

MXTA42 MXTA43

CASE 345-01, STYLE 1
SOT-89

HIGH VOLTAGE TRANSISTOR

NPN SILICON

Refer to MPSA42 for graphs.

MAXIMUM RATINGS

Rating	Symbol	MPSA42	MPSA43	Unit
Collector-Emitter Voltage	V_{CEO}	300	200	Vdc
Collector-Base Voltage	V_{CBO}	300	200	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	6.0	Vdc
Collector Current — Continuous	I_C	500		mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 8.0	Watt mW/ $^\circ\text{C}$
Storage Temperature	T_{stg}	150	$^\circ\text{C}$
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	125	$^\circ\text{C/W}$

*Package mounted on 99.5% alumina 10 x 12 x 0.6 mm.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage(1) ($I_C = 1.0 \text{ mAdc}$, $I_B = 0$)	$V_{(BR)CEO}$	300 200	— —	Vdc
Collector-Base Breakdown Voltage ($I_C = 100 \mu\text{Adc}$, $I_E = 0$)	$V_{(BR)CBO}$	300 200	— —	Vdc
Emitter-Base Breakdown Voltage ($I_E = 100 \mu\text{Adc}$, $I_C = 0$)	$V_{(BR)EBO}$	6.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 200 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 160 \text{ Vdc}$, $I_E = 0$)	I_{CBO}	— —	0.1 0.1	μAdc
Emitter Cutoff Current ($V_{BE} = 6.0 \text{ Vdc}$, $I_C = 0$) ($V_{BE} = 4.0 \text{ Vdc}$, $I_C = 0$)	I_{EBO}	— —	0.1 0.1	μAdc
ON CHARACTERISTICS(1)				
DC Current Gain ($I_C = 1.0 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) ($I_C = 10 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) ($I_C = 30 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$)	Both Types Both Types MXTA42 MXTA43	h_{FE}	25 40 40 40	— — —
Collector-Emitter Saturation Voltage ($I_C = 20 \text{ mAdc}$, $I_B = 2.0 \text{ mAdc}$)	MXTA42 MXTA43	$V_{CE(sat)}$	— —	0.5 0.5
Base-Emitter Saturation Voltage ($I_C = 20 \text{ mAdc}$, $I_B = 2.0 \text{ mAdc}$)		$V_{BE(sat)}$	—	0.9
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product ($I_C = 10 \text{ mAdc}$, $V_{CE} = 20 \text{ Vdc}$, $f = 100 \text{ MHz}$)		f_T	50	—
Collector-Base Capacitance ($V_{CB} = 20 \text{ Vdc}$, $I_E = 0$, $f = 1.0 \text{ MHz}$)	MXTA42 MXTA43	C_{cb}	— —	3.0 4.0

(1) Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.