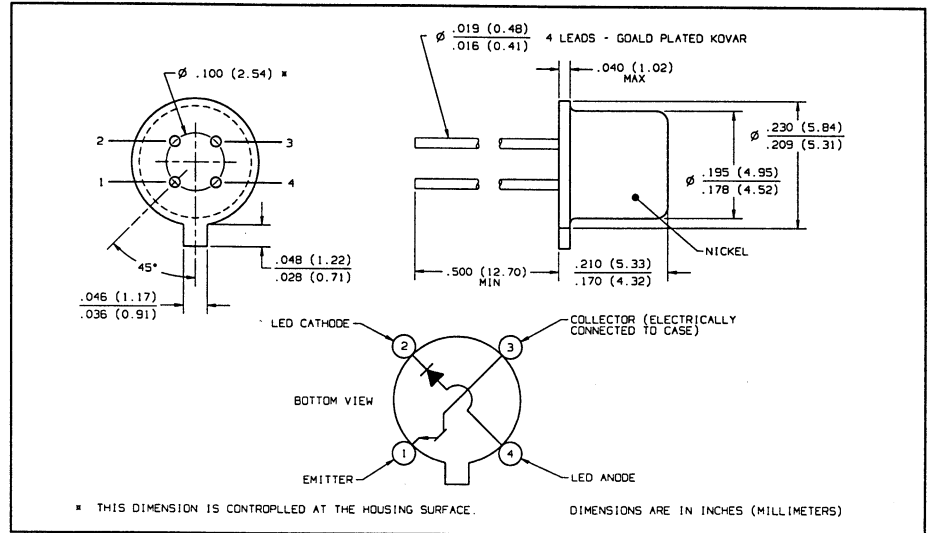
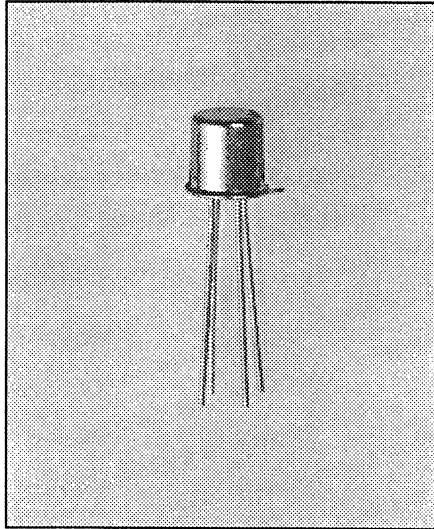


High Reliability Optically Coupled Isolators

Types 3N261, 3N262, 3N263 3N261TX, 3N262TX, 3N263TX



Features

- TX versions processed to Optek's military screening program patterned after MIL-PRF-19500
- TO-72 hermetically sealed package
- 1 kVDC electrical isolation
- High current transfer ratio at low diode current drive

Description

Each device in the series is a high reliability designed optically coupled isolator consisting of an infrared emitting diode and an NPN silicon phototransistor mounted in a hermetically sealed TO-72 package.

This series is identical to the JEDEC registered optically coupled isolators. Typical screening and lot acceptance tests are provided on page 13-4.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Input-to-Output Isolation Voltage	± 1.00 kVDC ⁽¹⁾
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Operating Temperature Range	-55°C to $+125^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	240°C ⁽²⁾

Input Diode

Forward DC Current	40 mA
Reverse Voltage	2.0 V
Power Dissipation	60 mW ⁽³⁾

Output Phototransistor

Continuous Collector Current	30 mA
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Power Dissipation	200 mW ⁽⁴⁾

Notes:

- (1) Measured with input leads shorted together and output leads shorted together.
- (2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (3) Derate linearly $0.60\text{ mW}/^\circ\text{C}$ above 25°C .
- (4) Derate linearly $2.0\text{ mW}/^\circ\text{C}$ above 25°C .
- (5) The input waveform is supplied by a generator with the following characteristics:
 $Z_{OUT} = 50\ \Omega$, $t_r \leq 15\text{ ns}$, duty cycle $\cong 1\%$, pulse width $\cong 100\text{ ms}$.

Types 3N261, 3N262, 3N263 3N261TX, 3N262TX, 3N263TX

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	3N261TX			3N262TX			3N263TX			Units	Test Conditions	
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max			
Input Diode													
V _F	Forward Voltage	0.80		1.50	0.80		1.50	0.80		1.50	V	I _F = 10.0 mA	
		1.00		1.70	1.00		1.70	1.00		1.70	V	I _F = 10.0 mA, T _A = -55° C	
		0.70		1.30	0.70		1.30	0.70		1.30	V	I _F = 10.0 mA, T _A = 100° C	
I _R	Reverse Current			100			100			100	μA	V _R = 2.0 V	
Output Phototransistor													
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	40			40			40			V	I _C = 1.00 mA	
V _{(BR)ECO}	Emitter-Collector Breakdown Voltage	7.0			7.0			7.0			V	I _E = 100 μA	
I _{CEO}	Collector Dark Current			100 100			100 100			100 100	nA μA	V _{CE} = 10.0 V V _{CE} = 10.0 V, T _A = 100° C	
Coupled													
I _{C(on)}	On-State Collector Current	0.50			1.00			5.0	2.00		10.0	mA	I _F = 1.0 mA, V _{CE} = 5.0 V
		0.70			1.40				2.80			mA	I _F = 2.0 mA, V _{CE} = 5.0 V, T _A = -55° C
		0.50			1.00				2.00			mA	I _F = 2.0 mA, V _{CE} = 5.0 V, T _A = 100° C
V _{CE(SAT)}	Collector-Emitter Saturation Voltage			0.30								V	I _F = 2.0 mA, I _C = 0.50 mA
							0.30					V	I _F = 2.0 mA, I _C = 1.0 mA
										0.30		V	I _F = 2.0 mA, I _C = 2.0 mA
I _{IO}	Leakage Input-to-Output			10			10			10	nA	V _{IO} = ± 1.00 kVDC ⁽¹⁾	
C _{IO}	Capacitance Input-to-Output			5.0			5.0			5.0	pF	V _{IO} = 0 V, f = 1.00 MHz ⁽¹⁾	
t _r	Output Rise Time			20.0			20.0			25.0	μs	V _{CC} = 10.0 V, I _F = 5.0 mA, ⁽⁵⁾ R _L = 100 Ω	
t _f	Output Fall Time			20.0			20.0			25.0	μs		

HI-REL OPTO COMPONENTS