

MMBTA20

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

GENERAL PURPOSE AMPLIFIER

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	40	Vdc
Emitter-Base Voltage	V_{EBO}	4.0	Vdc
Collector Current — Continuous	I_C	100	mAdc

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 x 8 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 ($I_C = 1.0$ mAdc, $I_B = 0$)	$V_{(BR)CEO}$	40	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 100$ μ Adc, $I_C = 0$)	$V_{(BR)EBO}$	4.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 30$ Vdc, $I_E = 0$)	I_{CBO}	—	100	nAdc
ON CHARACTERISTICS				
DC Current Gain ($I_C = 5.0$ mAdc, $V_{CE} = 10$ Vdc)	h_{FE}	40	400	—
Collector-Emitter Saturation Voltage ($I_C = 10$ mAdc, $I_B = 1.0$ mAdc)	$V_{CE(sat)}$	—	0.25	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product ($I_C = 5.0$ mAdc, $V_{CE} = 10$ Vdc, $f = 100$ MHz)	f_T	125	—	MHz
Output Capacitance ($V_{CB} = 10$ Vdc, $I_E = 0$, $f = 100$ kHz)	C_{obo}	—	4.0	pF