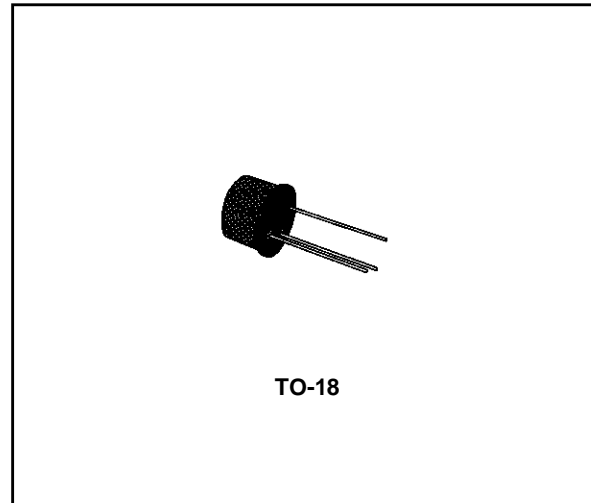


**HIGH VOLTAGE AMPLIFIER**

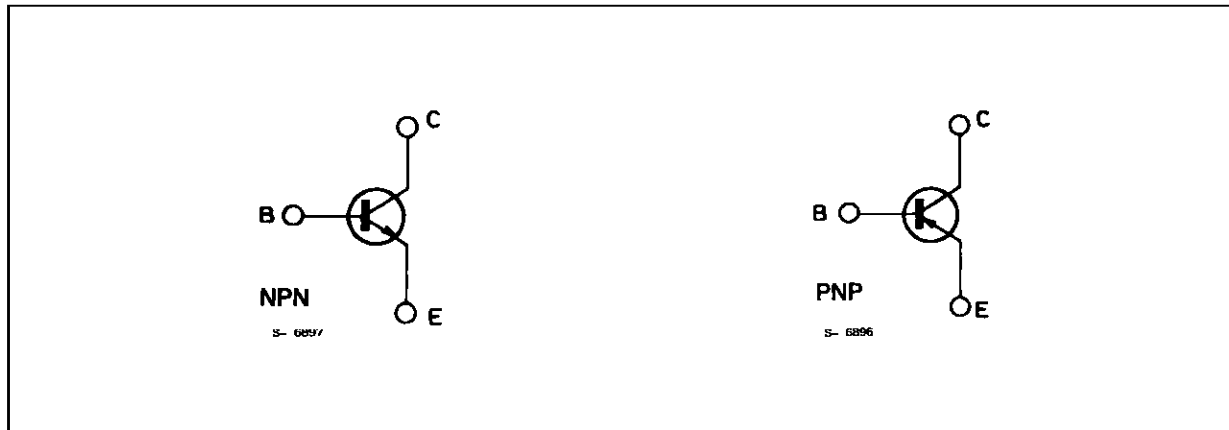
**DESCRIPTION**

The BC394 is a silicon planar epitaxial NPN transistor in Jedec TO-18 metal case, designed for general purpose high-voltage and video amplifier applications.

The complementary PNP type is the BC393.



**INTERNAL SCHEMATIC DIAGRAM**



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	180	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	180	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	6	V
$I_C$	Collector Current	100	mA
$P_{tot}$	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	0.4	W
		1.4	W
$T_{stg}$	Storage Temperature	- 55 to 200	$^\circ\text{C}$
$T_j$	Junction Temperature	200	$^\circ\text{C}$

# BC394

## THERMAL DATA

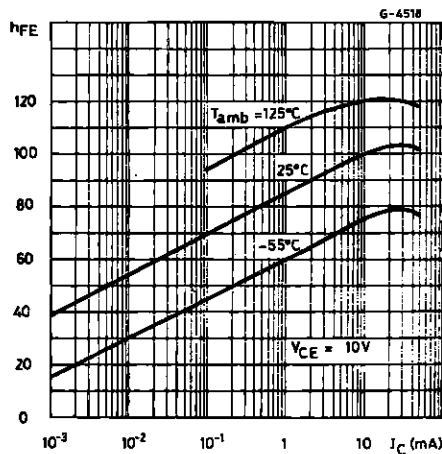
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	125	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	440	$^{\circ}C/W$

