BC393

PNP

BC394

NPN

CASE 22-03, STYLE 1
TO-18 (TO-206AA)

HIGH VOLTAGE TRANSISTOR

4

MAXIMUM RATINGS

Rating	Symbol	BC 393	BC 394	Unit
Collector-Emitter Voltage	V_{CEO}	180	180	Vdc
Collector-Base Voltage	V_{CBO}	180	180	Vdc
Emitter-Base Voltage	V_{EBO}	6	6	Vdc
Collector Current – Continuous	I_C	0.5		Amp
Total Device Dissipation @T_A = 25°C Derate above 25°C	P_D	0.4 2.66		Watt mW/°C
Total Device Dissipation @T_C = 25°C T_C = 100°C Derate above 25°C	P_D	1.5 10.0		Watt mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	°C/W

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C = 10 mA, I_B = 0)	$V_{(BR)CEO}$	180			Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	$V_{(BR)CBO}$	180			Vdc
Emitter-Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)	$V_{(BR)EBO}$	6			Vdc
Collector Cutoff Current (V_{CB} = 100 V, I_E = 0)	I_{CBO}			50	nA
Collector-Emitter Cutoff (V_{CE} = 100 V, I_B = 0) (T_{Amb} = 150°C)	I_{CEO}			50	μA
ON CHARACTERISTICS(1)					
DC Current Gain (I_C = 10 mA, V_{CE} = 10 V)	h_{FE}	50	100		
Collector-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1 mAdc)	$V_{CE(sat)}$		0.15	0.3	Vdc
Base-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1 mAdc)	$V_{BE(sat)}$		0.7	0.9	Vdc
DYNAMIC CHARACTERISTICS					
Current Gain Bandwidth Product (I_C = 20 mAdc, V_{CE} = 20 Vdc, f = 20 MHz)	f_T	50	110	200	MHz
Output Capacitance (I_E = 0, V_{CB} = 20 Vdc, f = 1 MHz)	C_{obo}	—	3.5	7	pF
Input Capacitance (I_C = 0, V_{EB} = 0.5 Vdc, f = 1 MHz)	C_{ib}	—	75	—	pF
Turn-On Time (I_{B1} = 10 mA, I_C = 50 mAdc, V_{CC} = 100 Vdc))	t_{on}	—	100	—	ns
Turn-Off Time (I_{B2} = 10 mAdc, I_C = 50 mAdc, V_{CC} = 100 Vdc))	t_{off}	—	400	—	ns

* Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.