

## NTE89 Silicon NPN Transistor Color TV Horizontal Output w/Internal Damper Diode

**Features:**

- Color TV Horizontal Output Applications
- High Voltage:  $V_{CBO} = 1500V$
- Low Saturation Voltage:  $V_{CE(sat)} = 5V$  Max ( $I_C = 5A, I_B = 1A$ )
- High Speed:  $t_f = 1.0\mu s$  Max
- Built-In Damper Diode
- Glass Passivated Collector-Base Junction

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

Collector-Base Voltage, $V_{CBO}$ .....	1500V
Collector-Emitter Voltage, $V_{CEO}$ .....	600V
Emitter-Base Voltage, $V_{EBO}$ .....	5V
Continuous Collector Current, $I_C$ .....	6A
Emitter Current, $I_E$ .....	-6A
Collector Power Dissipation ( $T_C = +25^\circ C$ ), $P_C$ .....	50W
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 500V, I_E = 0$	-	-	10	$\mu A$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 200mA, I_C = 0$	5	-	-	V
DC Current Gain	$h_{FE}$	$V_{CE} = 5V, I_C = 1A$	8	12	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5A, I_B = 1A$	-	3	5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 5A, I_B = 1A$	-	-	1.5	V
Forward Voltage (Damper Diode)	$-V_F$	$I_F = 6A$	-	1.6	2.0	V
Transition Frequency	$f_T$	$V_{CE} = 10V, I_C = 100mA$	-	3	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$	-	165	-	pF
Fall Time	$t_f$	$I_{CP} = 5A, I_{B1(end)} = 1A$	-	0.5	1.0	$\mu s$

