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NTE2341(NPN) & NTE2342 (PNP) Silicon Complementary Transistors Darlington Driver

Description:

The NTE2341 (NPN) and NTE2342 (PNP) are silicon complementary Darlington transistors in a TO92 type package designed for general purpose, low frequency applications and as relay drivers.

Absolute Maximum Ratings:

Collector–Base Voltage, V_{CBO}	100V
Collector–Emitter Voltage, V_{CEO}	80V
Emitter–Base Voltage, V_{EBO}	5V
DC Collector Current, I_C	1A
Total Power Dissipation, P_{tot}	
$T_A = +25^\circ C$	800mW
$T_A = +25^\circ C$, Note 1	1W
Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	–65° to +150°C
Maximum Thermal Resistance, Junction–to–Ambient, R_{thJA}	156K/W
Note 1	125K/W

Note 1. Mounted on a PC Board, max lead length 4mm, mounting pad for collector lead min 10mm x 10mm.

Electrical Characteristics: ($T_J = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50mA, I_B = 0$	80	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu A, I_B = 0$	100	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu A, I_C = 0$	5	–	–	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 40V, I_B = 0$	–	–	500	nA
	I_{CBO}	$V_{CB} = 100V, I_E = 0$	–	–	100	nA
Emitter Cutoff Current	I_{EBO}	$V_{CE} = 4V, I_C = 0$	–	–	100	nA
DC Current Gain	h_{FE}	$I_C = 150mA, V_{CE} = 10V$	1000	–	–	
		$I_C = 500mA, V_{CE} = 10V$	2000	–	–	

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	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 0.5\text{mA}$	–	–	1.3	V
		$I_C = 1\text{A}, I_B = 1\text{mA}$	–	–	1.8	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 1\text{mA}, \text{Note 3}$	–	–	2.2	V
Transition Frequency	f_T	$I_C = 500\text{mA}, V_{CE} = 5\text{V}, f = 100\text{MHz}$	–	200	–	MHz

