

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: $t_f = 0.4\mu s$ (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 ($T_C = +95^\circ C$), P_D	12.5W
Derate Above $95^\circ C$	0.625W/ $^\circ C$
Operating Junction Temperature Range, T_J	-65° to $+115^\circ C$
Storage Temperature Range, T_{stg}	-65° to $+115^\circ C$
Thermal Resistance, Junction–to–Case, R_{thJC}	1.6 $^\circ C/W$
Maximum Lead Temperature (For Soldering, 1/8" from case for 5sec), T_L	$+275^\circ C$

Note 1. Pulse Test: Pulse Width = 5ms, Duty Cycle $\leq 10\%$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics (Note 2)						
Collector–Emitter Sustaining Voltage	$V_{CE(sus)}$	$I_C = 100\text{mA}$, $I_B = 0$	700	–	–	V
Collector Cutoff Current	I_{CES}	$V_{CE} = 1500\text{V}$, $V_{BE} = 0$	–	–	1.0	mA
Emitter–Base Voltage	V_{EBO}	$I_E = 10\text{mA}$, $I_C = 0$	5	–	–	V
ON Characteristics (Note 2)						
DC Current Gain	h_{FE}	$I_C = 4.5\text{A}$, $V_{CE} = 5\text{V}$	2.25	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4.5\text{A}$, $I_B = 2\text{A}$	–	–	5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4.5\text{A}$, $I_B = 2\text{A}$	–	–	1.5	V
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	$I_C = 100\text{mA}$, $V_{CE} = 5\text{V}$, $f = 1\text{MHz}$	–	4	–	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$	–	125	–	pF
Switching Characteristics						
Fall Time	t_f	$I_C = 4.5\text{A}$, $I_B = 1.8\text{A}$, $L_B = 10\mu\text{H}$	–	0.6	–	μs

Note 2. Pulse Test: Pulse Width = 300 μ s, Duty Cycle $\leq$ 2%

