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NTE163A
Silicon NPN Transistor
Horizontal Deflection

Description:

The NTE163A is an NPN silicon transistor in a TO3 type case designed for use in large screen color deflection circuits.

Features:

- Collector–Emitter Voltage: V_{CEX} = 1500V
- Collector–Emitter Sustaining Voltage: $V_{CEO(sus)}$ = 700V
- Switching Times With Inductive Loads: t_f = 0.4μs (Typ) @ I_C = 4.5A

Absolute Maximum Ratings:

Collector–Emitter Voltage, $V_{CEO(sus)}$ 700V

Collector–Emitter Voltage, V_{CEX} 1500V

Emitter–Base Voltage, V_{EB} 5V

Collector Current, I_C

Continuous 5A

Peak (Note 1) 7.5A

Peak Base Current, I_B 4A

Total Device Dissipation (T_C = +95°C), P_D 12.5W

Derate Above 95°C . . . . . 0.625W/°C

Operating Junction Temperature Range, T_J . . . . . –65° to +115°C

Storage Temperature Range, T_{stg} . . . . . –65° to +115°C

Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1.6°C/W

Maximum Lead Temperature (For Soldering, 1/8” from case for 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 2)						
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	–	–	1.0	mA
Emitter–Base Voltage	V_{EBO}	I_E = 10mA, I_C = 0	5	–	–	V
ON Characteristics (Note 2)						
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	–	–	5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 4.5A, I_B = 2A	–	–	1.5	V
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	I_C = 100mA, V_{CE} = 5V, f = 1MHz	–	4	–	MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	–	125	–	pF
Switching Characteristics						
Fall Time	t_f	I_C = 4.5A, I_B = 1.8A, L_B = 10µH	–	0.6	–	µs

Note 2. Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2%

