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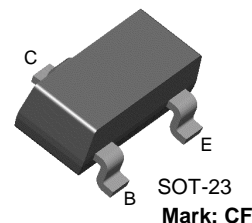
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# BSS79C

## NPN General Purpose Amplifier

- This device is for use as a medium power amplifier and switch requiring collector currents up to 500mA.
- Sourced from process 19.
- See BCW65C for characteristics.



## Absolute Maximum Ratings \* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage	40	V
$V_{CBO}$	Collector-Base Voltage	75	V
$V_{EBO}$	Emitter-Base Voltage	6.0	V
$I_C$	Collector Current - Continuous	800	mA
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	-55 ~ +150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### NOTES:

1. These ratings are based on a maximum junction temperature of 150 degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

## Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
<b>Off Characteristics</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}, I_B = 0$	75		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}, I_E = 0$	40		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}, I_C = 0$	6.0		V
$I_{CBO}$	Collector-Cutoff Current	$V_{CB} = 60\text{V}$ $V_{CB} = 60\text{V}, T_a = 150^\circ\text{C}$		10 10	nA $\mu\text{A}$
$I_{EBO}$	Emitter-Cutoff Current	$V_{EB} = 3.0\text{V}, I_C = 0$		10	nA
<b>On Characteristics *</b>					
$h_{FE}$	DC Current Gain	$I_C = 150\text{mA}, V_{CE} = 10\text{V}$	100	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$		0.3 1.0	V V
<b>Small Signal Characteristics</b>					
$f_T$	Current Gain - Bandwidth Product	$I_C = 20\text{mA}, V_{CE} = 20\text{V}, f = 100\text{MHz}$		250	MHz
$C_{CB}$	Collector-Base Capacitance	$V_{CB} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$		8.0	pF
<b>Switching Characteristics</b>					
$t_d$	Delay Time	$V_{CC} = 30\text{V}, V_{BE(OFF)} = 0.5\text{V},$ $I_C = 150\text{mA}, I_{B1} = 15\text{mA}$		10	ns
$t_r$	Rise Time			10	ns
$t_s$	Storage Time	$V_{CC} = 30\text{V}, I_C = 150\text{mA},$ $I_{B1} = I_{B2} = 15\text{mA}$		265	ns
$t_f$	Fall Time			60	ns

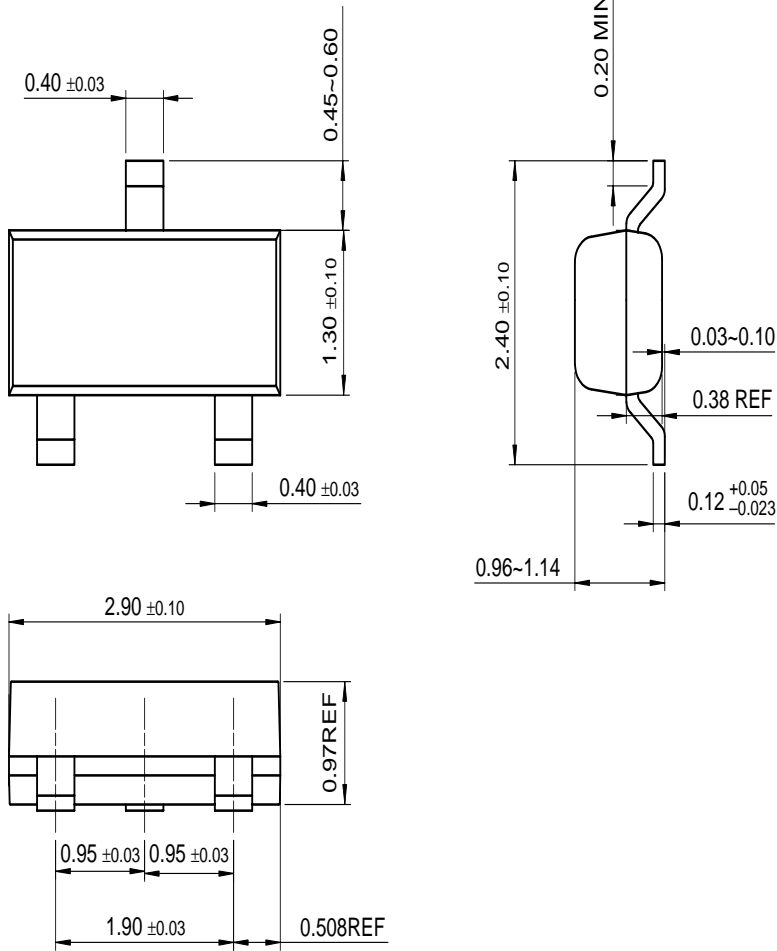
**Thermal Characteristics**  $T_a=25^{\circ}\text{C}$  unless otherwise noted

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	350	mW
	Derate above $25^{\circ}\text{C}$	2.8	mW/ $^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^{\circ}\text{C}/\text{W}$

\* Device mounted on FR-4 PCB  $400\text{mm} \times 40\text{mm} \times 1.5\text{mm}$

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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