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NTE232
Silicon PNP Transistor
Darlington Amplifier, Preamp

Description:
The NTE232 is a silicon, planar, epitaxial passivated PNP Darlington transistor in a TO92 type package designed for preamplifier input applications where high impedance is a requirement.

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector–Emitter Voltage, V_{CES} 30V
Emitter–Base Voltage, V_{EBO} 8V
Collector–Base Voltage, V_{CBO} 30V
Collector Current, I_C 300mA
Total Power Dissipation (T_A = +25°C), P_T 625mW
Derate above +25°C . . . . . 5mW/°C
Total Power Dissipation (T_C = +25°C), P_T 1500mW
Derate above +25°C . . . . . 12mW/°C
Operating Junction Temperature range, T_J . . . . . –55° to +150°C
Storage Temperature range, T_{stg} . . . . . –55° to +150°C
Lead Temperature (During Soldering, 1/16” ±1/32” from case, 10sec), T_L . . . . . +230°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C = 100μA, I_B = 0	30	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 30V, I_E = 0	–	–	100	nA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 8V, I_C = 0	–	–	100	nA
Forward Current Transfer Ratio	h_{FE}	I_C = 10mA, V_{CE} = 5V	50k	–	–	
		I_C = 100mA, V_{CE} = 5V	20k	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 0.1mA	–	0.9	1.5	V
Base–Emitter ON Voltage	$V_{BE(on)}$	I_C = 100mA, V_{CE} = 5V, Note 1	–	1.45	2.00	V

Note 1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	I_C = 30mA, V_{CE} = 10V, f = 50MHz	100	125	–	MHz
Output Capacitance	C_{cb}	I_{CB} = 10mA, I_E = 0, f = 100MHz	–	2.5	–	pF
Noise Figure	NF	I_C = 1mA, V_{CE} = 5V, R_S = 100kΩ, f = 1kHz	–	2	–	dB

