

Features

- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

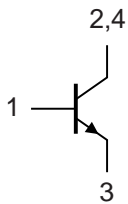
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 125°C/W Junction to Ambient

| Parameter | Symbol | Rating | Unit |
|-----------------------------|-----------|--------|------|
| Collector-Base Voltage | V_{CBO} | 300 | V |
| Collector-Emitter Voltage | V_{CEO} | 300 | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_C | 0.2 | A |
| Collector Current - Pulsed | I_{CM} | 0.5 | A |
| Collector Power Dissipation | P_C | 1 | W |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure

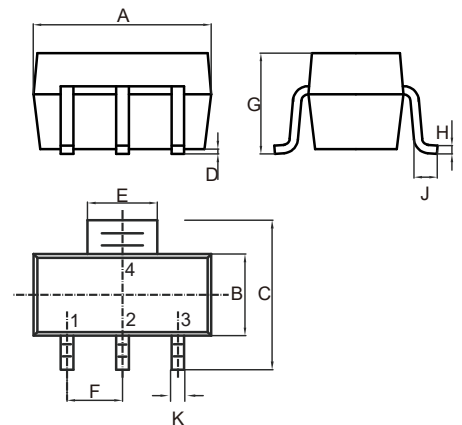


1.BASE
2,4.COLLECTOR
3.EMITTER

Marking: ZTA42

**NPN
Plastic Encapsulate
Transistors**

SOT-223



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|------|------|------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.248 | 0.264 | 6.30 | 6.70 | |
| B | 0.130 | 0.146 | 3.30 | 3.70 | |
| C | 0.264 | 0.287 | 6.70 | 7.30 | |
| D | 0.001 | 0.004 | 0.02 | 0.10 | |
| E | 0.114 | 0.122 | 2.90 | 3.10 | |
| F | 0.091 | | 2.30 | | TYP. |
| G | --- | 0.071 | --- | 1.80 | |
| H | 0.009 | 0.014 | 0.23 | 0.35 | |
| J | 0.030 | --- | 0.75 | --- | |
| K | 0.026 | 0.033 | 0.66 | 0.84 | |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter | Symbol | Min | Typ | Max | Units | Conditions |
|--------------------------------------|---------------|-----|-----|-----|-------|----------------------------------|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 300 | | | V | $I_C=100\mu A, I_E=0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 300 | | | V | $I_C=1mA, I_B=0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 6 | | | V | $I_E=100\mu A, I_C=0$ |
| Collector-Base Cutoff Current | I_{CBO} | | | 100 | nA | $V_{CB}=200V, I_E=0$ |
| Emitter-Base Cutoff Current | I_{EBO} | | | 100 | nA | $V_{EB}=4V, I_C=0$ |
| DC Current Gain | $h_{FE(1)}$ | 25 | | | | $V_{CE}=10V, I_C=1mA$ |
| | $h_{FE(2)}$ | 40 | | | | $V_{CE}=10V, I_C=10mA$ |
| | $h_{FE(3)}$ | 40 | | | | $V_{CE}=10V, I_C=30mA$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | | 0.5 | V | $I_C=20mA, I_B=2mA$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | | 0.9 | V | $I_C=20mA, I_B=2mA$ |
| Transition Frequency | f_T | 50 | | | MHz | $V_{CE}=20V, I_C=10mA, f=100MHz$ |
| Collector Output Capacitance | C_{ob} | | | 3 | pF | $V_{CB}=20V, I_E=0, f=1MHz$ |

