

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° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-65° 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
OFF Characteristics						
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
ON Characteristics						
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
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	$I_C = 200\text{mA}$, $V_{CE} = 10\text{V}$, $f = 1\text{MHz}$	2.5	–	–	MHz

