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NTE126

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}	15Vdc
Emitter-Base Voltage, V_{EB}	2.5Vdc
Total Device Dissipation ($T_A = +25^\circ\text{C}$), P_D	150mW
Derate above 25°C	2.0mW/ $^\circ\text{C}$
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	300mW
Derate above 25°C	4.0mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+100^\circ\text{C}$
Storage Junction Temperature Range, T_{stg}	-65° 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}	$I_C = 100\mu\text{A}, I_E = 0$	15	-	-	V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 100\mu\text{A}, I_C = 0$	2.5	-	-	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	μA
Collector-Base Cutoff Current	I_{CBO}	$V_{CB} = 6\text{V}, I_E = 0$	-	-	3.0	μA
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	

