

Features

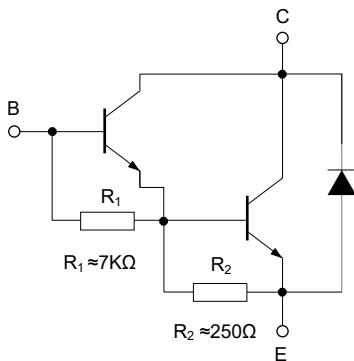
- High DC Current Gain
- Built-in a Damper Diode at E-C
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

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: 83°C/W Junction to Ambient

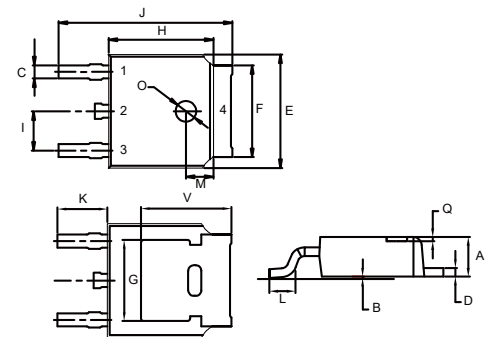
| Parameter | Symbol | Rating | Unit |
|------------------------------|-----------|--------|------|
| Collector-Base Voltage | V_{CBO} | 100 | V |
| Collector-Emitter Voltage | V_{CEO} | 100 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Continuous Collector Current | I_C | 8 | A |
| Power Dissipation | P_D | 1.5 | W |

Internal Schematic Diagram



**Silicon
NPN epitaxial planer
Transistors**

DPAK(TO-252)



1.BASE
2,4.COLLECTOR
3.EMITTER

| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|------|-------|------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.087 | 0.094 | 2.20 | 2.40 | |
| B | 0.000 | 0.005 | 0.00 | 0.13 | |
| C | 0.026 | 0.034 | 0.66 | 0.86 | |
| D | 0.018 | 0.023 | 0.46 | 0.58 | |
| E | 0.256 | 0.264 | 6.50 | 6.70 | |
| F | 0.201 | 0.215 | 5.10 | 5.46 | |
| G | 0.190 | | 4.83 | | TYP. |
| H | 0.236 | 0.244 | 6.00 | 6.20 | |
| I | 0.086 | 0.094 | 2.18 | 2.39 | |
| J | 0.386 | 0.409 | 9.80 | 10.40 | |
| K | 0.114 | | 2.90 | | TYP. |
| L | 0.055 | 0.067 | 1.40 | 1.70 | |
| M | 0.063 | | 1.60 | | TYP. |
| O | 0.043 | 0.051 | 1.10 | 1.30 | |
| Q | 0.000 | 0.012 | 0.00 | 0.30 | |
| V | 0.211 | | 5.35 | | TYP. |

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

| Parameter | Symbol | Min | Typ | Max | Units | Conditions |
|--------------------------------------|---------------|------|-----|-------|---------------|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 100 | | | V | $I_C=1\text{mA}, I_E=0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 100 | | | V | $I_C=30\text{mA}, I_B=0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | | | V | $I_E=3\text{mA}, I_C=0$ |
| Collector Cutoff Current | I_{CBO} | | | 10 | μA | $V_{CB}=100\text{V}, I_E=0$ |
| Collector Cutoff Current | I_{CEO} | | | 10 | μA | $V_{CE}=50\text{V}, I_B=0$ |
| Emitter Cutoff Current | I_{EBO} | | | 2 | mA | $V_{EB}=5\text{V}, I_C=0$ |
| DC Current Gain | $h_{FE(1)}$ | 1000 | | 12000 | | $V_{CE}=4\text{V}, I_C=4\text{A}$ |
| | $h_{FE(2)}$ | 100 | | | | $V_{CE}=4\text{V}, I_C=8\text{A}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | | 2.0 | V | $I_C=4\text{A}, I_B=16\text{mA}$ |
| | | | | 4.0 | V | $I_C=8\text{A}, I_B=80\text{mA}$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | | 4.5 | V | $I_C=8\text{A}, I_B=80\text{mA}$ |
| Base-Emitter Voltage | V_{BE} | | | 2.8 | V | $V_{CE}=4\text{V}, I_C=4\text{A}$ |
| Output Capacitance | C_{ob} | | | 200 | pF | $V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ |

