

NTE2336 Silicon NPN Transistor Darlington Switch ^w/Internal Damper & Zener Diode

Features:

- 60V Zener Diode Built-In Between Collector and Base
- Low Fluctuation in Breakdown Voltages
- High Energy Handling Capability
- High Speed Switching

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

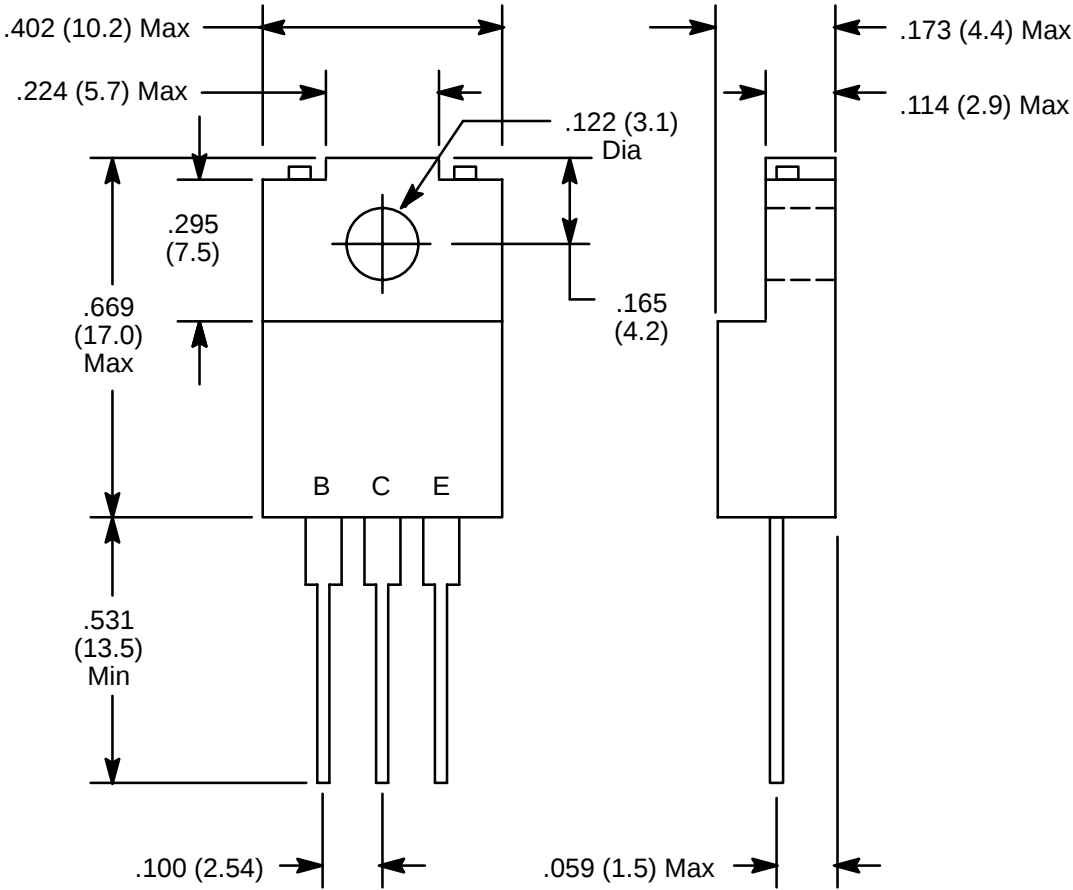
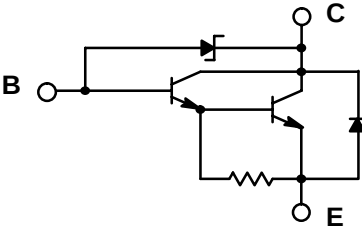
Collector–Base Voltage, V_{CBO}	60 $\pm$ 10V
Collector–Emitter Voltage, V_{CEO}	60 $\pm$ 10V
Emitter–Base Voltage, V_{EBO}	7V
Collector Current, I_C	
Continuous	8A
Peak	12A
Collector Power Dissipation ($T_C = +25^\circ\text{C}$), P_C	45W
Collector Power Dissipation ($T_A = +25^\circ\text{C}$), P_C	2W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	–55° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$	–	–	100	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 7\text{V}, I_C = 0$	–	–	2	mA
Collector–Emitter Voltage	V_{CEO}	$I_C = 5\text{mA}, I_B = 0$	50	–	70	V
DC Current Gain	h_{FE}	$V_{CE} = 3\text{V}, I_C = 4\text{A}$	2000	–	5000	
		$V_{CE} = 3\text{V}, I_C = 8\text{A}$	500	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4\text{A}, I_B = 8\text{mA}$	–	–	1.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4\text{A}, I_B = 8\text{mA}$	–	–	2.0	V
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 500\text{mA}, f = 1\text{MHz}$	–	20	–	MHz

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Time	t_{on}	$V_{CC} = 50\text{V}, I_C = 4\text{A},$ $I_{B1} = 8\text{mA}, I_{B2} = -8\text{mA}$	—	0.5	—	μs
Storage Time	t_{stg}		—	4	—	μs
Fall Time	t_f		—	1	—	μs
Energy Handling Capacity	$E_{s/b}$	$I_C = 1\text{A}, L = 100\text{mH}, R_{BE} = 100\Omega$	50	—	—	mJ



NOTE: Tab is isolated