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

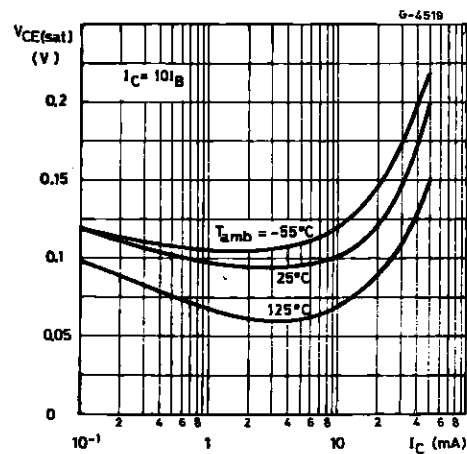
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CB} = 100\ V$ $V_{CB} = 100\ V$ $T_{amb} = 150^{\circ}C$			50 50	nA $\mu A$
$V_{(BR)\ CBO}$	Collector-base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100\ \mu A$	180			V
$V_{(BR)\ CEO}^*$	Collector-emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = 10\ mA$	180			V
$V_{(BR)\ EBO}$	Emitter-base Breakdown Voltage ( $I_C = 0$ )	$I_E = 100\ \mu A$	6			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 10\ mA$ $I_B = 1\ mA$ $I_C = 50\ mA$ $I_B = 5\ mA$		200 400	300	mV mV
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 10\ mA$ $I_B = 1\ mA$ $I_C = 50\ mA$ $I_B = 5\ mA$		750 850	900	mV mV
$h_{FE}^*$	DC Current Gain	$I_C = 1\ mA$ $V_{CE} = 10\ V$ $I_C = 10\ mA$ $V_{CE} = 10\ V$	30	85 100		
$f_T$	Transition frequency	$I_C = 10\ mA$ $V_{CE} = 10\ V$	50	95		MHz
$C_{CBO}$	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10\ V$ $f = 1\ MHz$		5		pF

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

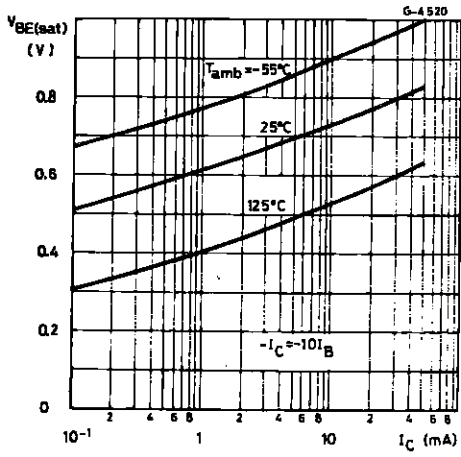
### DC Current.



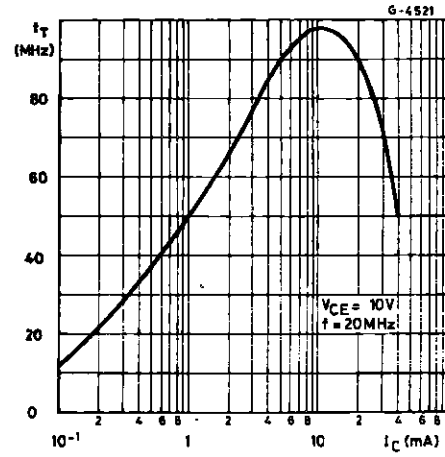
### Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.

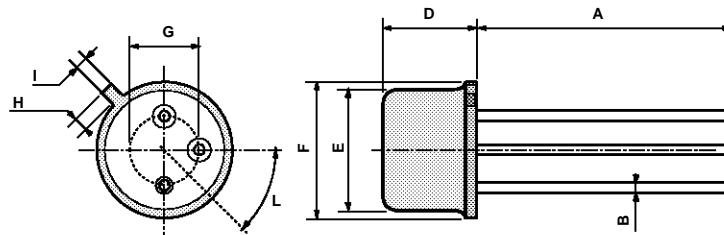


Transition Frequency.



**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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