Curve Characteristics

Fig. 1 - Static Characteristics

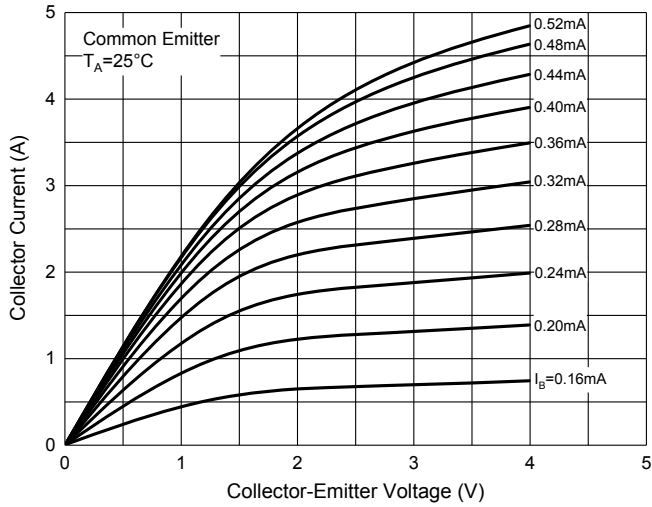


Fig. 2 - DC Current Gain Characteristics

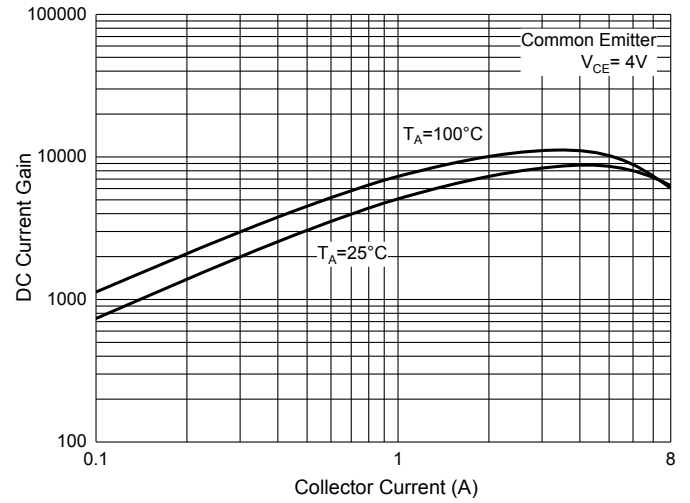


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

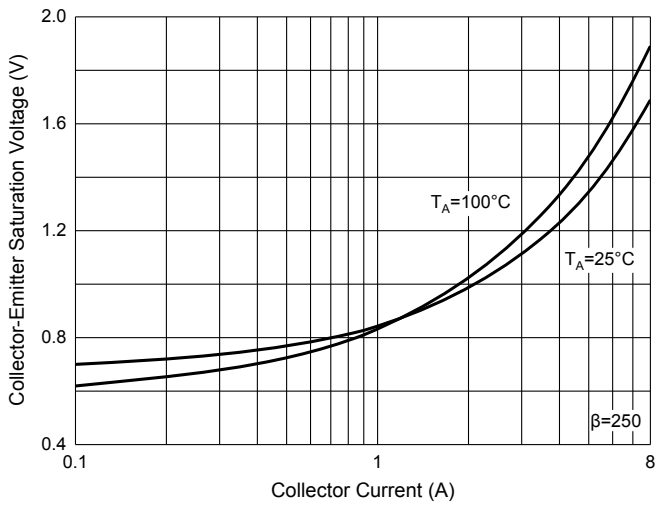


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

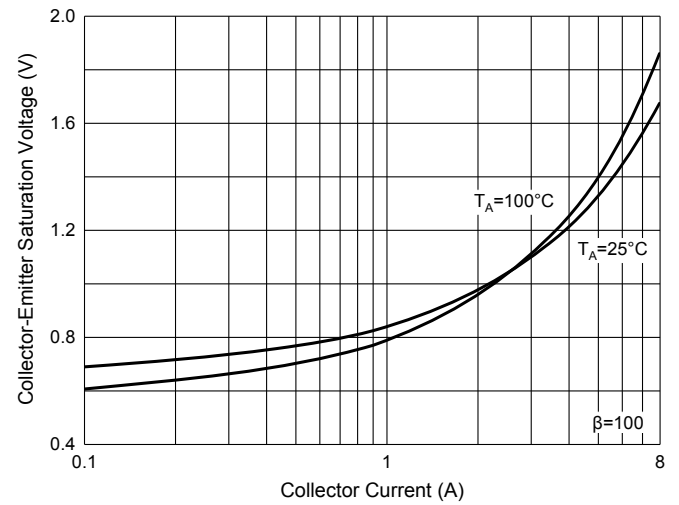


