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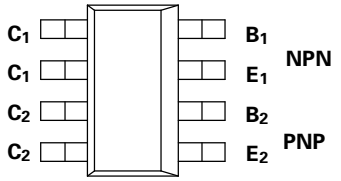
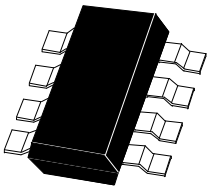
SM-8 COMPLEMENTARY MEDIUM POWER TRANSISTORS

ISSUE 1 - JUNE 1999

ZDT6758



PARTMARKING DETAIL -- T6758



SM-8
(8 LEAD SOT223)

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	NPN	PNP	UNIT
Collector-Base Voltage	V_{CBO}	400	-400	V
Collector-Emitter Voltage	V_{CEO}	400	-400	V
Emitter-Base Voltage	V_{EBO}	5	-5	V
Peak Pulse Current	I_{CM}	1	-1	A
Continuous Collector Current	I_C	0.5	-0.5	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°C* Any single die "on" Both die "on" equally	P_{tot}	 2.25 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.

ZDT6758

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	400			V	I_C=100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	400			V	I_C=10mA*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	I_E=100μA
Collector Cut-Off Current	I_{CBO}			100	nA	V_{CE}=320V
Emitter Cut-Off Current	I_{EBO}			100	nA	V_{EB}=4V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.3 0.25 0.5	V V V	I_C=20mA, I_B=1mA I_C=50mA, I_B=5mA* I_C=100mA, I_B=10mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			0.9	V	I_C=100mA, I_B=10mA*
Base-Emitter Turn On Voltage	$V_{BE(on)}$			0.9	V	IC=100mA, V_{CE}=5V*
Static Forward Current Transfer Ratio	h_{FE}	50 50 40				I_C=1mA, V_{CE}=5V* I_C=100mA, V_{CE}=5V* I_C=200mA, V_{CE}=10V*
Transition Frequency	f_T	50			MHz	I_C=20mA, V_{CE}=20V f=20MHz
Collector-Base Breakdown Voltage	C_{obo}			10	pF	V_{CB}=20V, f=1MHz
Switching times	t_{on} t_{off}		130 3300		ns ns	I_C=100mA, V_C=100V I_{B1}=10mA, I_{B2}=-20mA

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

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-400			V	I_C=-100μA
Collector-Emitter Breakdown Voltage	$V_{CEO(SUS)}$	-400			V	I_C=-10mA*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	I_E=-100μA
Collector Cutoff Current	I_{CBO}			-100	nA	V_{CB}=-320V
Collector Cutoff Current	I_{CES}			-100	nA	V_{CE}=-320V
Emitter Cutoff Current	I_{EBO}			-100	nA	V_{EB}=-4V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.30 -0.25 -0.50	V V V	I_C=-20mA, I_B=-1mA I_C=-50mA, I_B=-5mA* I_C=-100mA, I_B=-10mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-0.9	V	I_C=-100mA, I_B=-10mA*
Base-Emitter Turn On Voltage	$V_{BE(on)}$			-0.9	V	I_C=-100mA, V_{CE}=-5V*
Static Forward Current Transfer Ratio	h_{FE}	50 50 40				I_C=-1mA, V_{CE}=-5V I_C=-100mA, V_{CE}=-5V* I_C=-200mA, V_{CE}=-10V*
Transition Frequency	f_T	50			MHz	I_C=-20mA, V_{CE}=-20V f=20MHz
Output Capacitance	C_{obo}			20	pF	V_{CB}=-20V, f=1MHz
Switching times	t_{on} t_{off}		140 2000		ns ns	I_C=-100mA, V_C=-100V I_{B1}=10mA, I_{B2}=-20mA

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