

Features

- 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)

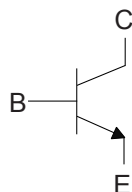
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 357°C/W Junction to Ambient

| Parameter | Symbol | Rating | Unit |
|------------------------------|-----------|--------|------|
| Collector-Base Voltage | V_{CBO} | 30 | V |
| Collector-Emitter Voltage | V_{CEO} | 25 | V |
| Emitter-Base Voltage | V_{EBO} | 3 | V |
| Continuous Collector Current | I_C | 50 | mA |
| Power Dissipation | P_D | 350 | mW |

Marking: MPSH10

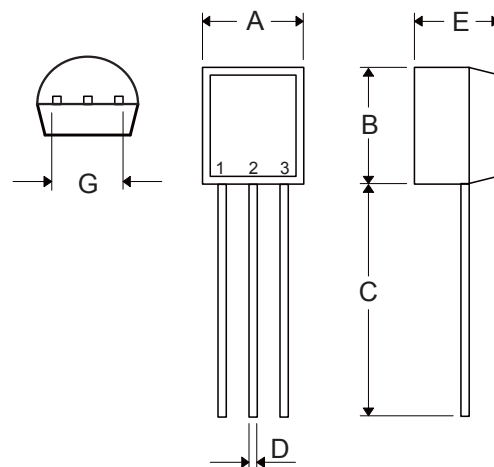
Internal Structure



1.BASE
2.EMITTER
3.COLLECTOR

NPN RF Transistor

TO-92



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|-------|-------|---------------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.169 | 0.185 | 4.30 | 4.70 | |
| B | 0.169 | 0.185 | 4.30 | 4.70 | |
| C | 0.500 | ----- | 12.70 | ----- | |
| D | 0.015 | 0.022 | 0.38 | 0.55 | |
| E | 0.130 | 0.146 | 3.30 | 3.70 | |
| G | 0.095 | 0.105 | 2.42 | 2.67 | Straight Lead |
| | 0.173 | 0.220 | 4.40 | 5.60 | Bent |

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

| Parameter | Symbol | Min | Typ | Max | Units | Conditions |
|--------------------------------------|---------------|-----|-----|------|---------------|--|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 30 | | | V | $I_C=100\mu\text{A}, I_E=0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 25 | | | V | $I_C=1\text{mA}, I_B=0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 3 | | | V | $I_E=10\mu\text{A}, I_C=0$ |
| Collector Cut-off Current | I_{CBO} | | | 0.1 | μA | $V_{CB}=25\text{V}, I_E=0$ |
| Collector Cut-off Current | I_{CEO} | | | 0.2 | μA | $V_{CE}=20\text{V}, I_B=0$ |
| Emitter Cut-off Current | I_{EBO} | | | 0.1 | μA | $V_{EB}=2\text{V}, I_C=0$ |
| DC Current Gain | h_{FE} | 60 | | 200 | | $V_{CE}=10\text{V}, I_C=4\text{mA}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | | 0.5 | V | $I_C=4\text{mA}, I_B=0.4\text{mA}$ |
| Base-Emitter Voltage | V_{BE} | | | 0.95 | V | $V_{CE}=10\text{V}, I_C=4\text{mA}$ |
| Transition Frequency | f_T | 650 | | | MHz | $V_{CE}=10\text{V}, I_C=4\text{mA}, f=100\text{MHz}$ |

