



**ELECTRONICS, INC.**  
44 FARRAND STREET  
BLOOMFIELD, NJ 07003  
(973) 748-5089

## **NTE94** **Silicon NPN Transistor** **High Voltage Switch**

### **Description:**

The NTE94 is a silicon NPN transistor in a TO3 type case designed for medium to high voltage inverters, converters, regulators, and switching circuits.

### **Features:**

- High Collector–Emitter Voltage:  $V_{CEO} = 300V$
- DC Current Gain Specified at 1A and 2.5A
- Low Collector–Emitter Saturation Voltage:  $V_{CE(sat)} = 0.8V @ 1A$

### **Absolute Maximum Ratings:**

Collector–Emitter Voltage, $V_{CEO}$ .....	300V
Collector–Base Voltage, $V_{CB}$ .....	300V
Emitter–Base Voltage, $V_{EB}$ .....	5V
Collector Current, $I_C$	
Continuous .....	5A
Peak .....	10A
Base Current, $I_B$ .....	2A
Total Device Dissipation ( $T_C = +75^\circ C$ ), $P_D$ .....	100W
Derate Above $75^\circ C$ .....	1.33W/ $^\circ C$
Operating Junction Temperature Range, $T_J$ .....	$-65^\circ$ to $+150^\circ C$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+200^\circ C$
Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	0.75 $^\circ C/W$

**Electrical Characteristics:** ( $T_C = +75^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100\text{mA}, I_B = 0$	300	–	–	V
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = 300\text{V}, I_B = 0$	–	–	0.25	mA
	$I_{CEX}$	$V_{CE} = 300\text{V}, V_{EB(off)} = 1.5\text{V}, T_C = +125^\circ\text{C}$	–	–	0.5	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$	–	–	5	mA
<b>ON Characteristics</b>						
DC Current Gain	$h_{FE}$	$I_C = 1\text{A}, V_{CE} = 5\text{V}$	30	–	90	
		$I_C = 2.5\text{A}, V_{CE} = 5\text{V}$	10	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 0.1\text{A}$	–	–	0.8	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 0.1\text{A}$	–	–	1.2	V
<b>Dynamic Characteristics</b>						
Current Gain–Bandwidth Product	$f_T$	$I_C = 200\text{mA}, V_{CE} = 10\text{V}, f = 1\text{MHz}$	2.5	–	–	MHz

