CV10440

(CECC 50004-087)
CASE 22-03, STYLE 1
TO-18 (TO-206AA)

AMPLIFIER TRANSISTOR

NPN SILICON

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MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	45	Vdc
Collector-Base Voltage	V_{CBO}	45	Vdc
Emitter-Base Voltage	V_{EBO}	5	Vdc
Collector Current – Continuous	I_C	250	mAmp
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.3 2.0	Watt mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +175	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	500	°C/W

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (I_C = 10 mA, I_B = 0)	$V_{CEO(sus}$	45		Vdc
Collector Cutoff Current (Emitter Open) (V_{CB} = 30 V, I_B = 0) (V_{CB} = 30 V, I_B = 0, T_A = 100°C)	I_{CBO}		100 15	nA µA
Emitter Cutoff Current (V_{EB} = 5 V, I_C = 0)	I_{EBO}		500	nA
ON CHARACTERISTICS				
Base-Emitter Saturation Voltage (I_C = 10 mA, I_B = 1 mA) (I_C = 50 mA, I_B = 2.5 mA)	$V_{BE(sat)}$		0.9 1.6	Vdc Vdc
DC Current Gain (I_C = 10 µA, V_{CE} = 0.4 V) (I_C = 1 mA, V_{CE} = 0.4 V) (I_C = 10 mA, V_{CE} = 0.4 V)	h_{fe}	40 175 225	 500 550	
Collector-Emitter Saturation Voltage (I_C = 10 mA, I_B = 1 mA)	$V_{CE(sat)}$		0.3	Vdc
SMALL SIGNAL CHARACTERISTICS				
Current Gain Bandwidth Product (I_C = 10 mA, V_{CE} = 5 V, f = 35 MHz)	f_T	200		MHz
Output Capacitance (V_{CB} = 5 V, I_E = 0, f = 1 MHz)	C_{ob}		B	pF
SWITCHING CHARACTERISTICS				
Storage Time (See Figure 1) (V_{CC} = 4 V, V_{BB} = 15 V, I_C = 10 mA, I_{B1} = I_{B2} = 1 mA)	t_s		750	ns

FIGURE 1 – SWITCHING TIME TEST CIRCUIT