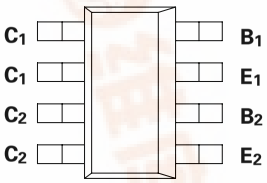
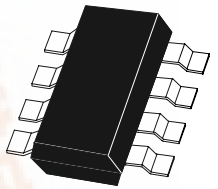
SM-8 DUAL PNP MEDIUM POWER DARLINGTON TRANSISTORS

ISSUE 1 - NOVEMBER 1995

ZDT705



PARTMARKING DETAIL – T705



SM-8
(8 LEAD SOT223)

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-140	V
Collector-Emitter Voltage	V_{CEO}	-120	V
Emitter-Base Voltage	V_{EBO}	-10	V
Peak Pulse Current	I_{CM}	-4	A
Continuous Collector Current	I_C	-1	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.

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

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-140		V	I_C=-100μA
Collector-Emitter Breakdown Voltage	$V_{CEO(SUS)}$	-120		V	I_C=-10mA*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-10		V	I_E=-100μA
Collector Cutoff Current	I_{CBO}		-0.1 -10	μA μA	V_{CB}=-120V V_{CB}=-120V, T_{amb}=100°C
Collector Cutoff Current	I_{CES}		-10	μA	V_{CE}=-80V
Emitter Cutoff Current	I_{EBO}		-0.1	μA	V_{EB}=-8V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-1.3 -2.5	V V	I_C=-1A, I_B=-1mA* I_C=-2A, I_B=-2mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-1.8	V	I_C=-1A, I_B=-10mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-1.7	V	I_C=-1A, V_{CE}=-5V*
Static Forward Current Transfer Ratio	h_{FE}	3K 3K 3K 2K	30K		I_C=-10mA, V_{CE}=-5V* I_C=-100mA, V_{CE}=-5V* I_C=-1A, V_{CE}=-5V* I_C=-2A, V_{CE}=-5V*
Transition Frequency	f_T	160 Typical		MHz	I_C=-100mA, V_{CE}=-10V f=20MHz
Input Capacitance	C_{ibo}	90 Typical		pF	V_{EB}=-0.5V, f=1MHz
Output Capacitance	C_{obo}	15 Typical		pF	V_{CE}=-10V, f=1MHz
Switching Times	t_{on}	0.6 Typical		μs	I_C=-0.5A, V_{CE}=-10V I_{B1}=I_{B2}=-0.5mA
	t_{off}	0.8 Typical		μs	

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

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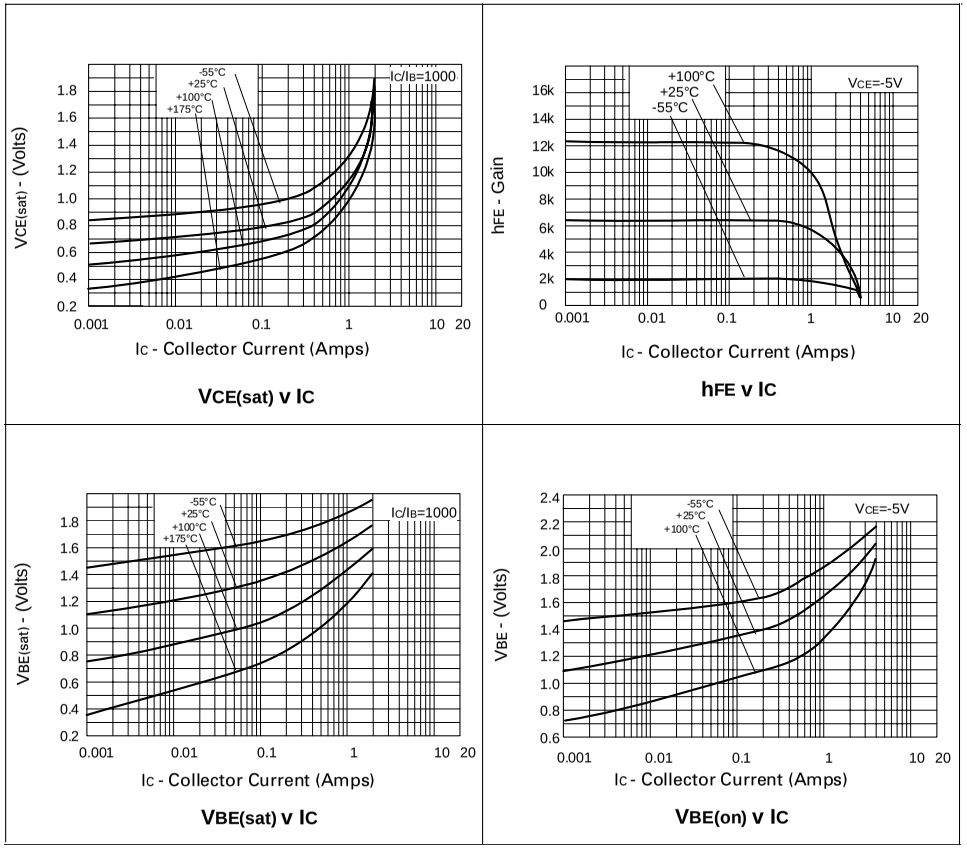
TYPICAL CHARACTERISTICS



