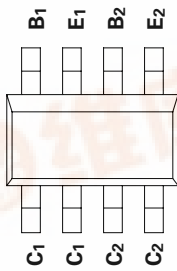
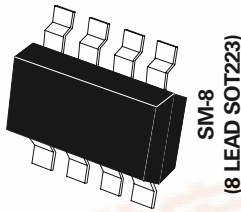


SM-8 DUAL NPN MEDIUM POWER HIGH GAIN TRANSISTORS

ISSUE NOVEMBER 1995



PARTMARKING DETAIL - T619



ZDT619

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	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	$^{\circ}C$

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Total Power Dissipation at $T_{amb} = 25^{\circ}C^*$	P_{tot}	2	W
	Any single die "on"	2.5	W
	Both die "on" equally		
Derate above $25^{\circ}C^*$	Any single die "on"	16	mW/ $^{\circ}C$
	Both die "on" equally	20	mW/ $^{\circ}C$
	Thermal Resistance - Junction to Ambient*		
Any single die "on"	62.5	$^{\circ}C/W$	
Both die "on" equally	50	$^{\circ}C/W$	

* 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.

ZDT619

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50	190		V	$I_C = 100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	65		V	$I_C = 10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.3		V	$I_E = 100\mu A$
Collector Cutoff Current	I_{CBO}			100	nA	$V_{CE} = 40V$
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB} = 4V$
Collector Emitter Cutoff Current	I_{CES}			100	nA	$V_{CES} = 40V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		12	20	mV	$I_C = 0.1A, I_B = 10mA^*$
			125	200	mV	$I_C = 1A, I_B = 10mA^*$
			150	220	mV	$I_C = 2A, I_B = 50mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.87	1.0	V	$I_C = 2A, I_B = 50mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.80	1.0	V	$I_C = 2A, V_{CE} = 2V^*$
Static Forward Current Transfer Ratio	h_{FE}	200	400			$I_C = 10mA, V_{CE} = 2V^*$
		300	450			$I_C = 200mA, V_{CE} = 2V^*$
		200	400			$I_C = 1A, V_{CE} = 2V^*$
		100	225			$I_C = 2A, V_{CE} = 2V^*$
		40	40			$I_C = 6A, V_{CE} = 2V^*$
Transition Frequency	f_T	100	165		MHZ	$I_C = 50mA, V_{CE} = 10V, f = 100MHz$
Output Capacitance	C_{obo}		12	20	pF	$V_{CE} = 10V, f = 1MHz$
Turn-On Time	t_{on}		170		ns	$V_{CC} = 10V, I_C = 1A, I_{B1} = -I_{B2} = 10mA$
Turn-Off Time	t_{off}		750		ns	

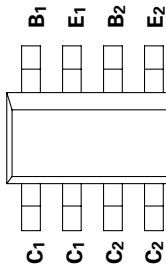
*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$

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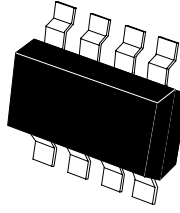
捷多邦, 专业PCB打样工厂, 24小时加急出货

SM-8 DUAL NPN MEDIUM POWER HIGH GAIN TRANSISTORS

ISSUE 1 - NOVEMBER 1995



PARTMARKING DETAIL - T619



SM-8
(8 LEAD SOT223)