Curve Characteristics

Fig. 1 - Static Characteristics

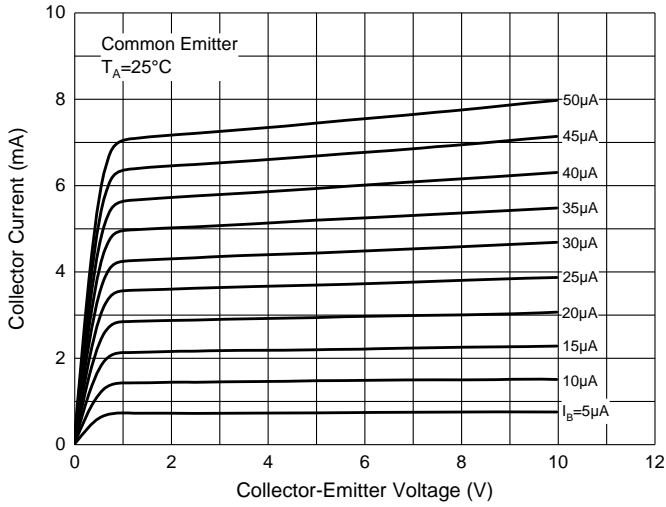


Fig. 2 - DC Current Gain Characteristics

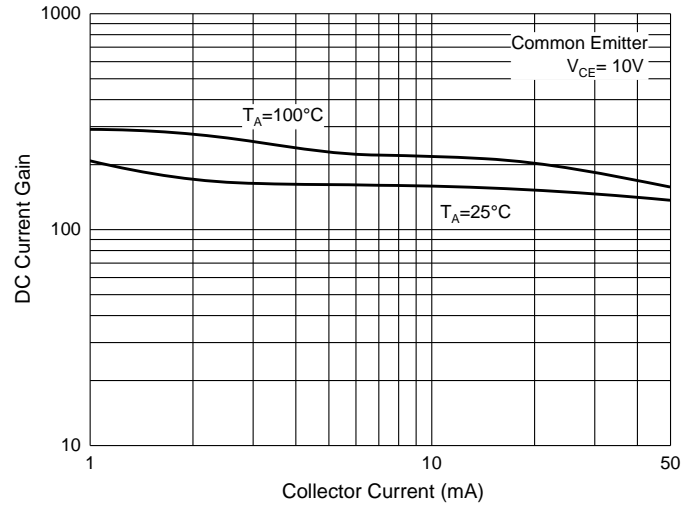


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

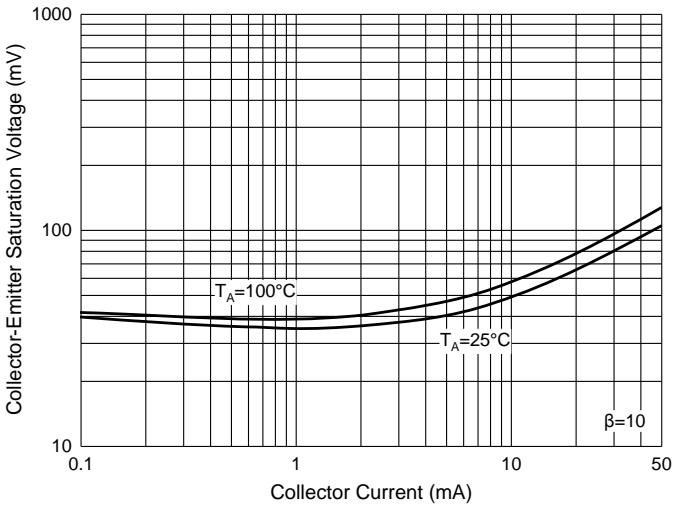


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

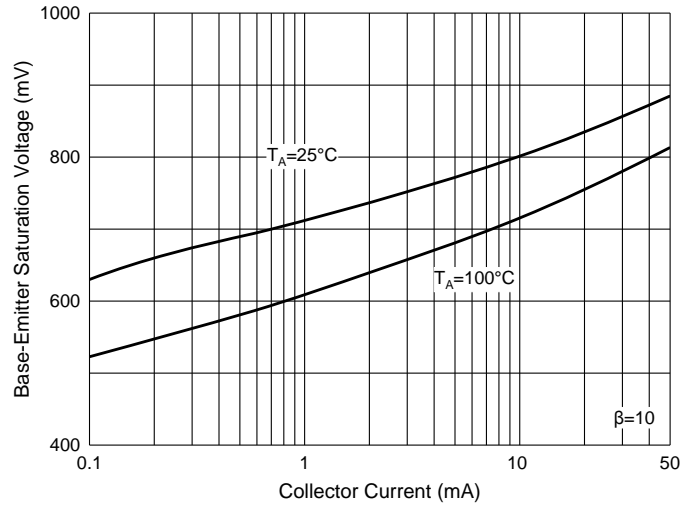


Fig. 5 - Base-Emitter Voltage Characteristics

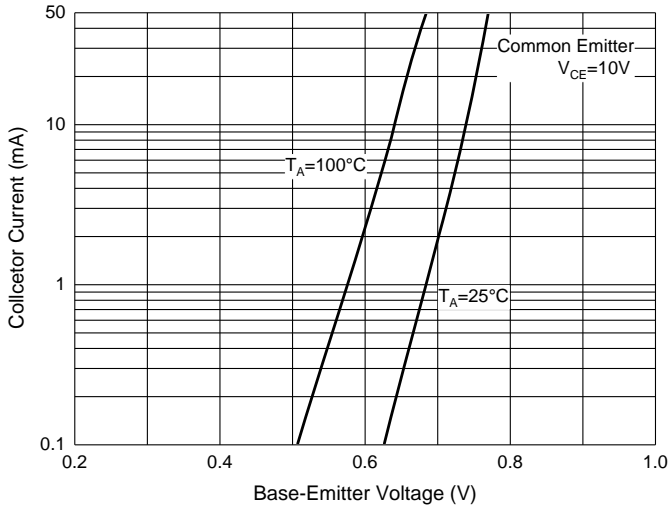
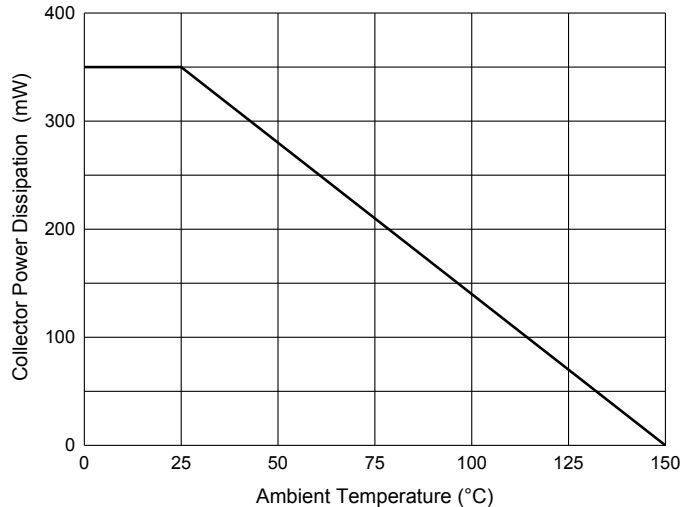


Fig. 6 - Collector Power Derating Curve



Ordering Information

| Device | Packing |
|----------------|-----------------------------|
| Part Number-AP | Ammo Packing: 20Kpcs/Carton |
| Part Number-BP | Bulk: 100Kpcs/Carton |

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

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