ELECTRONICS, INC.
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NTE2318
Silicon NPN Transistor
High Voltage, High Speed Switch

Description:

The NTE2318 is a high–voltage, high–speed, switching NPN transistor with an internal damper diode in a TO218 type package. This device is specifically designed for use in large screen color deflection circuits.

Features:

- Collector–Emitter Voltage: V_{CE} = 1500V
- Collector–Emitter Sustaining Voltage: $V_{CEO(sus)}$ = 700V
- Switching Time with Inductive Loads: t_f = 0.5μs (Typ) @ I_C = 4.5A
- Internal Flyback Diode

Absolute Maximum Ratings:

Collector–Emitter Voltage, $V_{CEO(sus)}$ 700V
Collector–Emitter Voltage, V_{CES} 1500V
Emitter–Base Voltage, V_{EB} 5V
Collector Current, I_C
  Continuous 8A
  Peak (Note 1) 15A
Base Current, I_B
  Continuous 4A
  Peak (Note 1) 6A
Total Power Dissipation (T_C = +25°C), P_D 125W
  Derate Above 25°C . . . . . 1W/°C
Operating Temperature Range, T_J . . . . . –65° to +150°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1°C/W
Maximum Lead Temperature (During Soldering, 1/8" from case, 5sec), T_L . . . . . +275°C

Note 1. Pulse Test: Pulse Width = 5ms, Duty Cycle ≤ 10%.

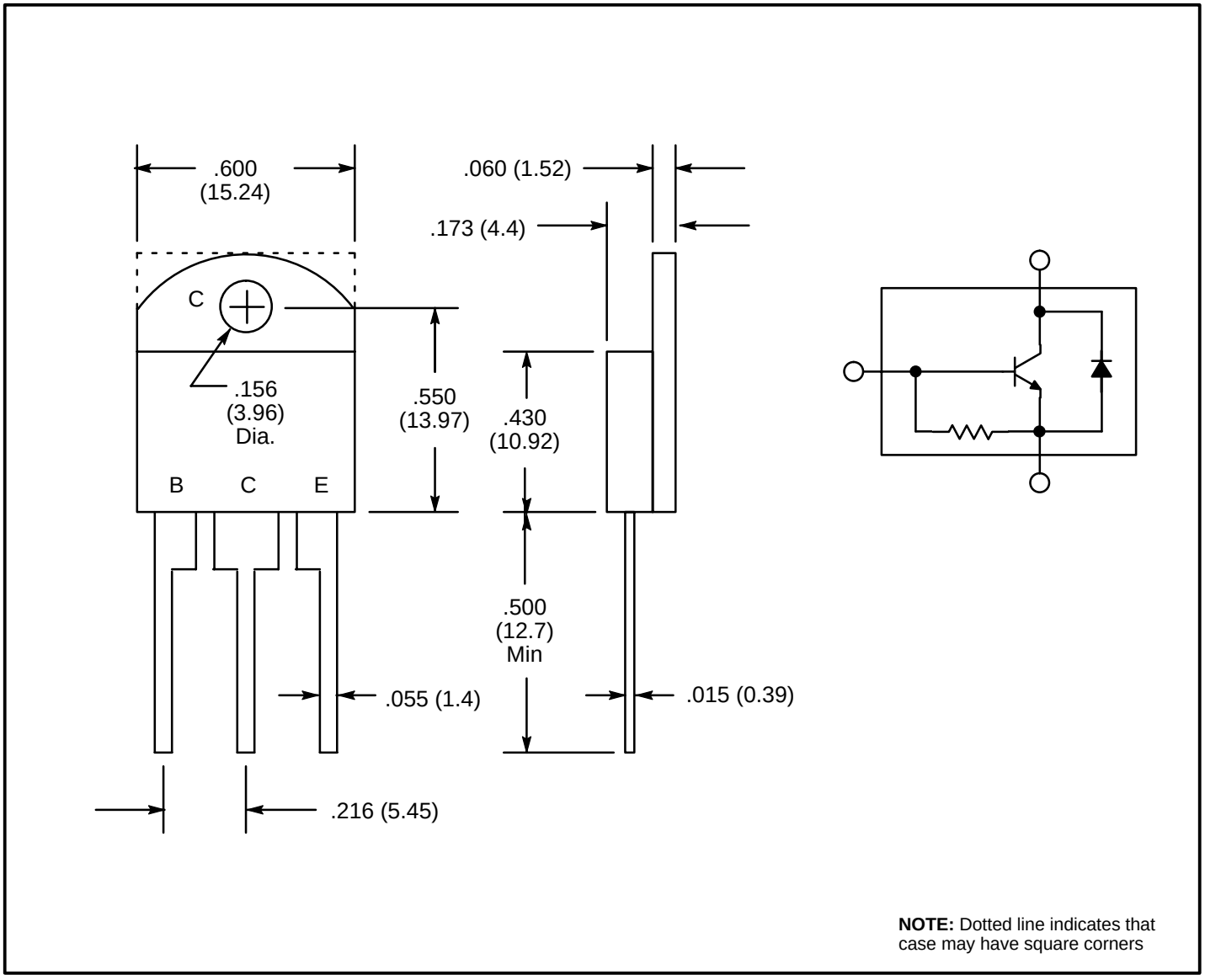
Electrical Characteristics: (T_C = +25°C, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics (Note 1)						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	I_C = 100mA, I_B = 0	700	–	–	V
Collector Cutoff Current	I_{CES}	V_{CE} = 1500V, V_{BE} = 0	–	–	0.1	mA
		V_{CE} = 1500V, V_{BE} = 0, T_C = +125°C	–	–	2.0	mA
Emitter–Base Leakage Current	I_{EBO}	V_{EB} = 6V, I_C = 0	–	–	300	mA

Electrical Characteristics (Cont'd): (T_C = +25°C, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	I_C = 4.5A, V_{CE} = 5V	2.25	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 4.5A, I_B = 2A	–	–	1	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 4.5A, I_B = 2A	–	–	1.3	V
Dynamic Characteristics						
Current–Gain Bandwidth Product	f_T	I_C = 0.1A, V_{CE} = 5V, f = 1MHz	–	7	–	MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 0.1MHz	–	125	–	pF
Switching Characteristics						
Storage Time	t_s	I_C = 4.5A, I_B = 1.8A, L_B = 10µH	–	8.0	–	µs
Fall Time	t_f		–	0.5	–	µs

Note 1. Pulse Test: Pulse Width = 5ms, Duty Cycle ≤ 10%.



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