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NTE2646

Silicon NPN Transistor

General Purpose Amplifier, Switch

Surface Mount

Features:

- Low Current
- Low Voltage

Applications:

- General Purpose Switching and Amplification

Absolute Maximum Ratings:

Collector–Base Voltage (Open Emitter), V_{CB0}	80V
Collector–Emitter Voltage (Open Base), V_{CEO}	65V
Emitter–Base Voltage (Open Collector), V_{EBO}	6V
DC Collector Current, I_C	
Continuous	100mA
Peak	200mA
Peak Base Current, I_{BM}	200mA
Total Power Dissipation ($T_A = +25^\circ\text{C}$, Note 1), P_{tot}	200mW
Junction Temperature, T_J	+150°C
Operating Ambient Temperature Range, T_A	–65° to +150°C
Storage Temperature Range, T_{stg}	–65° to +150°C
Thermal Resistance, Junction–to–Ambient (In free air, Note 1), R_{thJA}	625K/W

Note 1. Transistor mounted on a FR4 printed–circuit board.

Electrical Characteristics: ($T_A = +25$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Cut–Off Current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$	–	–	15	nA
		$V_{CB} = 30\text{V}, I_E = 0, T_J = +150^\circ\text{C}$	–	–	5	μA
Emitter–Base Cut–Off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	–	–	100	nA
DC Current Gain	h_{FE}	$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$	–	150	–	
		$I_C = 2\text{mA}, V_{CE} = 5\text{V}$	200	290	450	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$	–	90	250	mV
		$I_C = 10\text{mA}, I_B = 5\text{mA}, \text{Note 2}$	–	200	600	mV
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$	–	700	–	mV
		$I_C = 10\text{mA}, I_B = 5\text{mA}, \text{Note 2}$	–	900	–	mV

Note 2. Pulse Test: $t_p \leq 300\mu\text{s}, \delta \leq 0.02$.

Electrical Characteristics (Cont'd): ($T_A = +25$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Base-Emitter Voltage	V_{BE}	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$	580	660	700	mV
		$I_C = 10\text{mA}, V_{CE} = 5\text{V}$	-	-	770	mV
Collector Capacitance	C_C	$V_{CB} = 5\text{V}, I_C = I_E = 0, f = 1\text{MHz}$	-	-	3	pF
Transition Frequency	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	100	-	-	MHz
Noise Figure	F	$I_C = 200\mu\text{A}, V_{CE} = 5\text{V}, R_S = 2\text{k}\Omega, f = 1\text{kHz}, B = 200\text{Hz}$	-	-	10	dB

