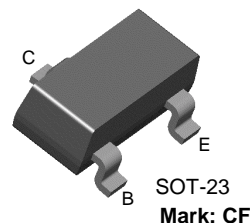


# BSS79C

## 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

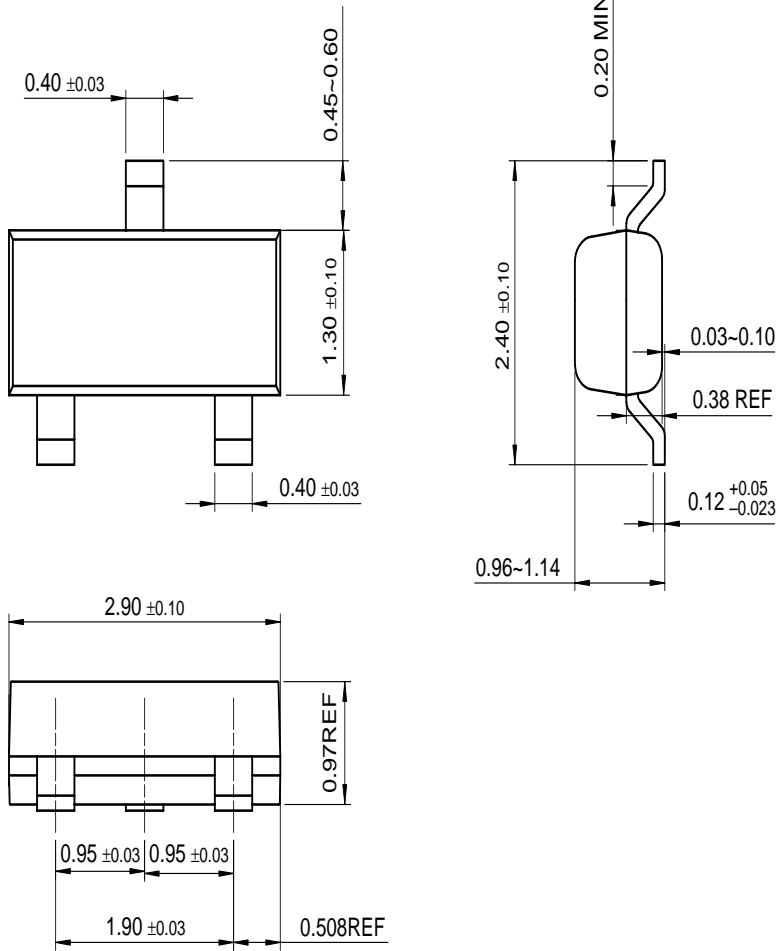
**Thermal Characteristics**  $T_a=25^{\circ}\text{C}$  unless otherwise noted

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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## PRODUCT STATUS DEFINITIONS

### Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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