P039

(CECC 50002-170)
CASE 79, STYLE 1
TO-39 (TO-205AD)

HIGH VOLTAGE TRANSISTOR

NPN SILICON

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Refer to 2N3439 for graphs.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	300	Vdc
Collector-Base Voltage	V_{CBO}	300	Vdc
Emitter-Base Voltage	V_{EBO}	5	Vdc
Collector Current – Continuous	I_C	0.5	Adc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.6 4.0	Watt mW/°C
Total Device Dissipation T_A = 25°C Derate above 25°C	P_D	5.0 28.6	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200	°C

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage(1) (I_C = 10 mA, I_B = 0)	$V_{CEO(sus)}$	300		V
Collector-Emitter Cutoff Current (V_{CE} = 240 V)	I_{CEO}		10	µA
Collector-Base Cutoff Current (V_{CB} = 240 V) (V_{CB} = 240 V, T_{Amb} = 100°C)	I_{CBO}		500 5	nA µA
Emitter-Base Cutoff Current (V_{EB} = 3 V)	I_{EBO}		1	µA
ON CHARACTERISTICS				
Static Forward Current Transfer(1) (I_C = 100 mA, V_{CE} = 1 V) (I_C = 1.0 mA, V_{CE} = 1 V) (I_C = 25 mA, V_{CE} = 1 V)	h_{FE}	25 30 30	150 200	
Collector-Emitter Saturation Voltage(1) (I_C = 200 mA, I_B = 20 mA) (I_C = 25 mA, I_B = 1.25 mA)	$V_{CE(sat)}$		3.0 0.2	V
Base-Emitter Saturation Voltage(1) (I_C = 25 mA, I_B = 1.25 mA)	$V_{BE(sat)}$		0.9	V
SMALL SIGNAL CHARACTERISTICS				
Transition Frequency (I_C = 50 mA, V_{CB} = 10 V, f = 5 MHz)	f_T	10		MHz
Output Capacitance (V_{CB} = 10 V, f = 1 mHz)	C_{obo}		25	pF

(1) Pulsed: Pulse Duration = 300 µs, Duty Cycle = 1%.