Fig. 5 - Base-Emitter Saturation Voltage Characteristics

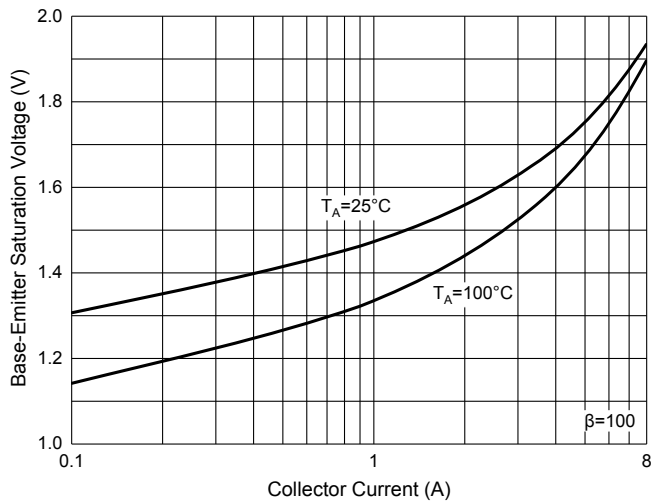
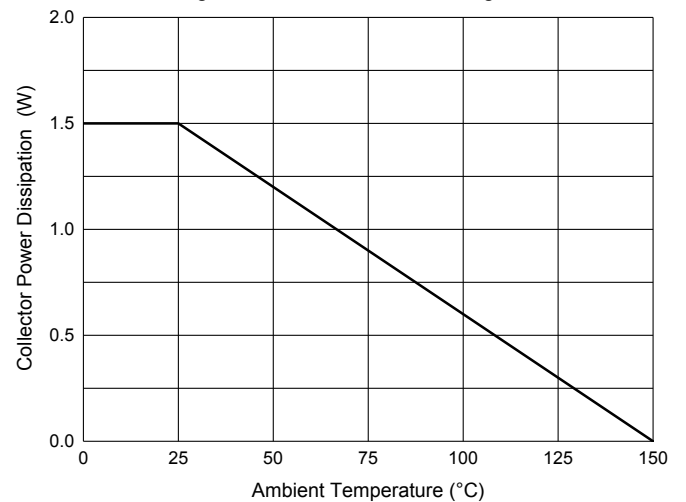


Fig. 6 - Collector Power Derating Curve



Ordering Information

| Device | Packing |
|----------------|-------------------------|
| Part Number-TP | Tape&Reel: 2.5Kpcs/Reel |

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

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