

BSS79B,C

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

GENERAL PURPOSE TRANSISTOR

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	40	Vdc
Collector-Base Voltage	V_{CBO}	75	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	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/°C
Storage Temperature	T_{stg}	150	°C
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	°C/W

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

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 10$ mAdc)	$V_{(BR)CEO}$	40	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 10$ μ Adc)	$V_{(BR)CBO}$	75	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10$ μ Adc)	$V_{(BR)EBO}$	6.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 60$ Vdc) ($V_{CB} = 60$ Vdc, $T_A = 150^\circ\text{C}$)	I_{CBO}	—	10 10	nAdc μ Adc
Emitter Cutoff Current ($V_{BE} = 3.0$ Vdc)	I_{EBO}	—	10	nAdc

ON CHARACTERISTICS

DC Current Gain ($I_C = 150$ mAdc, $V_{CE} = 10$ Vdc)	B C	h_{FE}	40 100	120 300	—
Collector-Emitter Saturation Voltage ($I_C = 150$ mAdc, $I_B = 15$ mAdc) ($I_C = 500$ mAdc, $I_B = 50$ mAdc)		$V_{CE(sat)}$	— —	0.3 1.0	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product ($V_{CE} = 20$ Vdc, $I_C = 20$ mAdc, $f = 100$ MHz)		f_T	250	—	MHz
Output Capacitance ($V_{CB} = 10$ Vdc, $f = 1.0$ MHz)		C_{obo}	—	8.0	pF

SWITCHING CHARACTERISTICS

Delay Time ($V_{CC} = 30$ Vdc, $I_C = 150$ mAdc) ($I_{B1} = I_{B2} = 15$ mAdc)		t_d	—	10	ns
Rise Time ($V_{CC} = 30$ Vdc, $I_C = 150$ mAdc) ($I_{B1} = I_{B2} = 15$ mAdc)		t_r	—	10	ns
Storage Time ($V_{CC} = 30$ Vdc, $I_C = 150$ mAdc) ($I_{B1} = I_{B2} = 15$ mAdc)		t_s	—	225	ns
Fall Time ($V_{CC} = 30$ Vdc, $I_C = 150$ mAdc) ($I_{B1} = I_{B2} = 15$ mAdc)		t_f	—	60	ns