

NTE2410
Silicon NPN Transistor
High Voltage Amp/Driver
(Comp to NTE2411)

Description:

The NTE2410 is a silicon NPN transistor in an SOT-23 type surface mount case designed for use in high voltage applications.

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	160V
Collector-Base Voltage, V_{CBO}	180V
Emitter-Base Voltage, V_{EBO}	6V
Continuous Collector Current, I_C	600mA
Total Power Dissipation ($T_A = +25^\circ\text{C}$, FR-5 Board, Note 1), P_D	225mW
Derate Above 25°C	1.8mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient, R_{thJA}	556 $^\circ\text{C}/\text{mW}$
Total Power Dissipation ($T_A = +25^\circ\text{C}$, Alumina Substrate, Note 2), P_D	300mW
Derate Above 25°C	2.4mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient, R_{thJA}	417 $^\circ\text{C}/\text{mW}$
Operating Junction Temperature Range, T_J	-55 $^\circ$ to +150 $^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55 $^\circ$ to +150 $^\circ\text{C}$

Note 1. FR-5 = 1.000 (25.4mm) x .750 (19.05mm) x .062 (1.57mm).

Note 2. Alumina = .400 (10.2mm) x .300 (7.62mm) x .024 (.609mm), 99.5% alumina.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}$, $I_B = 0$, Note 3	160	-	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}$, $I_E = 0$	180	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}$, $I_C = 0$	6	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 120\text{V}$, $I_E = 0$	-	-	50	nA
		$V_{CB} = 120\text{V}$, $I_E = 0$, $T_A = +100^\circ\text{C}$	-	-	50	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}$, $I_C = 0$	-	-	50	nA

Note 3. Pulse Test: Pulse Width = 300 μs , Duty Cycle = 2%.

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 3)						
DC Current Gain	h_{FE}	$I_C = 1\text{mA}, V_{CE} = 5\text{V}$	80	–	–	
		$I_C = 10\text{mA}, V_{CE} = 5\text{V}$	80	–	250	
		$I_C = 50\text{mA}, V_{CE} = 5\text{V}$	30	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	–	–	0.15	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	–	–	0.20	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	–	–	1.0	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	–	–	1.0	V

Note 3. Pulse Test: Pulse Width = $300\mu\text{s}$, Duty Cycle = 2%.

