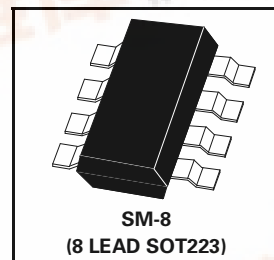
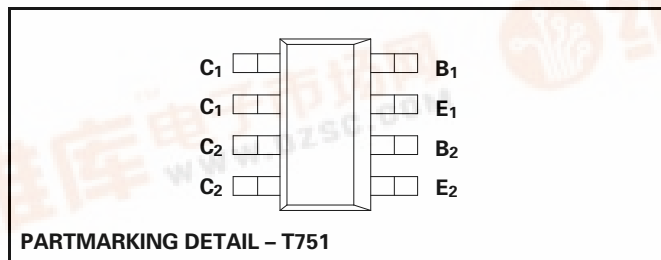


SM-8 DUAL PNP MEDIUM POWER TRANSISTORS

ISSUE 1 - AUGUST 1997

ZDT751



ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|----------------|-------------|------|
| Collector-Base Voltage | V_{CBO} | -80 | V |
| Collector-Emitter Voltage | V_{CEO} | -60 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Peak Pulse Current | I_{CM} | -6 | A |
| Continuous Collector Current | I_C | -2 | A |
| Operating and Storage Temperature Range | $T_j; T_{stg}$ | -55 to +150 | °C |

THERMAL CHARACTERISTICS

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|-----------|--------------|----------------|
| Total Power Dissipation at $T_{amb} = 25^\circ\text{C}^*$ Any single die "on" Both die "on" equally | P_{tot} | 2.25 | W |
| | | 2.75 | W |
| Derate above 25°C^* Any single die "on" Both die "on" equally | | 18 22 | mW/°C mW/°C |
| Thermal Resistance - Junction to Ambient* Any single die "on" Both die "on" equally | | 55.6 45.5 | °C/W °C/W |

* The power which can be dissipated assuming the device is mounted in a typical manner on a PCB with copper equal to 2 inches square.



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ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---------------------------------------|---------------|-----------------------|-------------------------|--------------|--------------------------------|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -80 | | | V | $I_C = -100\mu\text{A}$, $I_E = 0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -60 | | | V | $I_C = -10\text{mA}$, $I_B = 0^*$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5 | | | V | $I_E = -100\mu\text{A}$, $I_C = 0$ |
| Collector Cutoff Current | I_{CBO} | | | -0.1 -10 | μA μA | $V_{CB} = -60\text{V}$ $V_{CB} = -60\text{V}$, $T_{amb} = 100^{\circ}\text{C}$ |
| Emitter Cutoff Current | I_{EBO} | | | -0.1 | μA | $V_{EB} = -4\text{V}$, $I_E = 0$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | -0.15 -0.28 | -0.3 -0.5 | V V | $I_C = 1\text{A}$, $I_B = -100\text{mA}^*$ $I_C = 2\text{A}$, $I_B = -200\text{mA}^*$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | -0.9 | -1.25 | V | $I_C = 1\text{A}$, $I_B = -100\text{mA}^*$ |
| Base-Emitter Turn-On Voltage | $V_{BE(on)}$ | | -0.8 | -1 | V | $I_C = -1\text{A}$, $V_{CE} = -2\text{V}^*$ |
| Static Forward Current Transfer Ratio | h_{FE} | 70 100 80 40 | 200 200 170 80 | 300 | | $I_C = -50\text{mA}$, $V_{CE} = -2\text{V}^*$ $I_C = -500\text{mA}$, $V_{CE} = -2\text{V}^*$ $I_C = -1\text{A}$, $V_{CE} = -2\text{V}^*$ $I_C = -2\text{A}$, $V_{CE} = -2\text{V}^*$ |
| Transition Frequency | f_T | 100 | 140 | | MHz | $I_C = -100\text{mA}$, $V_{CE} = -5\text{V}$ $f = 100\text{MHz}$ |
| Output Capacitance | C_{obo} | | | 30 | pF | $V_{CB} = -10\text{V}$ $f = 1\text{MHz}$ |
| Switching Times | t_{on} | | 40 | | ns | $I_C = -500\text{mA}$, $V_{CC} = -10\text{V}$ $I_{B1} = I_{B2} = -50\text{mA}$ |
| | t_{off} | | 450 | | ns | |

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$

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TYPICAL CHARACTERISTICS

