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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 desaturing 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 ($t_p \le 10$ms) 30A
Base Current, I_B
  Continuous 1A
  Peak ($t_p \le 10$ms) 5A
Total Power Dissipation ($T_C \le +25°C$), 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°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	I_C = 100mA, Note 1	450	–	–	V
Collector Cutoff Current	I_{CES}	T_J = +25°C, V_{CE} = 500V, V_{BE} = 0	–	–	1	mA
		T_J = +125°C, V_{CE} = 500V, V_{BE} = 0	–	–	5	mA
	I_{CEO}	V_{CE} = 450V, I_B = 0	–	–	1	mA
Emitter Cutoff Current	I_{EBO}	I_C = 0, V_{EB} = 5V	–	–	50	mA
ON Characteristics (Note 1)						
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 8A, I_B = 150mA	–	1.09	1.8	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 8A, I_B = 150mA	–	1.77	2.2	V
DC Current Gain	h_{FE}	I_C = 5A, V_{CE} = 10V	300	–	–	
Diode Forward Voltage	V_F	I_F = 10A	–	1.43	2.8	V
Switching Characteristics (Switching Times on Inductive Load)						
Storage Time	t_s	V_{CC} = 12V, V_{BE} = 0, L_B = 7mH, I_C = 7A, I_B = 70mA, R_{BE} = 47Ω, V_{clamp}= 300V	–	15	–	µs
Fall Time	t_f		–	0.5	–	µs

Note 1. Pulse Test: Pulse Width = 300µs, Duty Cycle = 1.5%.