

Features

- Low Collector-Emitter Saturation Voltage
- High DC Current Gain
- Monolithic Construction with Built-in Base-Emitter Shunt Resistors
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

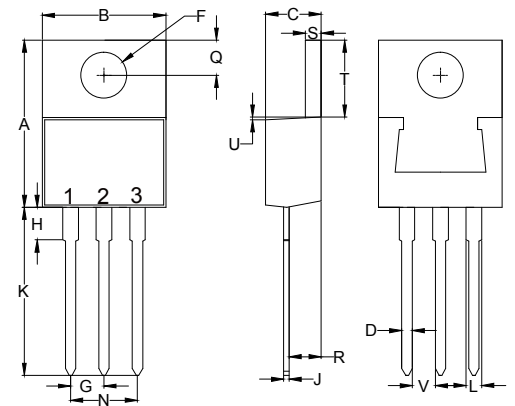
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 1.56°C/W Junction to Case

| Parameter | Symbol | Rating | Unit |
|--------------------------------------|-----------|--------|------|
| Collector-Base Voltage | TIP105 | -60 | V |
| | TIP106 | -80 | |
| | TIP107 | -100 | |
| Collector-Emitter Voltage | TIP105 | -60 | V |
| | TIP106 | -80 | |
| | TIP107 | -100 | |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Continuous Collector Current | I_C | -8 | A |
| Peak Collector Current | I_{CM} | -15 | A |
| Base Current | I_B | -1 | A |
| Power Dissipation @ $T_C=25^\circ C$ | P_D | 80 | W |

Note: 1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.

**PNP Plastic
Medium-Power
Silicon Transistors**

TO-220



1.BASE
2.COLLECTOR
3.EMITTER

| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|-------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.560 | 0.625 | 14.22 | 15.88 | |
| B | 0.380 | 0.420 | 9.65 | 10.67 | |
| C | 0.140 | 0.190 | 3.56 | 4.82 | |
| D | 0.020 | 0.045 | 0.51 | 1.14 | |
| F | 0.139 | 0.161 | 3.53 | 4.09 | Φ |
| G | 0.090 | 0.110 | 2.29 | 2.79 | |
| H | ---- | 0.250 | ---- | 6.35 | |
| J | 0.012 | 0.025 | 0.30 | 0.64 | |
| K | 0.500 | 0.580 | 12.70 | 14.73 | |
| L | 0.045 | 0.060 | 1.14 | 1.52 | |
| N | 0.190 | 0.210 | 4.83 | 5.33 | |
| Q | 0.100 | 0.135 | 2.54 | 3.43 | |
| R | 0.080 | 0.115 | 2.04 | 2.92 | |
| S | 0.045 | 0.055 | 1.14 | 1.39 | |
| T | 0.230 | 0.270 | 5.84 | 6.86 | |
| U | ---- | 0.050 | ---- | 1.27 | |
| V | 0.045 | ---- | 1.15 | ---- | |

Electrical Characteristics @ $T_A=25^\circ\text{C}$ Unless Otherwise Specified

| Parameter | | Symbol | Min | Typ | Max | Units | Conditions |
|--------------------------------------|---------------|---------------|------|-----|-------|---------------|--|
| Collector-Emitter Breakdown Voltage | TIP105 | $V_{(BR)CEO}$ | -60 | | | V | $I_C=-30\text{mA}, I_B=0$ |
| | TIP106 | | -80 | | | | |
| | TIP107 | | -100 | | | | |
| Collector Cutoff Current | TIP105 | I_{CBO} | | | -50 | μA | $V_{CB}=-60\text{V}, I_E=0$ |
| | TIP106 | | | | -50 | μA | $V_{CB}=-80\text{V}, I_E=0$ |
| | TIP107 | | | | -50 | μA | $V_{CB}=-100\text{V}, I_E=0$ |
| Collector Cutoff Current | TIP105 | I_{CEO} | | | -50 | μA | $V_{CE}=-30\text{V}, I_B=0$ |
| | TIP106 | | | | -50 | μA | $V_{CE}=-40\text{V}, I_B=0$ |
| | TIP107 | | | | -50 | μA | $V_{CE}=-50\text{V}, I_B=0$ |
| Emitter Cutoff Current | | I_{EBO} | | | -8 | mA | $V_{EB}=-5\text{V}, I_C=0$ |
| DC Current Gain | $h_{FE(1)}$ | | 1000 | | 20000 | | $V_{CE}=-4\text{V}, I_C=-3\text{A}$ |
| | $h_{FE(2)}$ | | 200 | | | | $V_{CE}=-4\text{V}, I_C=-8\text{A}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | | | -2.0 | V | $I_C=-3\text{A}, I_B=-6\text{mA}$ |
| | $V_{CE(sat)}$ | | | | -2.5 | V | $I_C=-8\text{A}, I_B=-80\text{mA}$ |
| Base-Emitter On Voltage | | $V_{BE(on)}$ | | | -2.8 | V | $V_{CE}=-4\text{V}, I_C=-8\text{A}$ |
| Small-Signal Current Gain | | h_{fe} | 4 | | | | $I_C=-3.0\text{A}, V_{CE}=-4.0\text{V}, f=1.0\text{MHz}$ |
| Output Capacitance | | C_{ob} | | | 300 | pF | $V_{CB}=-10\text{V}, I_E=0, f=0.1\text{MHz}$ |

Ordering Information

| Device | Packing |
|----------------|--|
| Part Number-BP | Bulk:50pcs/Tube, 1Kpcs/Box, 5Kpcs/Carton |

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

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