ZDT619

ZDT619

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50	190		V	$I_C = 100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	65		V	$I_C = 10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.3		V	$I_E = 100\mu A$
Collector Cutoff Current	I_{CBO}			100	nA	$V_{CE} = 40V$
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB} = 4V$
Collector Emitter Cutoff Current	I_{CES}			100	nA	$V_{CES} = 40V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		12 125 150	20 200 220	mV	$I_C = 0.1A, I_B = 10mA^*$ $I_C = 1A, I_B = 10mA^*$ $I_C = 2A, I_B = 50mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.87	1.0	V	$I_C = 2A, I_B = 50mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.80	1.0	V	$I_C = 2A, V_{CE} = 2V^*$
Static Forward Current Transfer Ratio	h_{FE}	200 300 200 100	400 450 400 225 40			$I_C = 10mA, V_{CE} = 2V^*$ $I_C = 200mA, V_{CE} = 2V^*$ $I_C = 1A, V_{CE} = 2V^*$ $I_C = 2A, V_{CE} = 2V^*$ $I_C = 6A, V_{CE} = 2V^*$
Transition Frequency	f_T	100	165		MHz	$I_C = 50mA, V_{CE} = 10V$ $f = 100MHz$
Output Capacitance	C_{obo}		12	20	pF	$V_{CE} = 10V, f = 1MHz$
Turn-On Time	t_{on}		170		ns	$V_{CC} = 10V, I_C = 1A$ $I_{B1} = -I_{B2} = 10mA$
Turn-Off Time	t_{off}		750		ns	

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

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	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	$^{\circ}C$

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Total Power Dissipation at $T_{amb} = 25^{\circ}C$ *	P_{tot}	2 2.5	W W
Derate above $25^{\circ}C$ *		16 20	mW/ $^{\circ}C$ mW/ $^{\circ}C$
Thermal Resistance - Junction to Ambient*		62.5 50	$^{\circ}C/W$ $^{\circ}C/W$

* 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.

ZDT619

TYPICAL CHARACTERISTICS

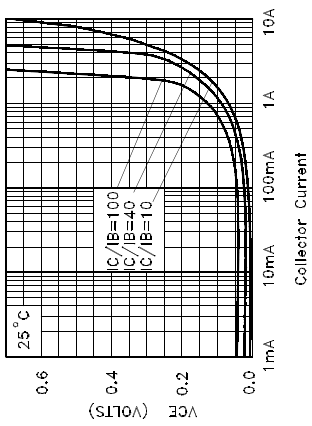


FIG. 1 V_{CE(SAT)} vs I_C

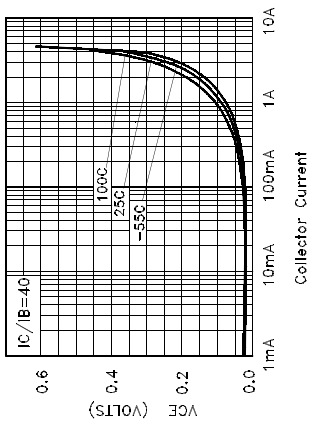


FIG. 2 V_{CE(SAT)} vs I_C

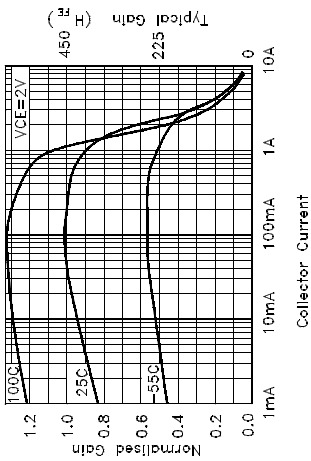


FIG. 3 H_{FE} vs I_C

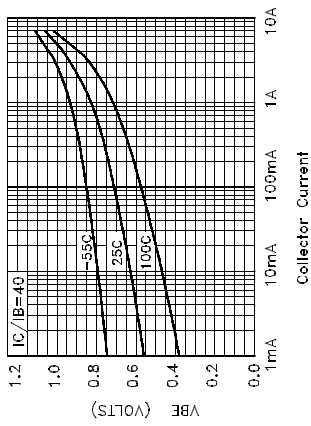


FIG. 4 V_{BE(SAT)} vs I_C

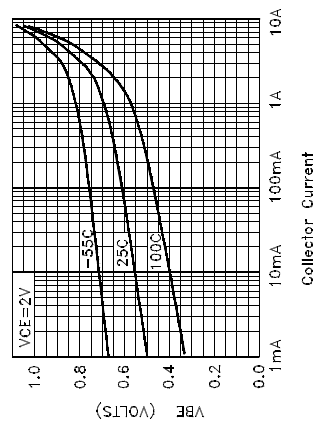


FIG. 5 V_{BE(ON)} vs I_C