

MMBTA92,93

CASE 318-02/03, STYLE 6
SOT-23 (TO-236AA/AB)

HIGH VOLTAGE TRANSISTOR

PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	MMBTA92	MMBTA93	Unit
Collector-Emitter Voltage	V _{CEO}	300	200	Vdc
Collector-Base Voltage	V _{CBO}	300	200	Vdc
Emitter-Base Voltage	V _{EBO}	5.0	5.0	Vdc
Collector Current — Continuous	I _C	500		mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, T _A = 25°C Derate above 25°C	P _D	350 2.8	mW mW/°C
Storage Temperature	T _{stg}	150	°C
*Thermal Resistance Junction to Ambient	R _{θJA}	357	°C/W

*Package mounted on 99.5% alumina 10 x 8 x 0.6 mm.

Refer to MPSA92 for graphs.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage(1) (I _C = 1.0 mAdc, I _E = 0)	MMBTA92 MMBTA93	V _{(BR)CEO}	300 200	—	Vdc
Collector-Base Breakdown Voltage (I _C = 100 μAdc, I _E = 0)	MMBTA92 MMBTA93	V _{(BR)CBO}	300 200	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 100 μAdc, I _C = 0)		V _{(BR)EBO}	5.0	—	Vdc
Collector Cutoff Current (V _{CB} = 200 Vdc, I _E = 0) (V _{CB} = 160 Vdc, I _E = 0)	MMBTA92 MMBTA93	I _{CBO}	—	0.25 0.25	μAdc
Emitter Cutoff Current (V _{BE} = 3.0 Vdc, I _C = 0)		I _{EBO}	—	0.1	μAdc

ON CHARACTERISTICS(1)

DC Current Gain (I _C = 1.0 mAdc, V _{CE} = 10 Vdc) (I _C = 10 mAdc, V _{CE} = 10 Vdc) (I _C = 30 mAdc, V _{CE} = 10 Vdc)	Both Types Both Types MMBTA92 MMBTA93	h _{FE}	25 40 25 25	— — — —	—
Collector-Emitter Saturation Voltage (I _C = 20 mAdc, I _B = 2.0 mAdc)	MMBTA92 MMBTA93	V _{CE(sat)}	— —	0.5 0.5	Vdc
Base-Emitter Saturation Voltage (I _C = 20 mAdc, I _B = 2.0 mAdc)		V _{BE(sat)}	—	0.9	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product (I _C = 10 mAdc, V _{CE} = 20 Vdc, f = 100 MHz)		f _T	50	—	MHz
Collector-Base Capacitance (V _{CB} = 20 Vdc, I _E = 0, f = 1.0 MHz)	MMBTA92 MMBTA93	C _{cb}	— —	6.0 8.0	pF

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.