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## NTE2347 Silicon NPN Transistor General Purpose, Medium Power

### **Description:**

The NTE2347 is a silicon NPN transistor in a TO39 type package designed for use in high current, fast switching applications and for power amplifiers.

### **Absolute Maximum Ratings:**

Collector–Base Voltage ( $I_E = 0$ ), $V_{CBO}$ .....	150V
Collector–Emitter Voltage ( $I_B = 0$ ), $V_{CEO}$ .....	80V
Emitter–Base Voltage ( $I_C = 0$ ), $V_{EBO}$ .....	6V
Collector Current, $I_C$ .....	5A
Total Power Dissipation, $P_{tot}$	
$T_A \leq +25^\circ\text{C}$ .....	1W
$T_C \leq +25^\circ\text{C}$ .....	7W
$T_C \leq +100^\circ\text{C}$ .....	4W
Junction Temperature, $T_J$ .....	+200°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +200°C
Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	25°C/W
Thermal Resistance, Junction–to–Ambient, $R_{thJA}$ .....	175°C/W

### **Electrical Characteristics:** ( $T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CES}$	$V_{CE} = 150\text{V}, V_{BE} = 0$	–	–	1	mA
		$V_{CE} = 100\text{V}, V_{BE} = 0$	–	–	1	μA
		$V_{CE} = 100\text{V}, V_{BE} = 0, T_C = +150^\circ\text{C}$	–	–	100	μA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 6\text{V}, I_C = 0$	–	–	1	mA
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 50\text{mA}, I_B = 0$ , Note 1	80	–	–	V
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 500\text{mA}$ , Note 1	–	–	1	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 5\text{A}, I_B = 500\text{mA}$ , Note 1	–	–	1.6	V
DC Current Gain	$h_{FE}$	$I_C = 2\text{A}, V_{CE} = 2\text{V}$ , Note 1	40	–	120	
		$I_C = 2\text{A}, V_{CE} = 2\text{V}, T_C = -55^\circ\text{C}$ , Note 1	15	–	–	
Transition Frequency	$f_T$	$I_C = 500\text{mA}, V_{CE} = 5\text{V}$	50	–	–	MHz
Collector–Base Capacitance	$C_{CBO}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	–	–	80	pF
Turn–On Time	$t_{on}$	$V_{CC} = 20\text{V}, I_C = 500\text{mA}, I_{B1} = 500\text{mA}$	–	–	0.35	μs
Storage Time	$t_s$	$V_{CC} = 20\text{V}, I_C = 5\text{A}, I_{B1} = -I_{B2} = 500\text{mA}$	–	–	0.35	μs
Fall Time	$t_f$		–	–	0.3	μs

Note 1. Pulse Test: Pulse Duration = 300μs, Duty Cycle = 1.5%.

