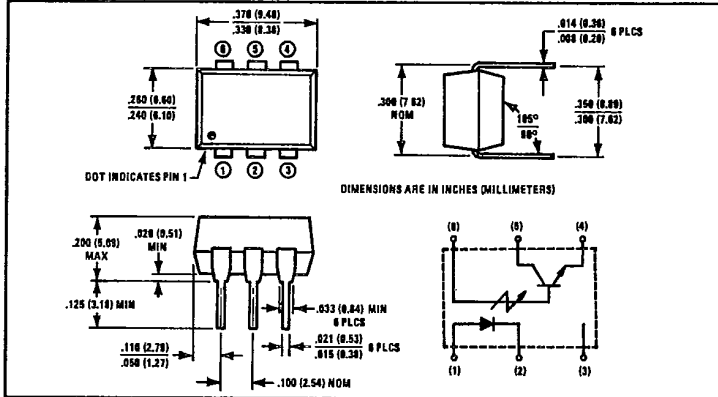
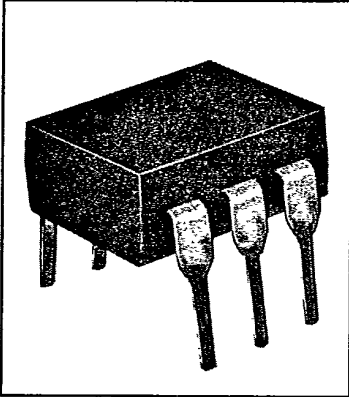


T-41-83

Optically Coupled Isolators

Types OPI2151, OPI2251



Features

- 1500 or 2500 volt isolation
- High current transfer ratio
- Low cost 6 pin dual-in-line package
- UL recognized File No. E58730

Description

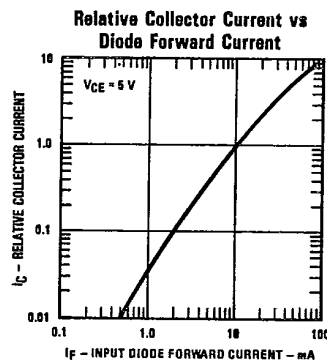
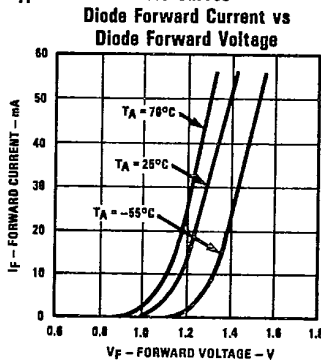
The OPI2151 and OPI2251 each consist of a gallium arsenide infrared light emitting diode coupled to an NPN silicon phototransistor mounted in a six pin dual-in-line package. The OPI2151 and OPI2251 are identical except for input-to-output isolation voltage.

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

Input-to-Output Isolation Voltage OPI2151	± 1500 VDC ⁽¹⁾
OPI2251	± 2500 VDC ⁽¹⁾
Storage Temperature Range	-55°C to +150°C
Operating Temperature Range	-55°C to +150°C
Lead Soldering Temperature (1/16 inch [1.6 mm] from case for 5 sec. with soldering iron) ⁽²⁾	260°C
Input Diode	
Forward DC Current	60 mA
Peak Forward Current (1 μs pulse width, 300 pps)	3.0 A
Reverse Voltage	3.0 V
Power Dissipation (25°C)	100 mW ⁽³⁾
Output Transistor	
Power Dissipation	150 mW ⁽⁴⁾
B ₁ (B)ICEO	30 V
V ₁ (B)ICBO	30 V
V ₁ (B)IECO	5.0 V

Notes: (1) Measured with input diode leads shorted together and output leads shorted together. (2) RMA rosin flux is recommended. Duration can be extended to 10 sec. max. when flow soldering or using a solder pot. (3) Derate linearly 1.33 mW/°C above 25°C. (4) Derate linearly 2.0 mW/°C above 25°C.

