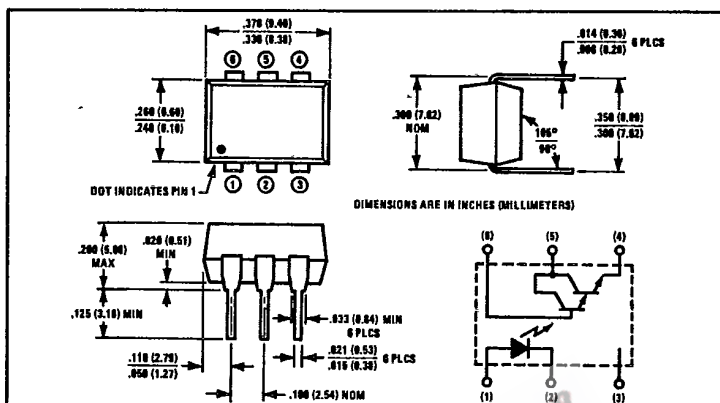
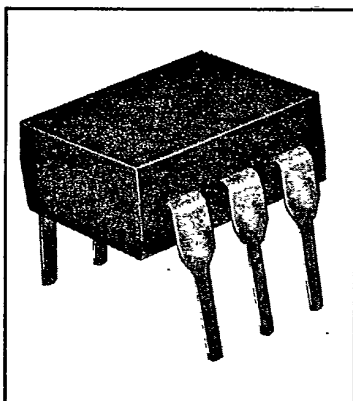




T-41-85

Optically Coupled Isolators

Types OPI3153, OPI3253



Features

- Photodarlington output
- High current transfer ratio
- 2500 or 1500 volt isolation ratings
- UL recognized File No. E58730

Description

The OPI3153 and OPI3253 are optically coupled isolators each consisting of a gallium arsenide infrared emitting diode and an NPN silicon photodarlington mounted in a standard plastic six pin dual-in-line package. Except for isolation voltage, the OPI3153 and OPI3253 are identical.

Absolute Maximum Ratings (TA = 25°C unless otherwise noted)

Input-to-Output Isolation Voltage — OPI3153 ±1500 VDC⁽¹⁾
OPI3253 ±2500 VDC⁽¹⁾

Storage Temperature Range -55°C to +150°C

Operating Temperature Range -55°C to +100°C

Lead Soldering Temperature (1/16 inch (1.6 mm) from case for 6 sec. with soldering iron)⁽²⁾ 260°C

Input Diode

Forward DC Current 60 mA

Peak Forward Current (1 μs pulse width, 330 pps) 3.0 A

Reverse DC Voltage 3.0 V

Power Dissipation 100 mW⁽³⁾

Output Transistor

Collector-Emitter Voltage 25 V

Collector-Base Voltage 30 V

Emitter-Collector Voltage 5.0 V

Power Dissipation 150 mW⁽⁴⁾

Notes:

- (1) Measured with input diode 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 1.33 mW/°C above 25°C.
- (4) Derate linearly 2.0 mW/°C above 25°C.

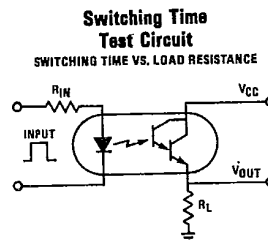
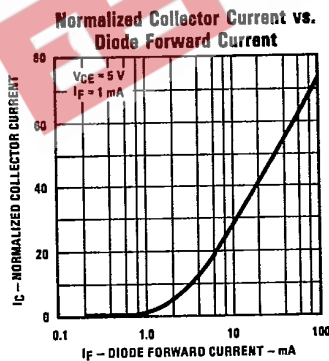
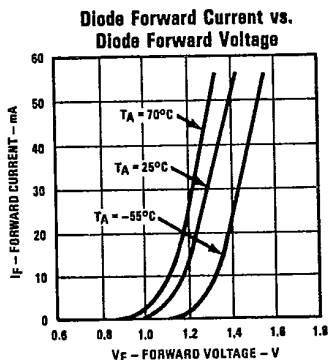
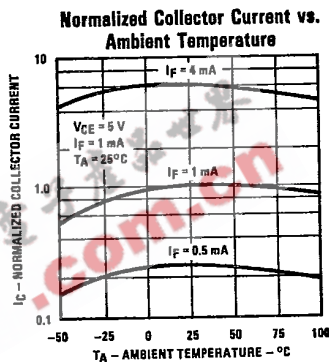
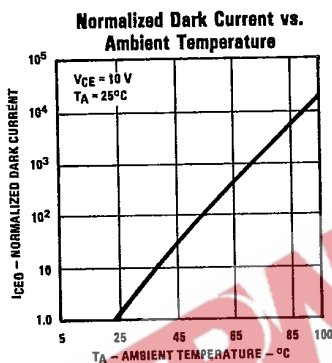
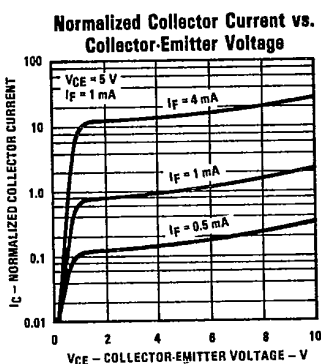
Types OPI3153, OPI3253

T-41-85

Electrical Characteristics (TA = 25°C unless otherwise noted)

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
Input Diode						
V _F	Forward Voltage			1.60	V	I _F = 10.0 mA
I _R	Reverse Current			100	μA	V _R = 3.0 V
Output Photosensor						
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	25			V	I _C = 1.00 mA
V _{(BR)CBO}	Collector-Base Breakdown Voltage	30			V	I _C = 100 μA
V _{(BR)ECO}	Emitter-Collector Breakdown Voltage	6.0			V	I _E = 100 μA
I _{CEO}	Collector-Emitter Dark Current			100	nA	V _{CE} = 10.0 V
Coupled						
I _C /I _F	DC Current Transfer Ratio	500			%	I _F = 1.00 mA, V _{CE} = 6.0 V
V _{CE(SAT)}	Collector-Emitter Saturation Voltage			1.20	V	I _F = 1.00 mA, I _C = 1.00 mA
t _r	Output Rise Time		3.0		μs	V _{CC} = 10.0 V, I _C = 10.0 mA, R _L = 100Ω
t _f	Output Fall Time		25		μs	See Test Circuit

Typical Performance Curves



NOTE: Rise Time (t_r) is time required for collector current to increase from 10% to 90% of its final value. Fall Time (t_f) is time required for the collector current to decrease from 90% to 10% of its initial value.

TRW reserves the right to make changes at any time in order to improve design and to supply the best product possible. Plastic color may vary.
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