

MTL3N261**MTL3N262****MTL3N263****SINGLE CHANNEL OPTOCOUPLER****Features:**

- High Reliability
- Base lead eliminated for improved noise immunity
- Rugged package
- Stability over wide temperature
- +1000V electrical isolation

Applications:

- Eliminate ground loops
- Level shifting
- Line receiver
- Switching power supplies
- Motor control

DESCRIPTION

The **MTL3N26X** series optocoupler contains a gallium arsenide infrared LED optically coupled to a silicon planar phototransistor. The optocoupler is built on a TO-46 header. The anode of the LED is electrically connected to the case. This optocoupler is capable of transmitting signals between two galvanic sources. The potential difference between transmitter and receiver should not go over the maximum isolation voltage. The internal base connection has been eliminated for improved noise immunity.

ABSOLUTE MAXIMUM RATINGS

Input to Output Voltage.....	1000V
Emitter-Collector Voltage.....	.7V
Collector-Emitter Voltage (Value applies to emitter-base open-circuited & the input-diode equal to zero).....	.40V
Reverse Input Voltage	.2V
Input Diode Continuous Forward Current at (or below) 65°C Free-Air Temperature (see note 1)	.40mA
Peak Forward Input Current (Value applies for $t_w \leq 1\mu s$, PRR < 300 pps)	.1A
Continuous Collector Current	.20mA
Continuous Transistor Power Dissipation at (or below) 25°C Free-Air Temperature (see Note 2)	.275mW
Storage Temperature.....	-65°C to +150°C
Operating Free-Air Temperature Range.....	-55°C to +100°C
Lead Solder Temperature (10 seconds max.)	240°C

Notes:

1. Derate linearly to 100°C free-air temperature at the rate of 1.14 mA/°C above 65°C.
2. Derate linearly to 100°C free-air temperature at the rate of 7.8 mW/°C above 65°C.

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	1	μA
Input Current, High Level	I_{FH}	10	20	mA
Supply Voltage	V_{CE}	5	10	V

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
MTL3N26X.001.X	Single Channel optocoupler, commercial (0° to +70°C operating temperature range)
MTL3N26X.002.X	Single Channel optocoupler, commercial (-40° to +85°C operating temperature range)
MTL3N26X.003.X	Single Channel optocoupler, commercial (-55° to +125°C operating temperature range)
MTL3N26X.004.X	Single Channel optocoupler, screened to JANTX level (-55° to +125°C operating temperature range)

NOTE: X at end of part number represents lead finish. Replace with A for gold or S for solder.

MTL3N261**MTL3N262****MTL3N263****SINGLE CHANNEL OPTOCOUPLER****ELECTRICAL CHARACTERISTICS**

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T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode Static Reverse Current	I _R			100		V _R = 2V
Input Diode Static Forward Voltage	V _F		1.15	1.3	V	I _F = 10mA

OUTPUT TRANSISTOR

T_A = 25°C unless otherwise specified.

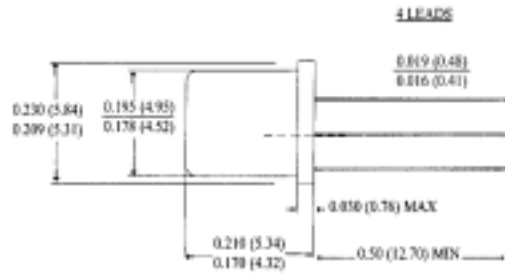
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	40			V	I _C = 1mA, I _B = 0, I _F = 0
Emitter-Collector Breakdown Voltage	V _{(BR)ECO}	7			V	I _E = 100μA, I _F = 0
Collector-Emitter Dark Current	I _{CEO}			100	nA	V _{CE} = 20V, I _F = 0mA

COUPLED CHARACTERISTICS

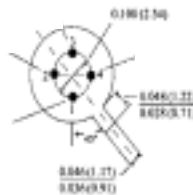
T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
On State Collector Current 3N261 3N262 3N263	I _{C(ON)}	0.5 1 2			mA	V _{CE} = 5V, I _F = 1mA
Collector-Emitter Saturation Voltage 3N261 3N262 3N263	V _{CE(SAT)}			0.3 0.3 0.3	V	I _F = 2mA, I _C = .05mA I _F = 2mA, I _C = 1.0mA I _F = 2mA, I _C = 2.0mA
Isolation Resistance	R _{ISO}	10 ⁹			Ω	V _{IN-OUT} = 1000V
Rise Time 3N261 3N262 3N263	t _r		10 10 15	20 20 25	μs	V _{CE} = 10V, I _F = 5mA, R _L = 100Ω
Fall Time 3N261 3N262 3N263	t _f		10 10 15	20 20 25	μs	V _{CE} = 10V, I _F = 5mA, R _L = 100Ω

Package Dimensions



DIMENSIONS ARE IN INCHES (MILLIMETERS)



Schematic Diagram

