | $I_C=10mA, I_B=0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 6 | | | V | $I_E=10\mu A, I_C=0$ |
| Collector Cutoff Current | I_{CBO} | | | 10 | nA | $V_{CB}=60V, I_E=0$ |
| Collector Cutoff Current | I_{CEX} | | | 10 | nA | $V_{CE}=60V, V_{EB(OFF)}=3V$ |
| Emiiter Cutoff Current | I_{EBO} | | | 10 | nA | $V_{EB}=3V, I_C=0$ |
| Base Cutoff Current | I_{BL} | | | 20 | nA | $V_{CE}=60V, V_{EB(OFF)}=3V$ |
| DC Current Gain | h_{FE1} | 35 | | | | $V_{CE}=10V, I_C=0.1mA$ |
| | h_{FE2} | 50 | | | | $V_{CE}=10V, I_C=1mA$ |
| | h_{FE3} | 75 | | | | $V_{CE}=10V, I_C=10mA$ |
| | h_{FE4} | 100 | | 300 | | $V_{CE}=10V, I_C=150mA$ |
| | h_{FE5} | 35 | | | | $V_{CE}=1V, I_C=150mA$ |
| | h_{FE6} | 40 | | | | $V_{CE}=10V, I_C=500mA$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | 0.3 | | V | $I_C=150mA, I_B=15mA$ |
| | | | 1.0 | | V | $I_C=500mA, I_B=50mA$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | 0.6 | | 1.2 | V | $I_C=150mA, I_B=15mA$ |
| | | | | 2.0 | V | $I_C=500mA, I_B=50mA$ |
| Transition Frequency | f_T | 300 | | | MHz | $V_{CE}=20V, I_C=20mA, f=100MHz$ |
| Output Capacitance | C_{ob} | | | 8 | pF | $V_{CB}=10V, I_E=0, f=1MHz$ |
| Noise Figure | NF | | | 4 | dB | $V_{CE}=10V, I_C=100\mu A, f=1kHz$ $R_S=1k\Omega, BW=200Hz$ |
| Delay Time | t_d | | | 10 | ns | $V_{CC}=30V, V_{BE(OFF)}=-0.5V$ |
| Rise Time | t_r | | | 25 | ns | $I_C=150mA, I_{B1}=15mA$ |
| Storage Time | t_s | | | 225 | ns | $V_{CC}=30V, I_C=150mA$ |
| Fall Time | t_f | | | 60 | ns | $I_{B1}=I_{B2}=15mA$ |

Curve Characteristics



Ordering Information

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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