Typical Performance Curves



Types OPI2151, OPI2251

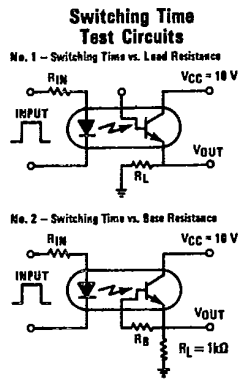
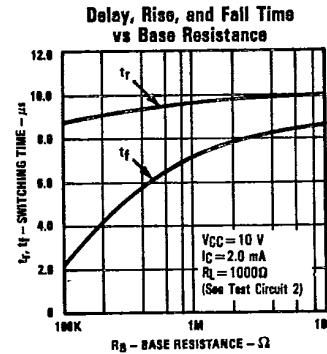
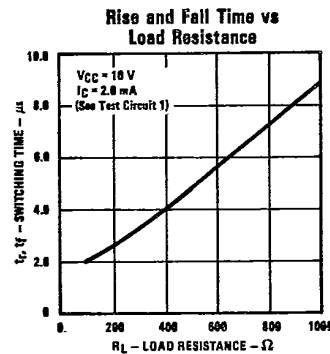
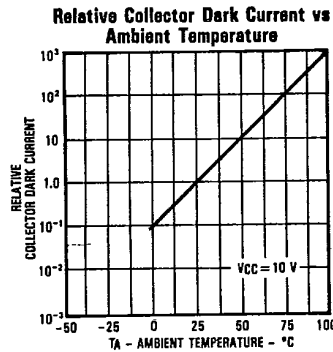
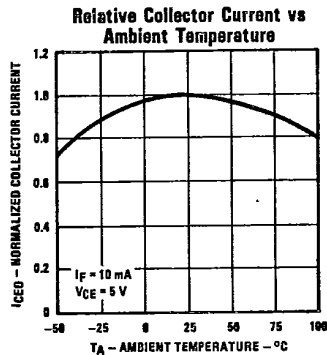
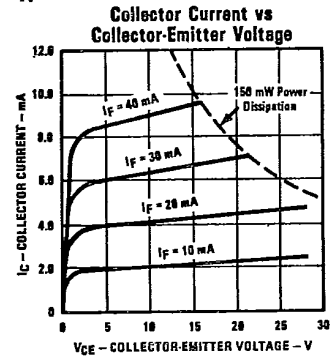
T-41-83

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

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
Input Diode						
VF	Forward Voltage			1.50	V	IF = 10.0 mA
VBRIR	Reverse Breakdown Voltage	3.0			V	IR = 10.0 μA
IR	Reverse Current			10.0	μA	VR = 3.0 V
Output Phototransistor						
VBRICEO	Collector-to-Emitter Breakdown Voltage	30			V	IC = 1.0 mA
VBRIECO	Emitter-to-Collector Breakdown Voltage	5.0			V	IE = 100 μA
VBRICBO	Collector-Base Breakdown Voltage	30			V	IC = 100 μA
ICEO	Collector-Emitter Dark Current		5.0	100	nA	VCE = 10.0 V
ICBO	Collector-Base Dark Current			20	nA	VCB = 10.0 V
CCE	Capacitance Collector-to-Emitter		8.0		pF	VCE = 0
hFE	DC Current Gain		150			VCE = 5.0 V, IC = 100 μA
Coupled						
IC/IF	DC Current Transfer Ratio	10.0	20		%	IF = 10.0 mA, VCE = 5.0 V, IB = 0
VCE(SAT)	Collector-to-Emitter Saturation Voltage			0.40	V	IF = 10.0 mA, IC = 250 μA, IB = 0
VISO	Isolation Voltage OPI2151 OPI2251	1500 2500			VDC VDC	See Note 1
RIO	Input-to-Output Resistance	10 ¹¹			Ω	VIO = 500 V, See Note 1
CIO	Input-to-Output Capacitance		2.0		pF	f = 1.00 MHz, See Note 1
tr	Output Rise Time		2.0		μs	VCC = 10.0 V, IC = 2.0 mA
tf	Output Fall Time		2.0		μs	RL = 100Ω, See Test Circuit



Typical Performance Curves



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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