



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089

NTE172A Silicon NPN Transistor Darlington Preamp, Medium Speed Switch

Description:

The NTE172A is a silicon NPN Darlington transistor in a TO92 type case designed for preamplifier input stages requiring input impedances of several megohms or extremely low level, high gain, low noise amplifier applications.

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Collector–Base Voltage, V_{CBO}	40V
Collector–Emitter Voltage, V_{CEO}	40V
Emitter–Base Voltage, V_{EBO}	12V
Collector Current, I_C	
Continuous	300mA
Pulsed (Note 1)	500mA
Base Current, I_B	50mA
Total Power Dissipation ($T_A = +25^\circ\text{C}$), P_D	400mW
Derate Above 25°C	4mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+125^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$
Lead Temperature (During Soldering, 1/16" \pm 1/32" from case for 10sec max.), T_L	$+260^\circ\text{C}$

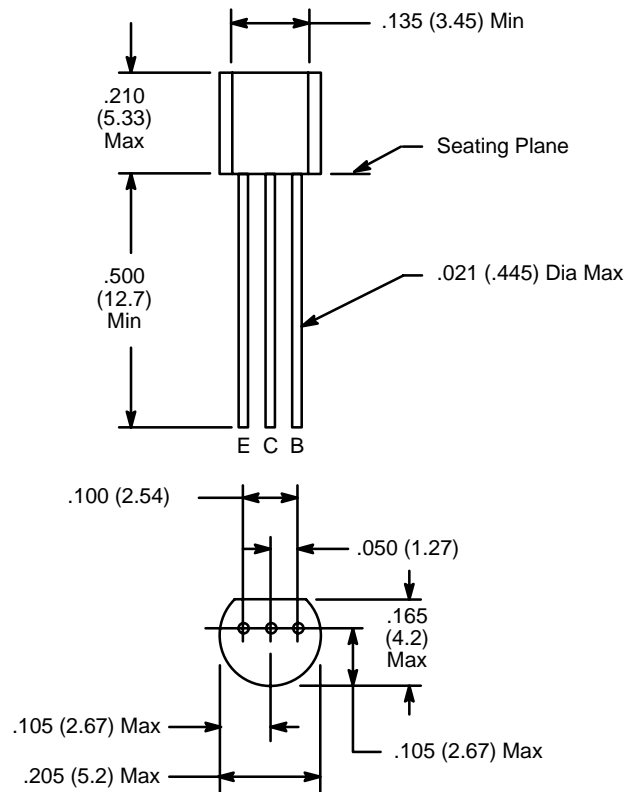
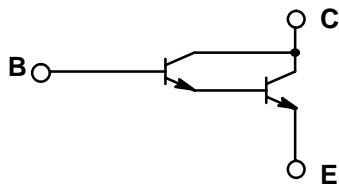
Note 1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 0.1\mu\text{A}, I_E = 0$	40	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	40	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 0.1\mu\text{A}, I_C = 0$	12	–	–	V
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	7000	–	70000	
		$V_{CE} = 5\text{V}, I_C = 100\text{mA}$	20000	–	–	
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40\text{V}, I_E = 0$	–	–	100	nA
		$V_{CB} = 40\text{V}, I_E = 0, T_A = +100^\circ\text{C}$	–	–	20	μA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics (Cont'd)						
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 12\text{V}, I_C = 0$	–	–	100	nA
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 200\text{mA}, I_B = 0.2\text{mA}$	–	–	1.4	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 200\text{mA}, I_B = 0.2\text{mA}$	–	–	1.6	V
Base–Emitter Voltage	V_{BE}	$V_{CE} = 5\text{V}, I_C = 200\text{mA}$	–	–	1.5	V
Dynamic Characteristics						
Small–Signal Current Gain	h_{fe}	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, f = 1\text{kHz}$	7000	–	–	
Current Gain–High Frequency	$ h_{fe} $	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, f = 1\text{kHz}$	15.6	–	–	dB
Current Gain–Bandwidth Product	f_T	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, f = 10\text{MHz}$	60	–	–	MHz
Input Impedance	h_{ie}	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, f = 1\text{kHz}$	–	650	–	$k\Omega$
Collector–Base Capacitance	C_{cb}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	–	7.6	10.0	pF
Emitter Capacitance	C_{eb}	$V_{EB} = 0.5\text{V}, f = 1\text{MHz}$	–	10.5	–	pF
Noise Voltage	e_n	$I_C = 0.6\text{mA}, V_{CE} = 5\text{V}, R_G = 160k\Omega, f = 10\text{Hz to } 10\text{kHz}, \text{B.W.} = 15.7\text{kHz}$	–	195	230	$nV/\sqrt{\text{Hz}}$



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Darlington Transistors](#) category:

Click to view products by [NTE manufacturer](#):

Other Similar products are found below :

[281287X](#) [SMMBT6427LT1G](#) [2N7371](#) [BDV64B](#) [JANTXV2N6287](#) [028710A](#) [SMMBTA64LT1G](#) [2N6350](#) [2SB1214-TL-E](#)
[SMMBTA14LT1G](#) [SBSP52T1G](#) [NJVMJD117T4G](#) [Jantx2N6058](#) [2N6353](#) [LB1205-L-E](#) [500-00005](#) [2N6053](#) [NJVMJD112G](#) [Jan2N6350](#)
[Jantx2N6352](#) [Jantx2N6350](#) [BULN2803LVS](#) [ULN2001N](#) [2SB1383](#) [2SB1560](#) [2SB852KT146B](#) [TIP112TU](#) [TIP122TU](#) [BCV27](#) [MMBTA13-](#)
[TP](#) [MMBTA14-TP](#) [MMSTA28T146](#) [BSP50H6327XTSA1](#) [KSH122TF](#) [NTE2557](#) [NJVNJD35N04T4G](#) [TIP115](#) [MPSA29-D26Z](#) [MJD127T4](#)
[FJB102TM](#) [BCV26E6327HTSA1](#) [BCV46E6327HTSA1](#) [BCV47E6327HTSA1](#) [BSP61H6327XTSA1](#) [BU941ZPFI](#) [2SB1316TL](#) [2SD1980TL](#)
[NTE2350](#) [NTE245](#) [NTE246](#)