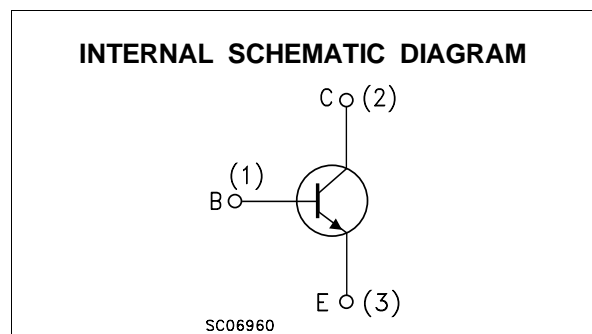
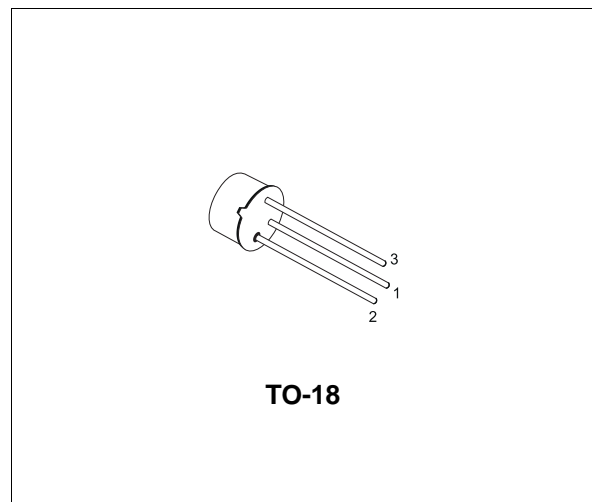


**EPITAXIAL PLANAR NPN**
**■ HIGH VOLTAGE AMPLIFIER**
**DESCRIPTION**

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.


**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 Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_C \leq 25\text{ }^\circ\text{C}$	0.4	W
		1.4	W
$T_{stg}$	Storage Temperature	-55 to 175	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	175	$^\circ\text{C}$

## BC394

### THERMAL DATA

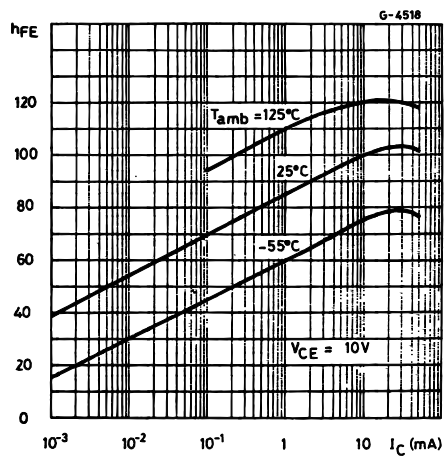
R <sub>thj-case</sub>	Thermal Resistance Junction-Case	Max	107.1	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-Ambient	Max	375	°C/W

### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

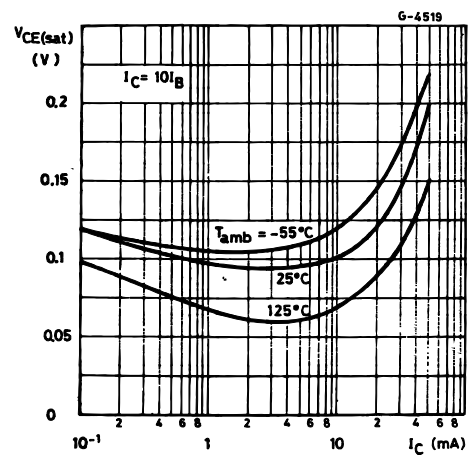
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 100 V V <sub>CB</sub> = 100 V      T <sub>C</sub> = 150 °C			50 50	nA μA
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>E</sub> = 0)	I <sub>C</sub> = 100 μA	180			V
V <sub>(BR)CEO*</sub>	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 10 mA	180			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = 100 μA	6			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10 mA      I <sub>B</sub> = 1 mA I <sub>C</sub> = 50 mA      I <sub>B</sub> = 5 mA		0.2 0.4	0.3	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 10 mA      I <sub>B</sub> = 1 mA I <sub>C</sub> = 50 mA      I <sub>B</sub> = 5 mA		0.75 0.85	0.9	V V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 1 mA      V <sub>CE</sub> = 10 V I <sub>C</sub> = 10 mA      V <sub>CE</sub> = 10 V	30	85 100		
C <sub>CBO</sub>	Collector-Base Capacitance	I <sub>E</sub> = 0      V <sub>CB</sub> = 10 V      f = 1 MHz		5		pF

\* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 1 %

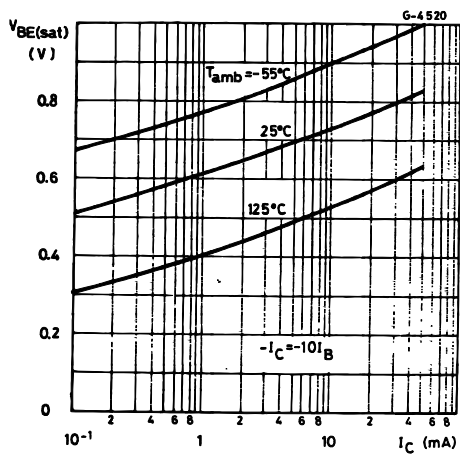
DC Current Gain



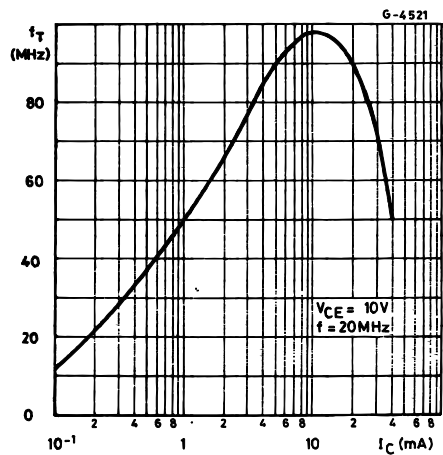
Collector Emitter Saturation Voltage



Base Emitter Saturation Voltage

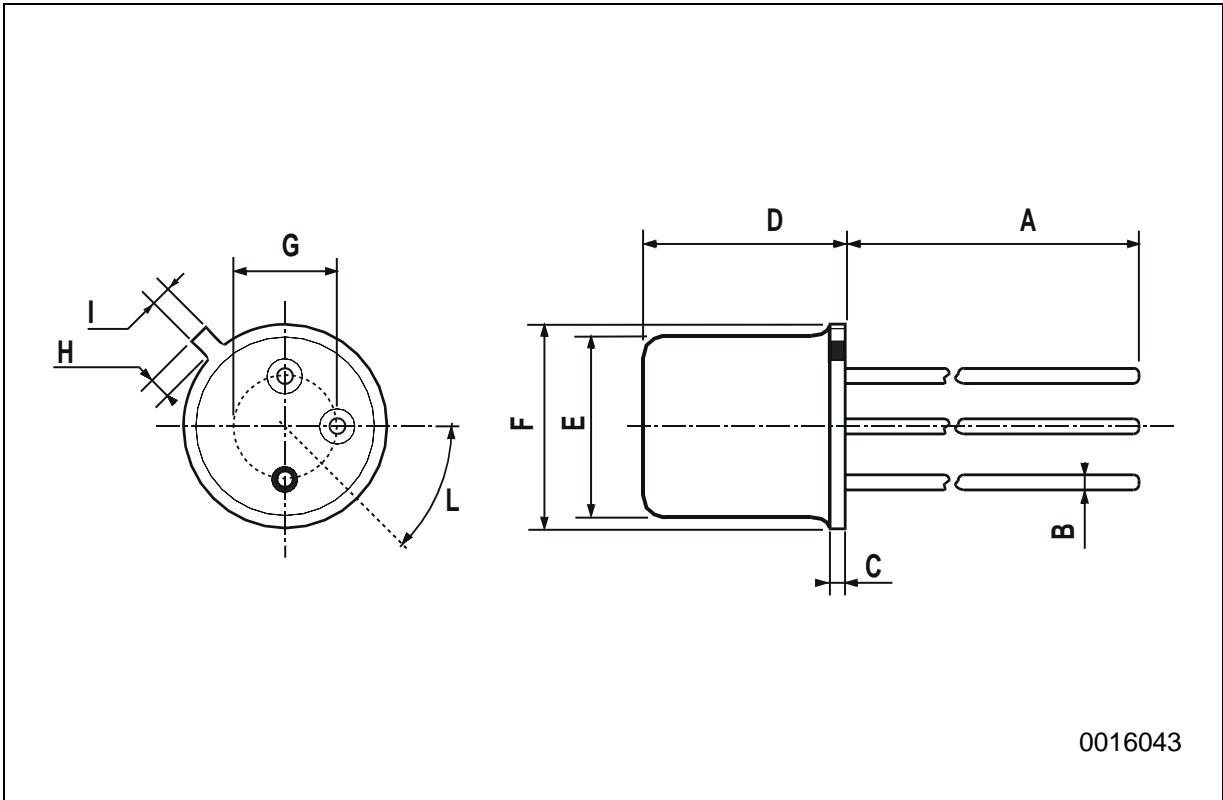


Transition Frequency



**TO-18 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45°			45°		



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