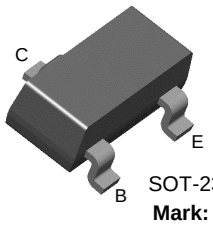
FAIRCHILD
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# BSS79C

## NPN General Purpose Amplifier

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




SOT-23
**Mark: CF**

## Absolute Maximum Ratings * $T_a$=25°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 | °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°C unless otherwise noted

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

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## Thermal Characteristics $T_a$=25°C unless otherwise noted

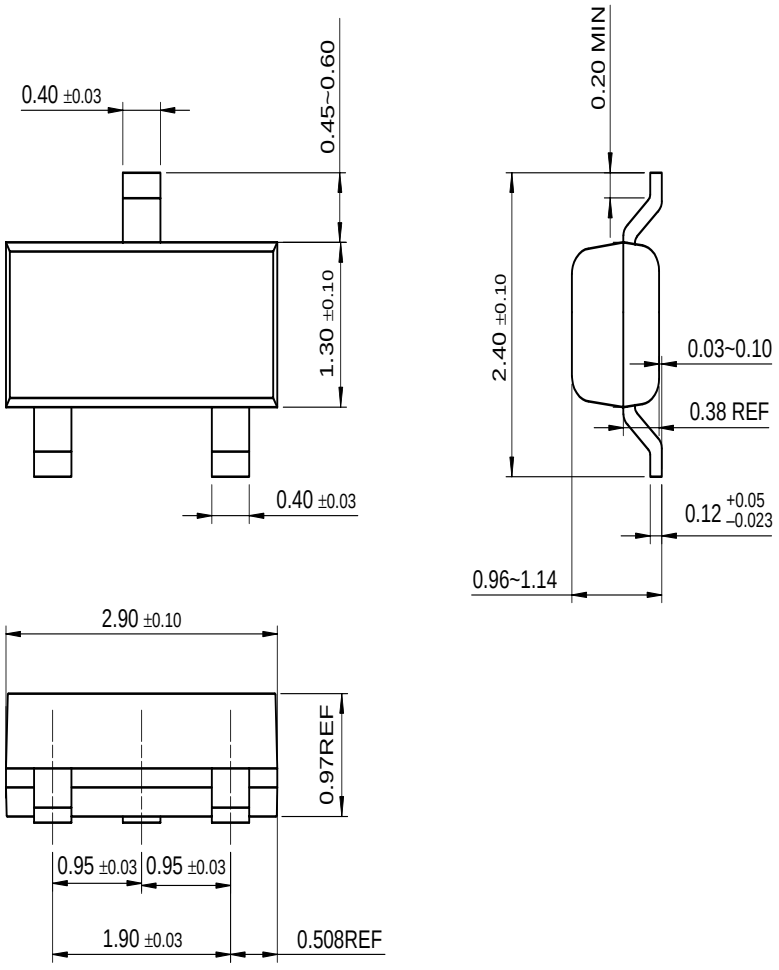
| Symbol | Parameter | Max. | Units |
|---|---|---|---|
| $P_D$ | Total Device Dissipation<br>Derate above 25°C | 350<br>2.8 | mW<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 357 | °C/W |

* Device mounted on FR-4 PCB 400mm × 40mm × 1.5mm

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## Package Dimensions

SOT-23




Dimensions in Millimeters

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