ELECTRONICS, INC.
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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°C, FR–5 Board, Note 1), P_D 225mW
Derate Above 25°C . . . . . 1.8mW/°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 556°C/mW
Total Power Dissipation (T_A = +25°C, Alumina Substrate, Note 2), P_D 300mW
Derate Above 25°C . . . . . 2.4mW/°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 417°C/mW
Operating Junction Temperature Range, T_J . . . . . –55° to +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°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°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	150	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	160	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	5	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 100V, I_E = 0	–	–	50	nA
		V_{CB} = 100V, I_E = 0, T_A = +100°C	–	–	50	μA

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

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