Curve Characteristics

Fig. 1 - Static Characteristics

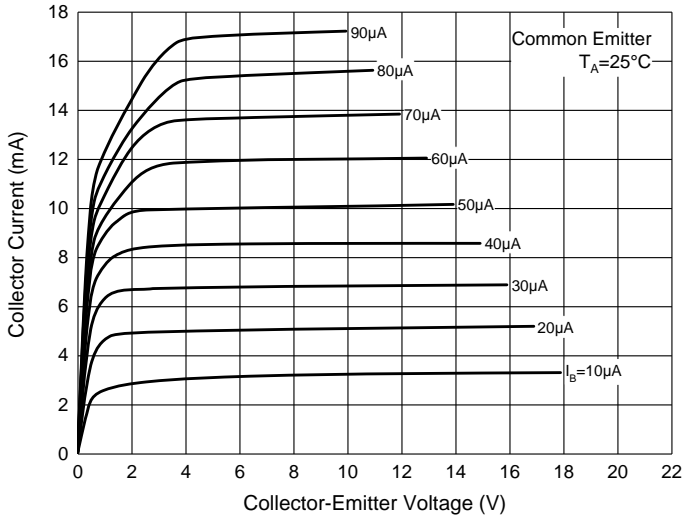


Fig. 2 - DC Current Gain Characteristics

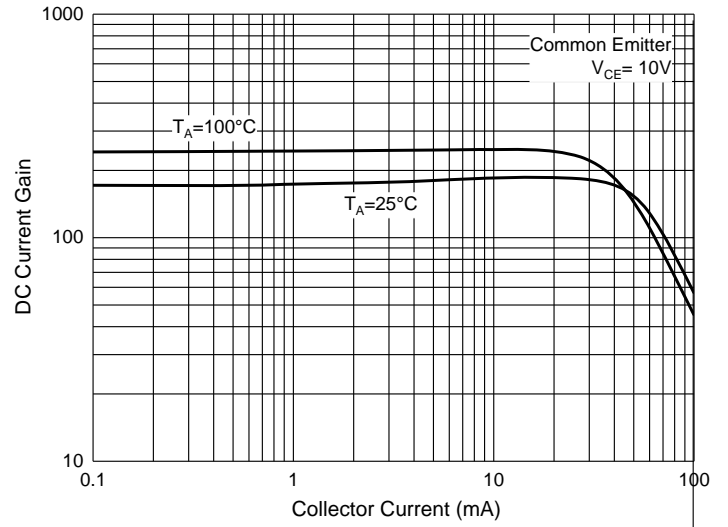


Fig. H - Collector-Emitter Saturation Voltage Characteristics

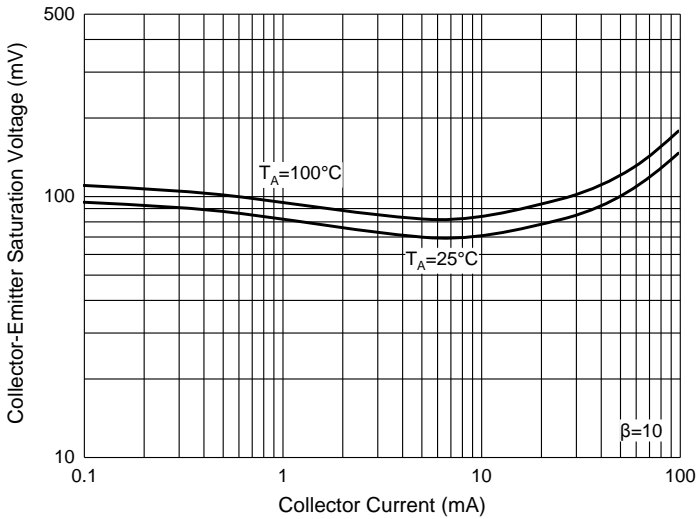


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

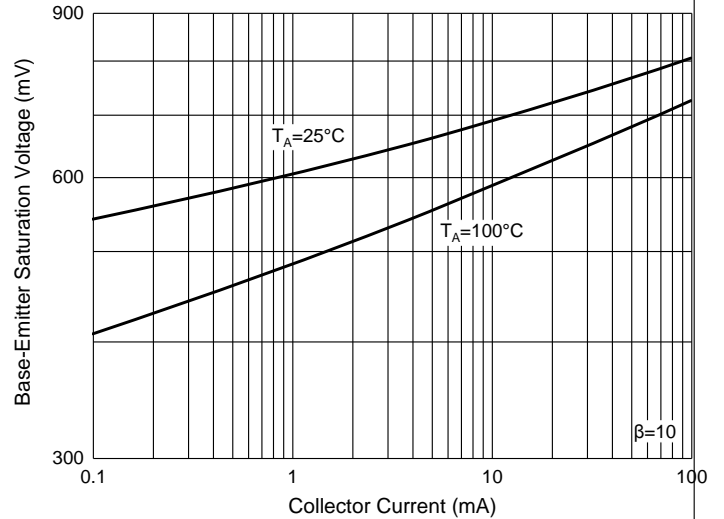


Fig. 5 - Base-Emitter Voltage Characteristics

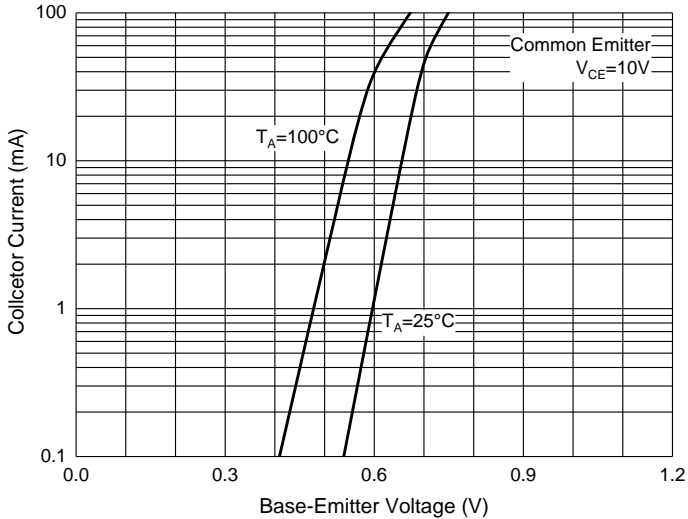
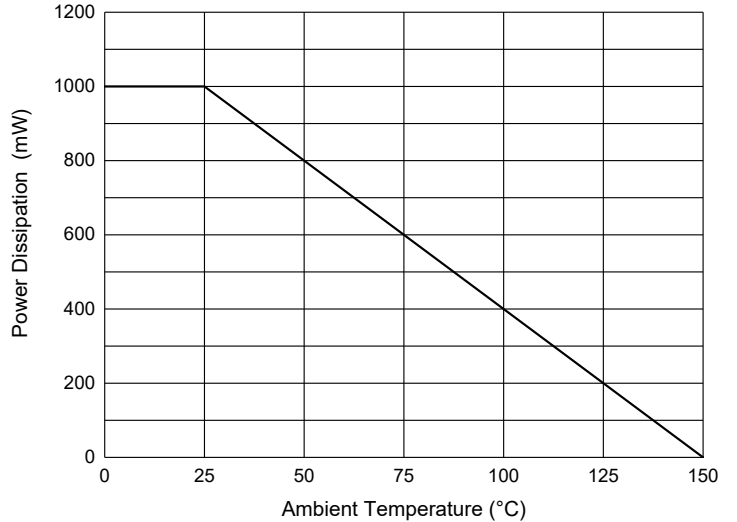


Fig. 6 - Power Derating Curve



Ordering Information

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

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