

MEDIUM POWER VIDEO AMPLIFIERS

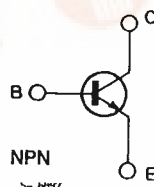
DESCRIPTION

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 $\leq 20^{\circ}\text{C/W}$).



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

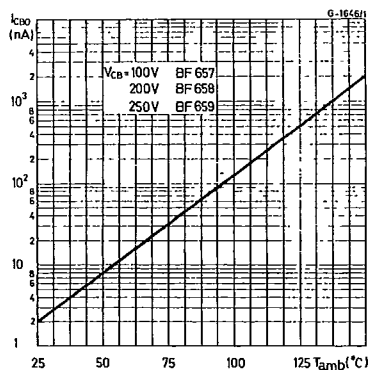
Symbol	Parameter	Value			Unit
		BF657	BF658	BF659	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	160	250	300	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	160	250	300	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5			V
I_C	Collector Current	100			mA
I_{CM}	Collector Peak Current	200			mA
P_{tot}	Total Power 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			$^{\circ}\text{C}$

SGS-THOMSON

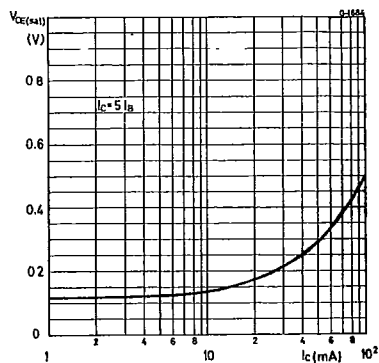
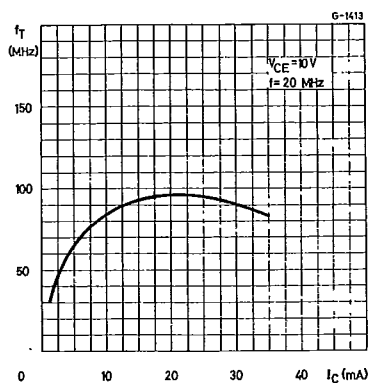
T-33-05

Collector Cutoff Current.

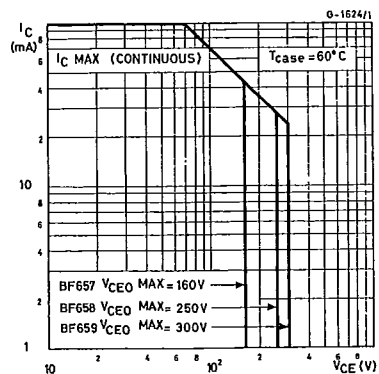
Collector-base and Reverse Capacitances.



Transition Frequency.



Safe Operating Areas.



Thermal Data

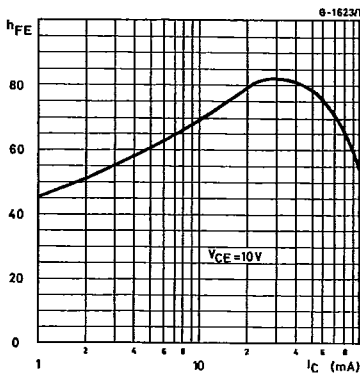
$R_{th \text{ j-case}}$	Thermal Resistance Junction-case	Max	20	°C/W
$R_{th \text{ j-amb}}$	Thermal Resistance Junction-ambient	Max	175	°C/W

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 BF657 $V_{CB} = 100 V$ for BF658 $V_{CB} = 200 V$ for BF659 $V_{CB} = 250 V$			50 50 50	nA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 100 \mu A$ for BF657 for BF658 for BF659	160 250 300			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = 10 mA$ for BF657 for BF658 for BF659	160 250 300			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 μs , duty cycle = 1 %.

DC Current Gain.



Collector-emitter Saturation Voltage.

