



ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089  
<http://www.nteinc.com>

## NTE126A

### Germanium Mesa Transistor, PNP, for High-Speed Switching Applications TO-18 Type Package

**Absolute Maximum Ratings:**

Collector-Emitter Voltage, $V_{CE}$ .....	15Vdc
Collector-Base Voltage, $V_{CB}$ .....	25Vdc
Emitter-Base Voltage, $V_{EB}$ .....	3Vdc
Total Device Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_D$ .....	150mW
Derate above $25^\circ\text{C}$ .....	2.0mW/ $^\circ\text{C}$
Total Device Dissipation ( $T_C = +25^\circ\text{C}$ ), $P_D$ .....	300mW
Derate above $25^\circ\text{C}$ .....	4.0mW/ $^\circ\text{C}$
Operating Junction Temperature Range, $T_J$ .....	$-65^\circ$ to $+100^\circ\text{C}$
Storage Junction Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+100^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	25	-	-	V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	3	-	-	V
Collector-Latch-Up Voltage	$LV_{CEX}$	$V_{CC} = 11.5\text{ V}$	11.5	-	-	V
Collector-Emitter Cutoff Current	$I_{CES}$	$V_{CE} = 15\text{V}$	-	-	100	$\mu\text{A}$
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB} = 6\text{V}, I_E = 0$	-	-	3.0	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$I_C = 10\text{mA}, V_{CE} = 0.3\text{V}$	40	-	-	
		$I_C = 50\text{mA}, V_{CE} = 1\text{V}$	40	-	-	
		$I_C = 100\text{mA}, V_{CE} = 1\text{V}$	40	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	-	-	0.18	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	-	-	0.35	
		$I_C = 100\text{mA}, I_B = 10\text{mA}$	-	-	0.60	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	0.30	-	0.50	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$	0.40	-	0.75	
		$I_C = 100\text{mA}, I_B = 10\text{mA}$	0.40	-	1.00	
Current-Gain-Bandwidth Product	$f_T$	$I_E = 20\text{mA}, V_{CB} = 1.0\text{Vdc}, f = 100\text{MHz}$	300	-	-	MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	4.0	pF
Emitter Transition Capacitance	$C_{Te}$	$V_{EB} = 1\text{V}$	-	-	3.5	pF
Turn-On Time	$t_{on}$	$I_C = 10\text{mA}, I_{B1} = 5\text{mA}, V_{BE(off)} = 1.25\text{V}$	-	-	50	ns
		$I_C = 100\text{mA}, I_{B1} = 5\text{mA}, V_{BE(off)} = 1.25\text{V}$	-	-	50	
Turn-Off Time	$t_{off}$	$I_C = 10\text{mA}, I_{B1} = 1\text{mA}, I_{B2} = 0.25\text{mA}$	-	-	85	ns
		$I_C = 100\text{mA}, I_{B1} = 5\text{mA}, I_{B2} = 1.25\text{mA}$	-	-	85	
Total Control Charge	$Q_T$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	-	-	80	pC
		$I_C = 100\text{mA}, I_B = 5\text{mA}$	-	-	125	