VCE(sat) v IC | **hFE v IC**

VBE(sat) v IC | **VBE(on) v IC**

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Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-1.7	V	I_C=-1A, V_{CE}=-5V*
Static Forward Current Transfer Ratio	h_{FE}	3K 3K 3K 2K	30K		I_C=-10mA, V_{CE}=-5V* I_C=-100mA, V_{CE}=-5V* I_C=-1A, V_{CE}=-5V* I_C=-2A, V_{CE}=-5V*
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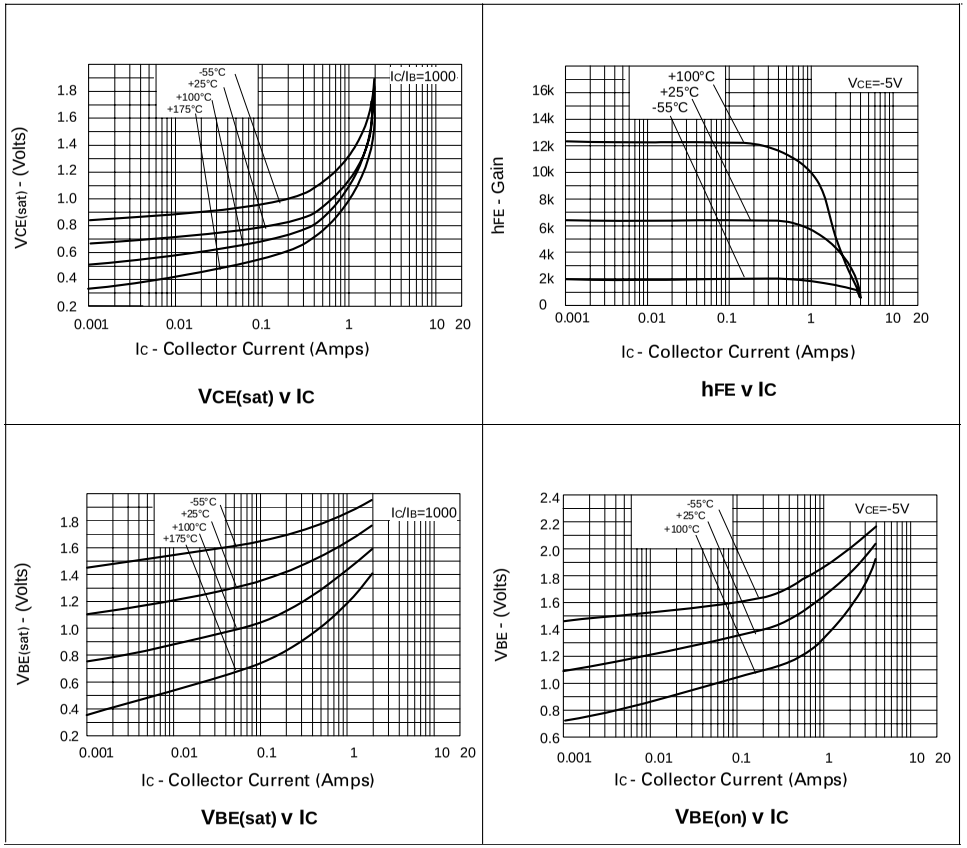

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