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

NTE3222
Optoisolator
NPN Transistor Output

Description:

The NTE3222 is an optically coupled isolator in a 4–Lead DIP type package containing a GaAs light emitting diode and an NPN silicon phototransistor.

Features:

- High Isolation Voltage
- High Collector–Emitter Voltage
- High Speed Switching

Applications:

- Power Supplies
- Telephone/FAX
- FA/FO Equipment
- Programmable Logic Controller

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Diode

Reverse Voltage, V_R 6V
DC Forward Current, I_F 80mA
Power Dissipation (Per Channel) P_D 150mW
Derate Above 25°C . . . . . 1.5mW/°C
Peak Forward Current (Note 1), I_{FP} 1A

Transistor

Collector–Emitter Voltage, V_{CEO} 80V
Emitter–Collector Voltage, V_{ECO} 7V
Collector Current (Per Channel), I_C 50mA
Power Dissipation (Per Channel) P_C 150mW
Derate Above 25°C . . . . . 1.5mW/°C

Total Device

Isolation Voltage (Note 2), BV . . . . . $5000V_{rms}$
Operating Ambient Temperature Range, T_A . . . . . –55° to +100°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Note 1. Pulse width = 100μs, duty cycle = 1%.
Note 2. AC voltage for 1 minute at T_A = +25°C, RH = 60% between input and output.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Diode						
Forward Voltage	V_F	I_F = 10mA	–	1.17	1.40	V
Reverse Current	I_R	V_R = 5V	–	–	5	µA
Terminal capacitance	C_t	V = 0V, f = 1MHz	–	50	–	pF
Transistor						
Collector–Emitter Dark Current	I_{CEO}	V_{CE} = 80V, I_F = 0mA	–	–	100	nA
Coupled						
Current Transfer Ratio (I_C/I_F)	CTR	I_F = 5mA, V_{CE} = 5V	80	300	600	%
Collector Saturation Voltage	$V_{CE(sat)}$	I_F = 10mA, I_C = 2mA	–	–	0.3	V
Isolation Resistance	$R_{I–O}$	$V_{I–O}$ = 1kV_{DC}	10^{11}	–	–	Ω
Isolation Capacitance	$C_{I–O}$	V = 0V, f = 1MHz	–	0.5	–	pF
Rise Time	t_r	V_{CC} = 10V, I_C = 2mA, R_L = 100Ω	–	3	–	µs
Fall Time	t_f		–	5	–	µs

Pin Connection Diagram