



NTE2411 Silicon PNP Transistor High Voltage Amp/Driver (Compl to NTE2410)

Description:

The NTE2411 is a silicon PNP transistor in an SOT-23 type surface mount case designed for use in high voltage applications.

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	150V
Collector-Base Voltage, V_{CBO}	160V
Emitter-Base Voltage, V_{EBO}	5V
Continuous Collector Current, I_C	500mA
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° to $+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$

Note 1. FR-5 = 1.0 x 0.75 x 0.62 in.

Note 2. Alumina = 0.4 x 0.3 x 0.024 in. 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	$V_{(BR)CEO}$	$I_C = 1\text{mA}$, $I_B = 0$	150	—	—	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}$, $I_E = 0$	160	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}$, $I_C = 0$	5	—	—	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100\text{V}$, $I_E = 0$	—	—	50	nA
		$V_{CB} = 100\text{V}$, $I_E = 0$, $T_A = +100^\circ\text{C}$	—	—	50	μA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 1\text{mA}, V_{CE} = 5\text{V}$	50	–	–	
		$I_C = 10\text{mA}, V_{CE} = 5\text{V}$	60	–	240	
		$I_C = 50\text{mA}, V_{CE} = 5\text{V}$	50	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	–	–	1.0	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	–	–	1.0	V
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
Small–Signal Characteristics						
Current Gain–Bandwidth Product	f_T	$I_C = 10\text{mA}, V_{CE} = 10\text{V}, f = 100\text{MHz}$	100	–	300	MHz
Output Capacitance	C_{obo}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	–	–	6	pF
Small Signal Current gain	h_{fe}	$I_C = 1\text{mA}, V_{CE} = 10\text{V}, f = 1\text{kHz}$	40	–	200	
Noise Figure	NF	$I_C = 200\mu\text{A}, V_{CE} = 5\text{V}, R_S = 10\Omega, f = 10\text{Hz to } 15.7\text{kHz}$	–	–	8	dB

