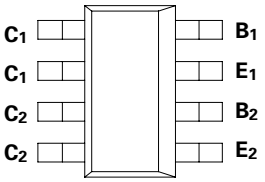
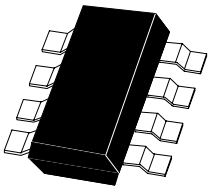
SM-8 DUAL PNP MEDIUM POWER HIGH GAIN TRANSISTORS

ISSUE 1 - AUGUST 1997

ZDT1147



PARTMARKING DETAIL – ZDT1147



SM-8
(8 LEAD SOT223)

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V_{CEO}	-12	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Pulse Current	I_{CM}	-20	A
Continuous Collector Current	I_C	-5	A
Base Current	I_B	-500	mA
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°C* Any single die "on" Both die "on" equally	P_{tot}	 2.0 2.75	 W 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.

ZETEX

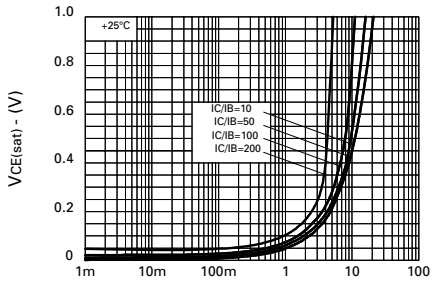
ZDT1147

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

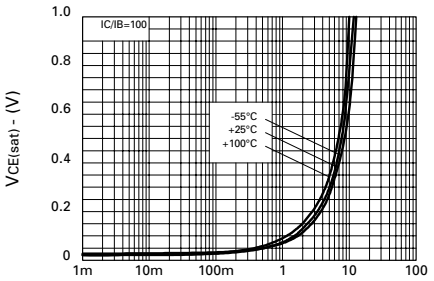
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-15	-35		V	I_C=-100μA
Collector-Emitter Breakdown Voltage	V_{CES}	-12	-25		V	I_C=-100μA
Collector-Emitter Breakdown Voltage	V_{CEO}	-12	-25		V	I_C=-10mA
Collector-Emitter Breakdown Voltage	V_{CEV}	-12	-25		V	I_C=-100μA, V_{EB}=+1V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-8.5		V	I_E=-100μA
Collector Cutoff Current	I_{CBO}		-0.3	-100	nA	V_{CB}=-12V
Emitter Cutoff Current	I_{EBO}		-0.3	-100	nA	V_{EB}=-4V
Collector Emitter Cutoff Current	I_{CES}		-0.3	-100	nA	V_{CES}=-10V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-25 -70 -90 -115 -250	-50 -110 -130 -170 -380	mV mV mV mV mV	I_C=-0.1A, I_B=-1mA* I_C=-0.5A, I_B=-2.5mA* I_C=-1A, I_B=-6mA* I_C=-2A, I_B=-20mA* I_C=-5A, I_B=-50mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-950	-1050	mV	I_C=-5A, I_B=-50mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-905	-1000	mV	I_C=-5A, V_{CE}=-2V*
Static Forward Current Transfer Ratio	h_{FE}	270 250 200 150 90	450 400 340 250 160 60	850		I_C=-10mA, V_{CE}=-2V* I_C=-0.5A, V_{CE}=-2V* I_C=-2A, V_{CE}=-2V* I_C=-5A, V_{CE}=-2V* I_C=-10A, V_{CE}=-2V* I_C=-20A, V_{CE}=-2V*
Transition Frequency	f_T		115		MHz	I_C=-50mA, V_{CE}=-10V f=50MHz
Output Capacitance	C_{CB}		80		pF	V_{CB}=-10V, f=1MHz
Switching Times	t_{on}		150		ns	I_C=-4A, I_B=-40mA, V_{CC}=-10V
	t_{off}		220		ns	I_C=-4A, I_B=±40mA, V_{CC}=-10V

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%

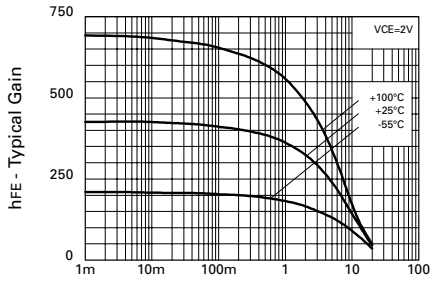
TYPICAL CHARACTERISTICS



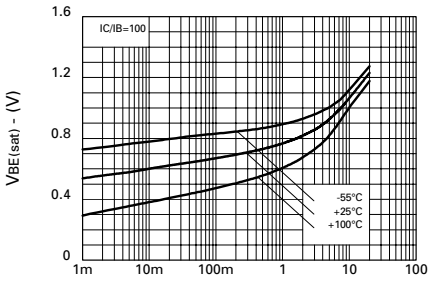
VCE(sat) v IC



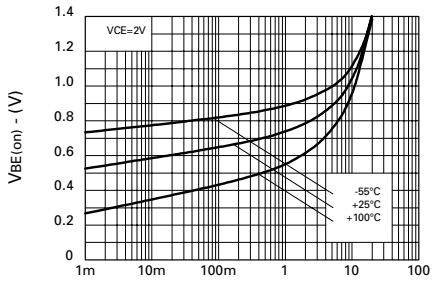
VCE(sat) v IC



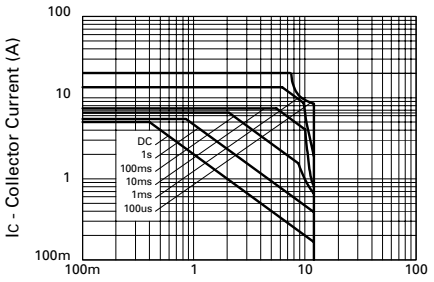
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area