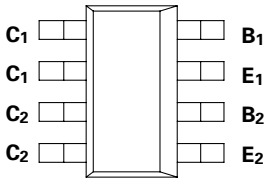


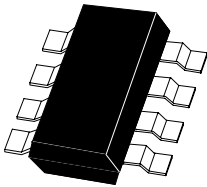
SM-8 DUAL PNP MEDIUM POWER
HIGH GAIN TRANSISTORS

ISSUE 1 - NOVEMBER 1995

ZDT717



PARTMARKING DETAIL – T717



SM-8
(8 LEAD SOT223)

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-12	V
Collector-Emitter Voltage	V_{CEO}	-12	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Pulse Current	I_{CM}	-10	A
Continuous Collector Current	I_C	-2.5	A
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	°C

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Total Power Dissipation at $T_{amb} = 25^{\circ}C^*$ Any single die "on" Both die "on" equally	P_{tot}	2 2.5	W W
Derate above $25^{\circ}C^*$ Any single die "on" Both die "on" equally		16 20	mW/ °C mW/ °C
Thermal Resistance - Junction to Ambient* Any single die "on" Both die "on" equally		62.5 50	°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	$V_{(BR)CBO}$	-12	-35		V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-12	-25		V	$I_C = -10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-8.5		V	$I_E = -100\mu\text{A}$
Collector Cutoff Current	I_{CBO}			-100	nA	$V_{CB} = -10\text{V}$
Emitter Cutoff Current	I_{EBO}			-100	nA	$V_{EB} = -4\text{V}$
Collector Emitter Cutoff Current	I_{CES}			-100	nA	$V_{CES} = -10\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-10 -100 -110 -180	-17 -140 -170 -220	mV mV mV mV	$I_C = -0.1\text{A}, I_B = -10\text{mA}^*$ $I_C = -1\text{A}, I_B = -10\text{mA}^*$ $I_C = -1.5\text{A}, I_B = -50\text{mA}^*$ $I_C = -2.5\text{A}, I_B = -50\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-0.9	-1.0	V	$I_C = -2.5\text{A}, I_B = -50\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.8	-1.0	V	$I_C = -2.5\text{A}, V_{CE} = -2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	300 300 180 60 45	475 450 275 100 70			$I_C = -10\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -100\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -2.5\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -8\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -10\text{A}, V_{CE} = -2\text{V}^*$
Transition Frequency	f_T	80	110		MHz	$I_C = -50\text{mA}, V_{CE} = -10\text{V}$ $f = 100\text{MHz}$
Output Capacitance	C_{obo}		21	30	pF	$V_{CB} = -10\text{V}, f = 1\text{MHz}$
Turn-On Time	t_{on}		70		ns	$V_{CC} = -6\text{V}, I_C = -2\text{A}$ $I_{B1} = I_{B2} = 50\text{mA}$
Turn-Off Time	t_{off}		130		ns	

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

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TYPICAL CHARACTERISTICS

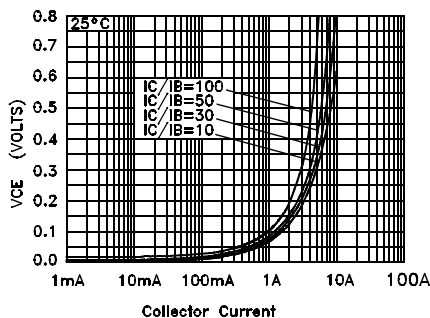


FIG. 1 $V_{CE(SAT)}$ vs I_C

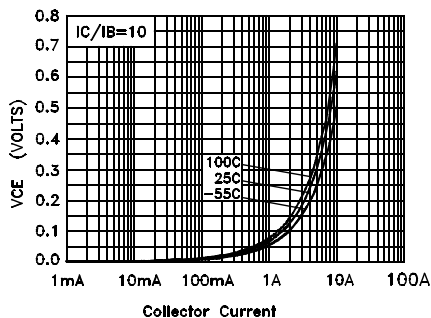


FIG. 2 $V_{CE(SAT)}$ vs I_C

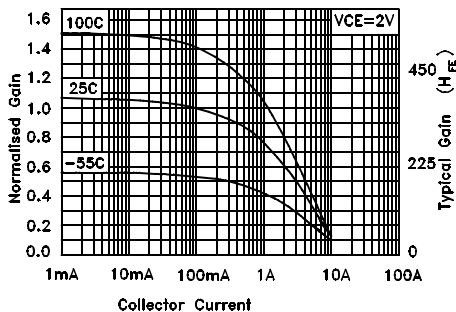


FIG. 3 H_{FE} vs I_C

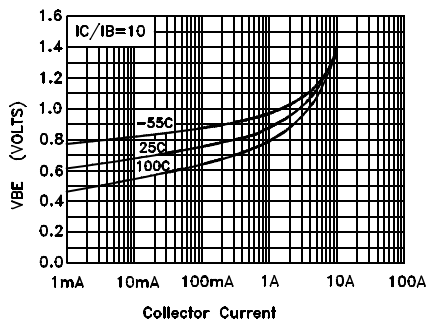


FIG. 4 $V_{BE(SAT)}$ vs I_C

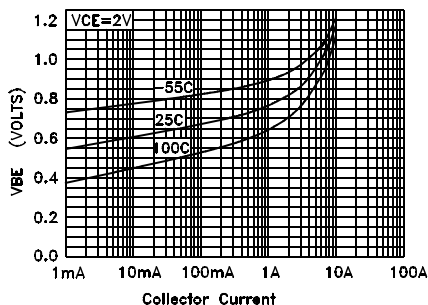


FIG. 5 $V_{BE(ON)}$ vs I_C