ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE2315
Silicon NPN Transistor
Fast Switching Power Darlington

Description:

The NTE2315 is a silicon epitaxial planer NPN power Darlington transistor in a TO220 type package with an integrated base–emitter speed–up diode designed for use in high voltage, high current, fast switching applications. In particular, the NTE2315 can be used in horizontal output stages of 110° CRT video displays and is primarily intended for large screen displays.

Absolute Maximum Ratings:

Collector–Base Voltage (I_E = 0), V_{CBO} 400V
Collector–Emitter Voltage (V_{BE} = –6V), V_{CEV} 400V
Collector–Emitter Voltage (I_B = 0), V_{CEO} 200V
Emitter–Base Voltage (I_C = 0), V_{EBO} 6V
Collector Current, I_C
Continuous 8A
Peak 15A
Base Current, I_B 2A
Damper Diode Peak Forward Current, I_{DM} 10A
Total Power Dissipation ($T_C \le +25°C$), P_{tot} 60W
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperatuere Range, T_{stg} . . . . . –65° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2.08°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 70°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CES}	V_{CE} = 400V, V_{BE} = 0	–	–	100	µA
	I_{CEV}	V_{CE} = 400V, V_{BE} = –6V	–	–	100	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 6V, I_C = 0	–	–	3	mA
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	I_C = 100mA, I_B = 0, Note 1	200	–	–	V
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 5A, I_B = 50mA, Note 1	–	–	–1.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 5A, I_B = 50mA, Note 1	–	–	2.0	V
DC Current Gain	h_{FE}	I_C = 3A, V_{CE} = 5V	–	3500	–	

Note 1. Pulse test: Pulse Duration = 300µs, Duty Cycle = 1.5%.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Damper Diode Forward Voltage	V_F	I_F = 4A, Note 1	–	–	2	V
Turn–Off Time	t_{off}	I_C = 5A, I_{B1} = 50mA	–	0.4	1.0	µs
Resistive Load						
Turn–On Time	t_{on}	I_C = 5A, I_{B1} = 50mA, I_{B2} = –500mA, V_{CC} = 100V	–	0.35	–	µs
Storage Time	t_s		–	0.55	–	µs
Fall Time	t_f		–	0.20	–	µs

Note 1. Pulse test: Pulse Duration = 300µs, Duty Cycle = 1.5%.