



**ELECTRONICS, INC.**  
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## NTE2508 (NPN) & NTE2509 (PNP) Silicon Complementary Transistors Video Output for HDTV

**Features:**

- High Gain Bandwidth Product:  $f_T = 500\text{MHz}$
- High Breakdown Voltage:  $V_{CEO} = 120\text{V Min}$
- Low Reverse Transfer Capacitance and Excellent HF Response

**Applications:**

- High-Definition CRT Display Video Output
- Wide-Band Amp

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

Collector to Base Voltage, $V_{CBO}$ .....	120V
Collector to Emitter Voltage, $V_{CEO}$ .....	120V
Emitter to Base Voltage, $V_{EBO}$ .....	3V
Collector Current, $I_C$	
Continuous .....	300mA
Peak .....	600mA
Collector Dissipation, $P_C$	
$T_A = +25^\circ\text{C}$ .....	1.3W
$T_C = +25^\circ\text{C}$ .....	8W
Operating Junction Temperature, $T_J$ .....	$+150^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-55^\circ$ to $+150^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 80\text{V}, I_E = 0$	-	-	0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 2\text{V}, I_C = 0$	-	-	0.1	$\mu\text{A}$
DC Current Gain	h <sub>FE</sub>	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$	40	-	320	
		$V_{CE} = 10\text{V}, I_C = 200\text{mA}$	20	-	-	
Gain Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$	-	400	-	MHz

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Capacitance NTE2508	$C_{ob}$	$V_{CB} = 30\text{V}, f = 1\text{MHz}$	–	3.1	–	pF
NTE2509			–	4.4	–	pF
Reverse Transfer Capacitance NTE2508	$C_{re}$	$V_{CB} = 30\text{V}, f = 1\text{MHz}$	–	2.7	–	pF
NTE2509			–	4.0	–	pF
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$	–	–	1.0	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$	–	–	1.0	V

