NTE ELECTRONICS, INC.

NTE126

Germanium Mesa Transistor, PNP, for High–Speed Switching Applications

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°C), P_D 150mW
Derate above 25°C . . . . . 2.0mW/°C
Total Device Dissipation (T_C = +25°C), P_D 300mW
Derate above 25°C . . . . . 4.0mW/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +100°C
Storage Junction Temperature Range, T_{stg} . . . . . –65° to +100°C

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Min	Max	Unit
Collector–Base Breakdown Voltage (I_C = 100µAdc, I_E = 0)	BV_{CBO}	15	–	Vdc
Emitter–Base Breakdown Voltage (I_E = 100µAdc, I_C = 0)	BV_{EBO}	2.5	–	Vdc
Collector–Latch–Up Voltage (V_{CC} = 11.5 Vdc)	LV_{CEX}	11.5	–	Vdc
Collector–Emitter Cutoff Current (V_{CE} = 15Vdc)	I_{CES}	–	100	µAdc
Collector–Base Cutoff Current (V_{CB} = 6Vdc, I_E = 0)	I_{CBO}	–	3.0	µAdc
DC Current Gain (I_C = 10mAdc, V_{CE} = 0.3Vdc) (I_C = 50mAdc, V_{CE} = 1Vdc) (I_C = 100mAdc, V_{CE} = 1Vdc)	h_{FE}	 40 40 40	 – – –	–
Collector–Emitter Saturation Voltage (I_C = 10mAdc, I_B = 1mAdc) (I_C = 50mAdc, I_B = 5mAdc) (I_C = 100mAdc, I_B = 10mAdc)	$V_{CE(sat)}$	 – – –	 0.18 0.35 0.60	Vdc

Electrical Characteristics (Cont'd): (T_A = 25°C)

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