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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°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°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°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°C unless otherwise specified)

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