ELECTRONICS, INC.
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NTE3040
Optoisolator
NPN Transistor Output

Description:
The NTE3040 is a gallium arsenide, infrared emitting diode in a 6–Lead DIP type package coupled with a silicon phototransistor.

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

Infrared Emitting Diode

Power Dissipation, P_D 200mW
Derate above 25°C ambient . . . . . 2.6mW/°C
Forward Current (Continuous), I_C 60mA
Forward Current (Peak), I_C 3A
(Pulse Width 1μsec, 300pps)
Reverse Voltage, V_R 3V

Phototransistor

Power Dissipation, P_D 200mW
Derate above 25°C ambient . . . . . 2.6mW/°C
Collector to Emitter Voltage, V_{CEO} 30V
Collector to Base Voltage, V_{CBO} 70V
Emitter to Collector Voltage, V_{ECO} 7V
Collector Current (Continuous), I_C 100mA

Total Device

Storage Temperature, T_{stg} . . . . . –55° to +150°C
Operating Temperature, T_{opr} . . . . . –55° to +100°C
Lead Soldering Temperature (10 seconds) . . . . . +260°C
Surge Isolation Voltage (Input to Output)
(Peak) 1500V
(RMS) 1060V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Infrared Emitting Diode						
Forward Voltage	V_F	I_F = 10mA	–	1.1	1.5	V
Reverse Current	I_R	V_R = 3V	–	–	10	mA
Capacitance	C_J	V = 0, f = 1MH$_Z$	–	50	–	pf

Electrical Characteristics (Cont'd): (T_A = +25°C, unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Phototransistor							
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, I_F = 0		30	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100µA, I_F = 0		70	–	–	V
Emitter–Collector Breakdown Voltage	$V_{(BR)ECO}$	I_E = 100µA, I_F = 0		7	–	–	V
Collector Dark Current	I_{CEO}	V_{CE} = 10V, I_F = 0		–	5	50	nA
Capacitance	C_J	V_{CE} = 10V, f = 1MH$_Z$		–	2	–	pf
Coupled Characteristics							
DC Current Transfer Ratio	CTR	I_F = 10mA, V_{CE} = 10V		6	–	–	%
Collector–Emitter Saturation Voltage	$V_{CEO(sat)}$	I_F = 60mA, I_C = 1.6mA		100	–	–	V
Isolation Resistance	$R_{(I–O)}$	$V_{(I–O)}$ = 500V_{DC}		100	–	–	GΩ
Input to Output Capacitance	$C_{(I–O)}$	$V_{(I–O)}$ = 0, f = 1MH$_Z$		–	–	2	pf
Switching Speeds	t_r, t_f	V_{CE} = 10V, R_L = 100Ω	I_{CE} = 2mA	–	5	–	µs
			I_{CB} = 50µA	–	3	–	µs

Pin Connection Diagram