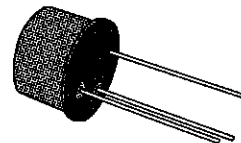


## MEDIUM POWER VIDEO AMPLIFIERS

### DESCRIPTION

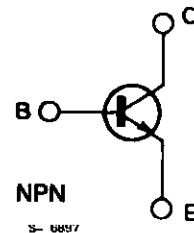
The BF657, BF658 and BF659 are silicon planar epitaxial NPN transistors in Jedec TO-39 metal case.

They are particularly designed for application with precision "IN-LINE" large screen CRT (thermal resistance  $\leq 20^\circ \text{C/W}$ ).



TO-39

### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		BF657	BF658	BF659	
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	160	250	300	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	160	250	300	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	5			V
$I_C$	Collector Current	100			mA
$I_{CM}$	Collector Peak Current	200			mA
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 60^\circ \text{C}$ at $T_{case} \leq 140^\circ \text{C}$	7 3			W W
$T_{stg}$	Storage Temperature	- 55 to 200			$^\circ \text{C}$
$T_j$	Junction Temperature	200			$^\circ \text{C}$

## BF657-BF658-BF659

### THERMAL DATA

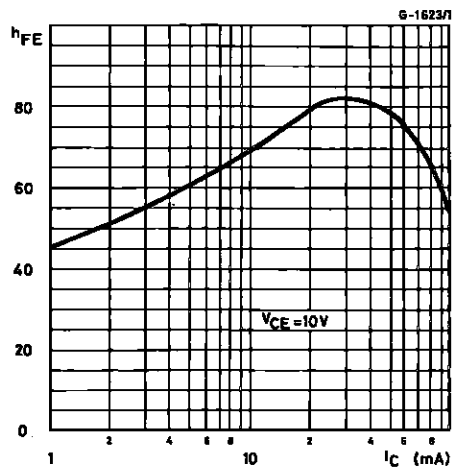
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	20	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	175	$^{\circ}C/W$

### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

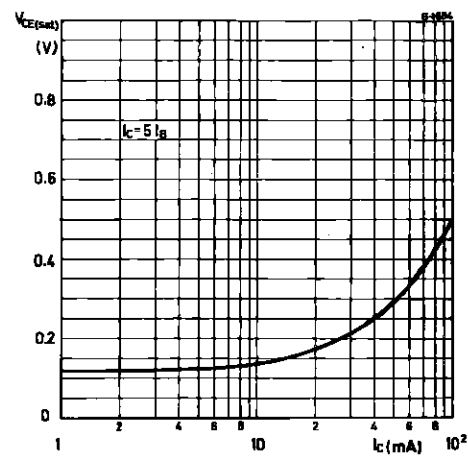
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	for <b>BF657</b> $V_{CB} = 100\ V$ for <b>BF658</b> $V_{CB} = 200\ V$ for <b>BF659</b> $V_{CB} = 250\ V$			50 50 50	nA nA nA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100\ \mu A$ for <b>BF657</b> for <b>BF658</b> for <b>BF659</b>	160 250 300			V V V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = 10\ mA$ for <b>BF657</b> for <b>BF658</b> for <b>BF659</b>	160 250 300			V V V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ( $I_C = 0$ )	$I_E = 100\ \mu A$	5			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 30\ mA$ $I_B = 6\ mA$			1	V
$h_{FE}^*$	DC Current Gain	$I_C = 30\ mA$ $V_{CE} = 10\ V$	25			
$f_T$	Transition Frequency	$I_C = 15\ mA$ $V_{CE} = 10\ V$		90		MHz
$C_{re}$	Reverse Capacitance	$I_C = 0$ $f = 1\ MHz$ $V_{CE} = 30\ V$		3		pF

\* Pulsed : pulse duration = 300  $\mu s$ , duty cycle = 1 %.

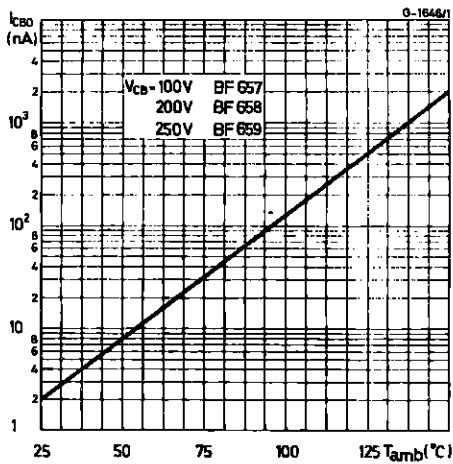
#### DC Current Gain.



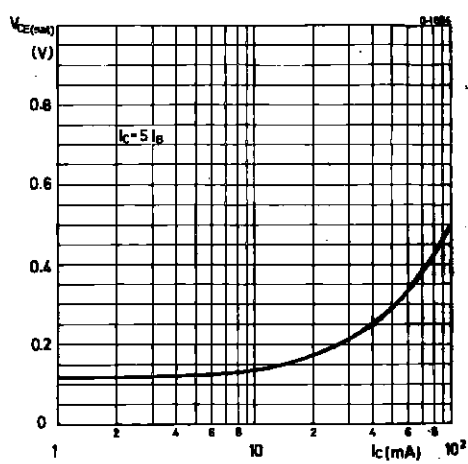
#### Collector-emitter Saturation Voltage.



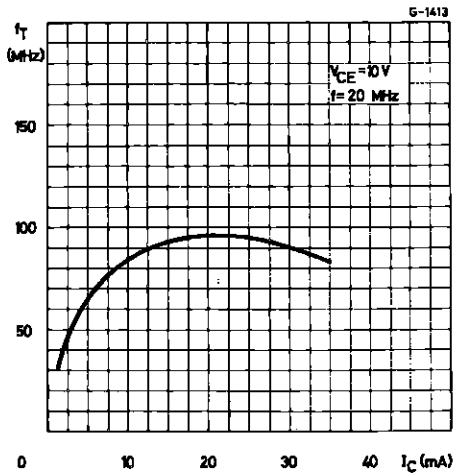
Collector Cutoff Current.



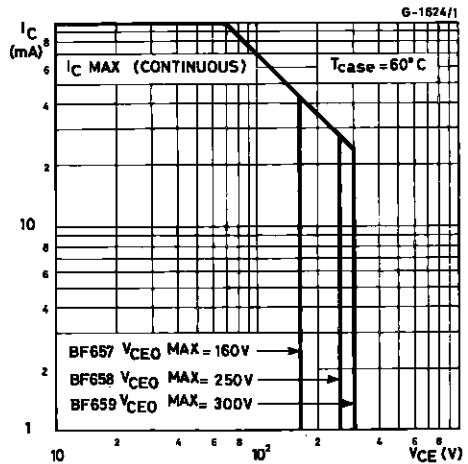
Collector-base and Reverse Capacitances.



Transition Frequency.

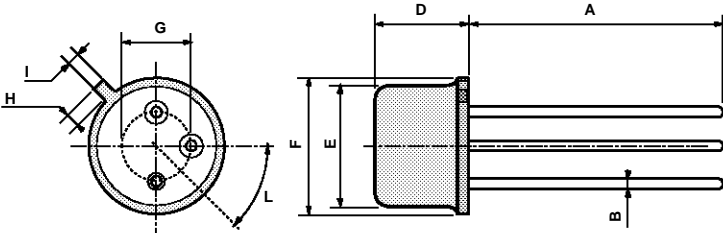


Safe Operating Areas.



TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B

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