



ELECTRONICS, INC.

44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748-5089
<http://www.nteinc.com>

NTE2317 Silicon NPN Transistor High Voltage Fast Switching Power Darlington

Description:

The NTE2317 is a multiepitaxial bipolar NPN transistor in a monolithic Darlington configuration mounted in a TO218 type package designed for use in automotive ignition applications and inverter circuits for motor controls. Controlled performances in the linear region make this device particularly suitable for car ignitions where current limiting is achieved desaturating the darlington.

Features:

- High Performance Electronic Ignition Darlington
- High Ruggedness

Applications:

- Automotive Market

Absolute Maximum Ratings:

Collector–Emitter Voltage ($V_{BE} = 0$), V_{CES}	500V
Collector–Emitter Voltage ($I_B = 0$), V_{CEO}	450V
Emitter–Base Voltage ($I_C = 0$), V_{EBO}	5V
Collector Current, I_C	
Continuous	15A
Peak ($t_p \leq 10ms$)	30A
Base Current, I_B	
Continuous	1A
Peak ($t_p \leq 10ms$)	5A
Total Power Dissipation ($T_C \leq +25^\circ C$), P_{tot}	125W
Maximum Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	-40° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC}	1°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100\text{mA}$, Note 1	450	–	–	V
Collector Cutoff Current	I_{CES}	$T_J = +25^\circ\text{C}$	–	–	1	mA
		$T_J = +125^\circ\text{C}$	–	–	5	mA
	I_{CEO}	$V_{CE} = 450\text{V}$, $I_B = 0$	–	–	1	mA
Emitter Cutoff Current	I_{EBO}	$I_C = 0$, $V_{EB} = 5\text{V}$	–	–	50	mA
ON Characteristics (Note 1)						
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 8\text{A}$, $I_B = 150\text{mA}$	–	1.09	1.8	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 8\text{A}$, $I_B = 150\text{mA}$	–	1.77	2.2	V
DC Current Gain	h_{FE}	$I_C = 5\text{A}$, $V_{CE} = 10\text{V}$	300	–	–	
Diode Forward Voltage	V_F	$I_F = 10\text{A}$	–	1.43	2.8	V
Switching Characteristics (Switching Times on Inductive Load)						
Storage Time	t_s	$V_{CC} = 12\text{V}$, $V_{BE} = 0$, $L_B = 7\text{mH}$, $I_C = 7\text{A}$, $I_B = 70\text{mA}$, $R_{BE} = 47\Omega$, $V_{clamp} = 300\text{V}$	–	15	–	μs
Fall Time	t_f		–	0.5	–	μs

Note 1. Pulse Test: Pulse Width = $300\mu\text{s}$, Duty Cycle = 1.5%.

