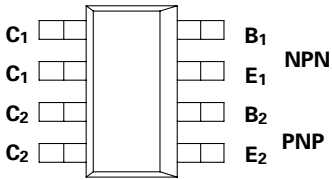


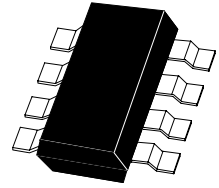
# SM-8 COMPLEMENTARY MEDIUM POWER TRANSISTORS

ISSUE 1 - NOVEMBER 1995

## ZDT6757



PARTMARKING DETAIL - T6757



SM-8  
(8 LEAD SOT223)

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	NPN	PNP	UNIT
Collector-Base Voltage	$V_{CBO}$	300	-300	V
Collector-Emitter Voltage	$V_{CEO}$	300	-300	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 $T_{amb} = 25^\circ\text{C}^*$ Any single die "on" Both die "on" equally	$P_{tot}$	2.25 2.75	W W
Derate above $25^\circ\text{C}^*$ 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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## NPN TRANSISTOR ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ ).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	300			V	$I_C=100\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	300			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	$I_{CBO}$			100	nA	$V_{CB}=200\text{V}$ , $I_E=0$
Emitter Cutoff Current	$I_{EBO}$			100	nA	$V_{EB}=3\text{V}$ , $I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5	V	$I_C=100\text{mA}$ , $I_B=10\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1	V	$I_C=100\text{mA}$ , $I_B=10\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			1	V	$I_C=100\text{mA}$ , $V_{CE}=5\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	50 40				$I_C=100\text{mA}$ , $V_{CE}=5\text{V}$ $I_C=10\text{mA}$ , $V_{CE}=5\text{V}$
Transition Frequency	$f_T$	30			MHz	$I_C=10\text{mA}$ , $V_{CE}=20\text{V}$ $f=20\text{MHz}$
Output Capacitance	$C_{obo}$			20	pF	$V_{CB}=20\text{V}$ , $f=1\text{MHz}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

For typical characteristics graphs see FZT657 datasheet.

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-300			V	$I_C = -100\mu\text{A}$ , $I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-300			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	$I_{CBO}$			-100	nA nA	$V_{CB} = -160\text{V}$ , $I_E = 0$ $V_{CB} = -200\text{V}$ , $I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			-100	nA	$V_{EB} = -3\text{V}$ , $I_C = 0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.5	V	$I_C = -100\text{mA}$ , $I_B = -10\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-1.0	V	$I_C = -100\text{mA}$ , $I_B = -10\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			-1.0	V	$I_C = -100\text{mA}$ , $V_{CE} = -5\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	50 40				$I_C = -100\text{mA}$ , $V_{CE} = -5\text{V}^*$ $I_C = -10\text{mA}$ , $V_{CE} = -5\text{V}^*$
Transition Frequency	$f_T$	30			MHz	$I_C = -10\text{mA}$ , $V_{CE} = -20\text{V}$ $f = 20\text{MHz}$
Output Capacitance	$C_{obo}$			20	pF	$V_{CB} = -20\text{V}$ , $f = 1\text{MHz}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$   
For typical characteristics graphs see FZT757 datasheet.