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## 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:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Collector–Emitter Voltage, $V_{CES}$ .....	1500V
Emitter–Base Voltage, $V_{EBO}$ .....	5V
Collector Current, $I_C$	
Continuous .....	5A
Peak .....	7.5A
Base Current (Peak), $I_{BM}$ .....	4A
Total Power Dissipation ( $T_C \leq +95^\circ\text{C}$ ), $P_{tot}$ .....	12.5W
Maximum Operating Junction Temperature, $T_J$ .....	$+115^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+115^\circ\text{C}$
Maximum Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	$1.6^\circ\text{C/W}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CES}$	$V_{CE} = 1500\text{V}, V_{BE} = 0$	–	–	1.0	mA
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	5	–	–	V
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 4.5\text{A}$	2.25	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4.5\text{A}, I_B = 2\text{A}$	–	–	5	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4.5\text{A}, I_B = 2\text{A}$	-	-	1.5	V
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100\text{mA}, I_B = 0, L = 25\text{mH}$	700	-	-	V
Emitter-Base Voltage	$V_{EBO}$	$I_E = 10\text{mA}, I_C = 0$	10	-	-	V
Transition Frequency	$f_T$	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$	-	7	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	125	-	pF
<b>Switching Characteristics</b>						
Storage Time	$t_s$	$I_C = 4.5\text{A (Peak)}, I_{B(end)} = 1.8\text{A}$	-	0.7	-	$\mu\text{s}$
Fall Time	$t_f$	$I_C = 4.5\text{A (Peak)}, I_{B(end)} = 1.8\text{A}$	-	10	-	$\mu\text{s}$

