

NTE2334 Silicon NPN Transistor Darlington Driver ^w/Internal Damper and Zener Diode

Description:

The NTE2334 is a silicon Darlington NPN Driver with an internal damper and zener diode in a TO220 type package designed for use in applications such as the switching of the L load of a motor driver, hammer driver, relay driver, etc.

Features:

- High DC Current Gain
- Large Current Capacity and Wide ASO
- Contains 60 ±10V Avalanche Diode between Collector and Base
- High 50mJ Reverse Energy Rating

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

Collector to Base Voltage, V_{CBO}	60 ±10V
Collector to Emitter Voltage, V_{CEO}	60 ±10V
Emitter to Base Voltage, V_{EBO}	6V
Collector Current, I_C	
Continuous	5A
Peak	8A
Base Current, I_B	500mA
Collector Power Dissipation ($T_C = +25^\circ\text{C}$), P_C	40W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	-55° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{BE} = 40V, I_E = 0$	–	–	100	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V, I_C = 0$	–	–	3	mA
DC Current Gain	h_{FE}	$V_{CE} = 3V, I_C = 2.5A$	1000	4000	–	
Gain Bandwidth Product	f_T	$V_{CE} = 5V, I_C = 2.5A$	–	20	–	MHz

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2.5\text{A}, I_B = 5\text{mA}$	–	0.9	1.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2.5\text{A}, I_B = 5\text{mA}$	–	–	2.0	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 5\text{mA}, I_E = 0$	50	60	70	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50\text{mA}, R_{BE} = \infty$	50	60	70	V
Unclamped Inductive Load Energy	$E_{s/b}$	$L = 100\text{mH}, R_{BE} = 100\Omega$	50	–	–	mJ
Turn–On Time	t_{on}	$V_{CC} = 20\text{V}, I_C = 3\text{A},$ $I_{B1} = -I_{B2} = 6\text{mA}$	–	0.6	–	μs
Storage Time	t_{stg}		–	4.0	–	μs
Fall Time	t_f		–	1.5	–	μs

