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

NTE16007
Silicon NPN Transistor
General Purpose for Medium Power Applications

Description:

The NTE16007 is a silicon NPN diffused–junction power transistor in a TO8 type package intended for a wide variety of applications in industrial and military equipment. This device is particularly useful in power–switching circuits such as in DC–to–DC converters, inverters, choppers, solenoid and relay controls; and as class A and class B push–pull audio and servo amplifiers.

Absolute Maximum Ratings:

Collector–to –Emitter Voltage, V_{CEO} 55V
Collector–to–Base Voltage, V_{CBO} 100V
Emitter–to–Base Voltage, V_{EBO} 12V
Continuous Collector Current, I_C 3A
Total Power Dissipation, P_T
T_A = +25°C 25W
Derate Linearly Above +25°C . . . . . 0.010W/°C
T_C = +25°C 14.1W
Derate Linearly Above +25°C . . . . . 0.143W/°C
Operating Temperature Range, T_{opr} . . . . . –65 to +200°C
Storage Temperature Range, T_{stg} . . . . . –65 to +200°C

Electrical Characteristics:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 100mA	55	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA	100	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEX}$	V_{EB} = 1.5V, I_C = 0.25mA	100	–	–	V
Collector–Base Cutoff Current	I_{CBO}	V_{CB} = 50V	–	–	15	μA
Emitter–Base Cutoff Current	I_{EBO}	V_{EB} = 12V	–	–	15	μA
ON Characteristics (Note 1)						
Forward–Current Transfer Ratio	h_{FE}	V_{CE} = 4V, I_C = 750mA	35	–	100	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 750mA, I_B = 40mA	–	–	0.75	V

Note 1. Pulse Test: Pulse Width = 300μs, Duty Cycle = 2.0%.

Electrical Characteristics (Con't):

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Forward Current Transfer Ratio	f_{hfb}	V_{CB} = 28V, I_C = 5mA	600	–	–	kHz
Output Capacitance	C_{obo}	V_{CB} = 10V, I_E = 0, f = 100kHz to 1MHz	–	–	400	pF
Switching Characteristics						
Turn–On Time	$t_{on} + t_{off}$	V_{CC} = 12V, R_C = 15.9Ω, $I_{B0} = I_{B2}$ = 35mA, I_{B1} = 65mA	–	–	25	μs