



NTE165 Silicon NPN Transistor TV Horizontal Output

Description:

The NTE165 is a silicon NPN transistor in a TO3 type package designed for use in color TV horizontal output applications.

Features:

- High Voltage
- High Power
- High Switching Speed
- Good Stability

Applications:

- Consumer
- Power Supply
- Color TV Horizontal Deflection

Absolute Maximum Ratings:

Collector–Emitter Voltage ($V_{BE} = 0$), V_{CES}	1500V
Collector–Emitter Voltage ($I_B = 0$), V_{CEO}	700V
Emitter–Base Voltage ($I_C = 0$), V_{EB}	10V
Collector Current, I_C	
Continuous	8A
Peak ($t_p < 5ms$)	15A
Total Device Dissipation ($T_C = +25^\circ C$), P_{tot}	150W
Maximum Operating Junction Temperature, T_J	$+175^\circ C$
Storage Temperature Range, T_{stg}	-65° to $+175^\circ C$
Maximum Thermal Resistance, Junction–to–Case, R_{thJC}	$1.0^\circ C/W$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CES}	$V_{CE} = 1500V$, $V_{BE} = 0$	–	–	1.0	mA
		$V_{CE} = 1500V$, $V_{BE} = 0$, $T_C = +125^\circ C$	–	–	2.0	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V$, $I_C = 0$	–	–	100	μA
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100mA$	700	–	–	V
Emitter–Base Voltage	V_{EBO}	$I_E = 10mA$, $I_C = 0$	10	–	–	V

Note 1. Pulse test: Pulse Width = $300\mu s$, Duty Cycle $\leq 2\%$.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4.5\text{A}$, $I_B = 2\text{A}$, Note 1	–	–	1.0	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4.5\text{A}$, $I_B = 2\text{A}$, Note 1	–	–	1.3	V
Current Gain–Bandwidth Product	f_T	$V_{CE} = 5\text{V}$, $I_C = 100\text{mA}$, $f = 5\text{MHz}$	–	7	–	MHz
Switching Characteristics (Inductive Load)						
Storage Time	t_s	$V_{CC} = 140\text{V}$, $I_C = 4.5\text{A}$, $h_{FE} = 2.5$, $L_C = 0.9\text{mH}$, $L_B = 3\mu\text{H}$	–	7.0	–	μs
Fall Time	t_f		–	0.55	–	μs

Note 1. Pulse test: Pulse Width = $300\mu\text{s}$, Duty Cycle $\leq 2\%$.

