SGS-THOMSON MICROELECTRONICS

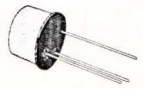
BC393

HIGH VOLTAGE AMPLIFIER

DESCRIPTION

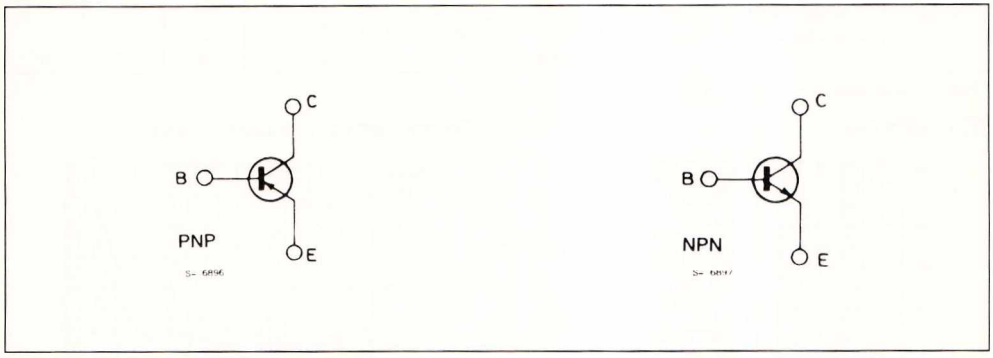
The BC393 is a silicon planar epitaxial PNP transistor in Jedec TO-18 metal case, designed for general purpose high-voltage and video amplifier applications.

The complementary NPN type is the BC394.



TO-18

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 $T_{amb} \leq 25$ °C at $T_{case} \leq 25$ °C	0.4 1.4	W W
T_{stg}	Storage Temperature	– 55 to 200	°C
T_j	Junction Temperature	200	°C

THERMAL DATA

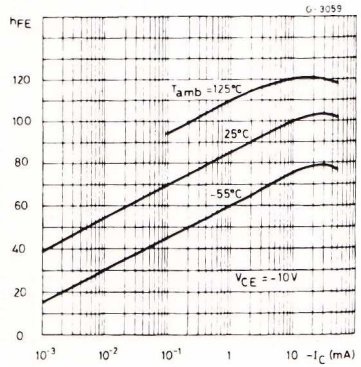
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	125	°C/W
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max	440	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C unless otherwise specified)

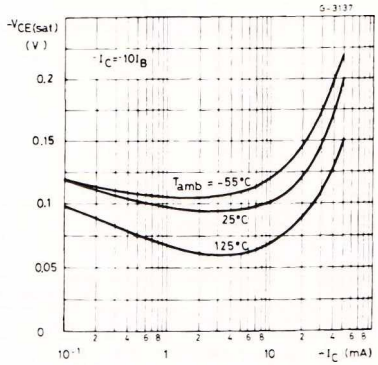
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = – 100 V V_{CB} = – 100 V T_{amb} = 150 °C			50 50	nA µA
$V_{(BR)\ CBO}$	Collector-base Breakdown Voltage (I_E = 0)	I_C = – 10 µA	– 180			V
$V_{(BR)\ CEO}$*	Collector-emitter Breakdown Voltage (I_B = 0)	I_C = – 2 mA	– 180			V
$V_{(BR)\ EBO}$	Emiter-base Breakdown Voltage (I_C = 0)	I_E = – 10 µA	– 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		– 100 – 230	– 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 Curent Gain	I_C = – 1 mA V_{CE} = – 10 V I_C = – 10 mA V_{CE} = – 10 V	 50	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		4	7	pF

* Pulsed : pulse duration = 300 µs. duty cycle = 1 %.

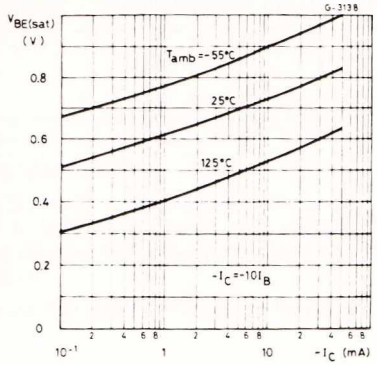
DC Current Gain.



Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.



Transition Frequency.