

# BF 160

## SILICON PLANAR NPN

### IF AMPLIFIER FOR AM/FM RADIOS

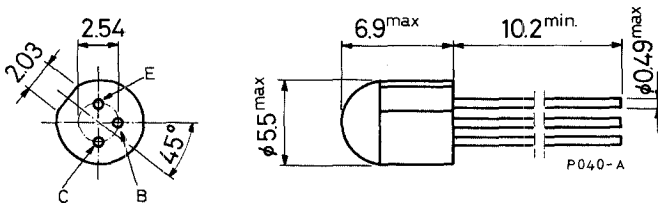
The BF 160 is a silicon planar NPN transistor in a TO-18 epoxy package. It is designed for intermediate frequency (5.5 MHz TV - 10.7 MHz FM) and for general AM-FM applications.

### ABSOLUTE MAXIMUM RATINGS

$V_{CB0}$	Collector-base voltage ( $I_E = 0$ )	30 V
$V_{CEO}$	Collector-emitter voltage ( $I_B = 0$ )	12 V
$V_{EBO}$	Emitter-base voltage ( $I_C = 0$ )	2 V
$P_{tot}$	Total power dissipation at $T_{amb} \leq 25^\circ\text{C}$	200 mW
	at $T_{case} \leq 25^\circ\text{C}$	500 mW
$T_{stg}$	Storage temperature	-55 to 125 °C
$T_j$	Junction temperature	125 °C

### MECHANICAL DATA

Dimensions in mm



TO-18 epoxy

# BF 160

## THERMAL DATA

$R_{th\ j-case}$	Thermal resistance junction-case	max	200 °C/W
$R_{th\ j-amb}$	Thermal resistance junction-ambient	max	500 °C/W

## ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ °C}$ unless otherwise specified)

Parameter		Test conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector cutoff current ( $I_E = 0$ )	$V_{CB} = 15\text{ V}$ $V_{CB} = 15\text{ V}$ $T_{amb} = 65\text{ °C}$			100 5	nA $\mu\text{A}$
$V_{(BR)\ CBO}$	Collector-base breakdown voltage ( $I_E = 0$ )	$I_C = 100\ \mu\text{A}$	30			V
$V_{(BR)\ CEO}$	*Collector-emitter breakdown voltage ( $I_B = 0$ )	$I_C = 3\text{ mA}$	12			V
$V_{(BR)\ EBO}$	Emitter-base breakdown voltage ( $I_C = 0$ )	$I_E = 100\ \mu\text{A}$	2			V
$h_{FE}^*$	DC current gain	$I_C = 3\text{ mA}$ $V_{CE} = 10\text{ V}$	20	50		—
$f_T$	Transition frequency	$I_C = 3\text{ mA}$ $V_{CE} = 10\text{ V}$	400	600		MHz
$-C_{re}$	Reverse capacitance	$I_C = 3\text{ mA}$ $V_{CE} = 10\text{ V}$		0.8	1.2	pF
$G_{pe}$	Power gain	$I_C = 3\text{ mA}$ $V_{CE} = 8\text{ V}$ $f = 10.7\text{ MHz}$	28	32		dB

\* Pulsed: pulse duration = 300  $\mu\text{s}$ , duty factor = 1%.