

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	350	Vdc
Collector-Base Voltage	V_{CBO}	350	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Base Current	I_B	250	mA
Collector Current — Continuous	I_C	500	mA

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350 2.8	mW mW/ $^\circ\text{C}$
Storage Temperature	T_{stg}	150	$^\circ\text{C}$
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$

*Package mounted on 99.5% alumina $10 \times 8 \times 0.6$ mm.

MMBT6517

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

HIGH VOLTAGE TRANSISTOR

NPN SILICON

Refer to 2N6517 for graphs.

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage ($I_C = 1.0$ mA)	$V_{(BR)CEO}$	350	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 100$ μA)	$V_{(BR)CBO}$	350	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10$ μA)	$V_{(BR)EBO}$	6.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 250$ V)	I_{CBO}	—	50	nA
Emitter Cutoff Current ($V_{EB} = 5.0$ V)	I_{EBO}	—	50	nA

ON CHARACTERISTICS

DC Current Gain ($I_C = 1.0$ mA, $V_{CE} = 10$ V) ($I_C = 10$ mA, $V_{CE} = 10$ V) ($I_C = 30$ mA, $V_{CE} = 10$ V) ($I_C = 50$ mA, $V_{CE} = 10$ V) ($I_C = 100$ mA, $V_{CE} = 10$ V)	h_{FE}	20 30 30 20 15	— — 200 100 —	—
Collector-Emitter Saturation Voltage ($I_C = 10$ mA, $I_B = 1.0$ mA) ($I_C = 20$ mA, $I_B = 2.0$ mA) ($I_C = 30$ mA, $I_B = 3.0$ mA) ($I_C = 50$ mA, $I_B = 5.0$ mA)	$V_{CE(sat)}$	— — — —	0.30 0.35 0.50 1.0	Vdc
Base-Emitter Saturation Voltage ($I_C = 10$ mA, $I_B = 1.0$ mA) ($I_C = 20$ mA, $I_B = 2.0$ mA) ($I_C = 30$ mA, $I_B = 3.0$ mA)	$V_{BE(sat)}$	— — —	0.75 0.85 0.90	Vdc
Base-Emitter On Voltage ($I_C = 100$ mA, $V_{CE} = 10$ V)	$V_{BE(on)}$	—	2.0	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product ($I_C = 10$ mA, $V_{CE} = 20$ V, $f = 20$ MHz)	f_T	40	200	MHz
Collector-Base Capacitance ($V_{CB} = 20$ V, $f = 1.0$ MHz)	C_{cb}	—	6.0	pF
Emitter-Base Capacitance ($V_{EB} = 0.5$ V, $f = 1.0$ MHz)	C_{eb}	—	80	pF