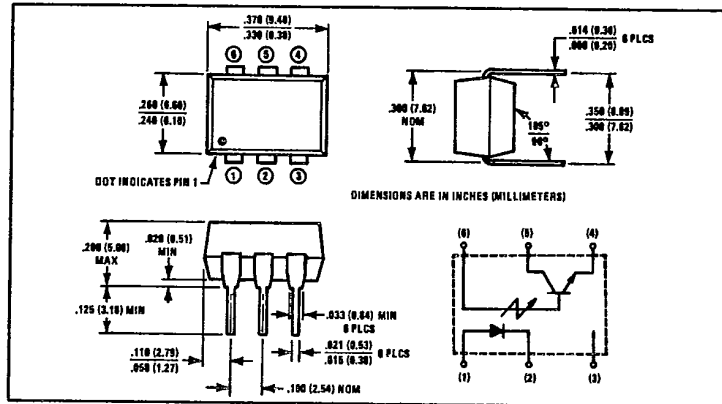
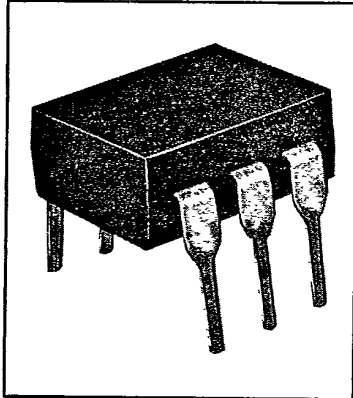


T-41-83

Optically Coupled Isolators, High $V_{(BR)CEO}$ Types OPI6000, OPI6100



Features

- 300 V collector-emitter breakdown voltage
- Low cost 6 pin dual-in-line package
- UL recognized File No. E58730

Description

The OPI6000 and OPI6100 are optically coupled isolators each consisting of a gallium arsenide infrared emitting diode and an NPN silicon phototransistor mounted in a standard plastic six pin dual-in-line package. This series is intended for applications where high collector-emitter breakdown voltages are required.

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

Input-to-Output Isolation Voltage	± 1500 VDC ⁽¹⁾
Storage Temperature Range	.....	-55°C to $+150^\circ\text{C}$
Operating Temperature Range	.....	-55°C to $+100^\circ\text{C}$
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	.....	100 mW ⁽³⁾

Output Phototransistor

$V_{(BR)CEO}$	OPI6000	.....	300 V
	OPI6100	.....	200 V
$V_{(BR)CBO}$	OPI6000	.....	300 V
	OPI6100	.....	200 V
$V_{(BR)ECO}$	.....	.....	7.0 V
Power Dissipation	.....	.....	300 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/ $^\circ\text{C}$ above 25°C .
- (4) Derate linearly 4.0 mW/ $^\circ\text{C}$ above 25°C .

Types OPI6000, OPI6100

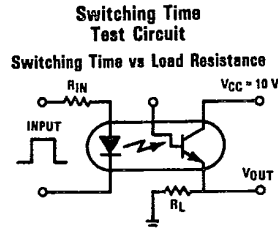
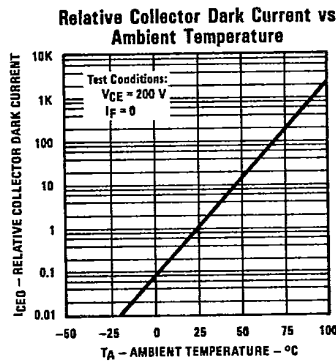
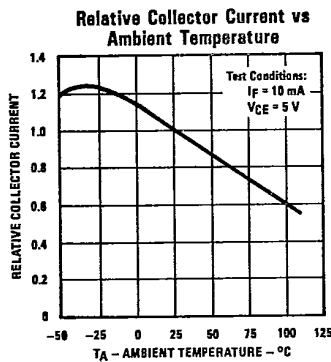
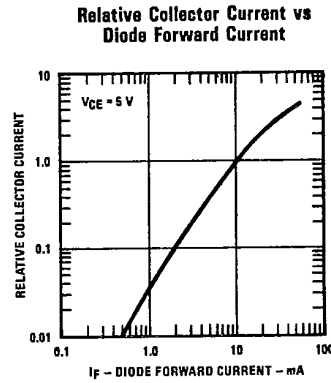
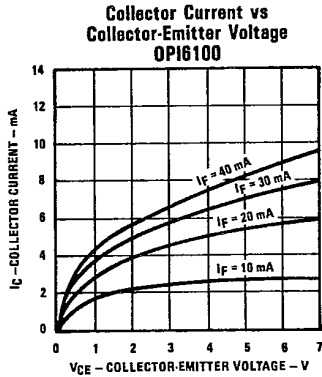
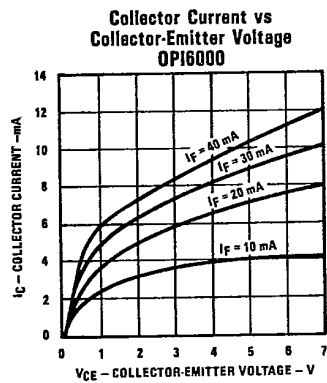
T-41-83

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

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
Input Diode						
V _F	Forward Voltage			1.50	V	I _F = 10.0 mA
I _R	Reverse Current			10.0	μA	V _R = 3.0 V
Output Phototransistor						
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage (See Note 1)	OPI6000 300	OPI6100 200		V	I _C = 1.00 mA
V _{(BR)ECO}	Emitter-Collector Breakdown Voltage		7.0		V	I _E = 100 μA
V _{(BR)CBO}	Collector-Base Breakdown Voltage	OPI6000 300	OPI6100 200		V	I _C = 100 μA, I _F = 0
I _{CEO}	Collector Dark Current	OPI6000 100	OPI6100 100		nA	V _{CE} = 200 V, R _{BE} = 1.00 MΩ V _{CE} = 100 V, R _{BE} = 1.00 MΩ
Coupled						
I _C /I _F	DC Current Transfer Ratio	OPI6000 20	OPI6100 10.0		%	I _F = 10.0 mA, V _{CE} = 5.0 V I _F = 10.0 mA, V _{CE} = 5.0 V
V _{CE(SAT)}	Collector-to-Emitter Saturation Voltage			0.40	V	I _F = 10.0 mA, I _C = 0.50 mA
V _{ISO}	Isolation Voltage		1500		VDC	See Note 1
R _{IO}	Input-to-Output Resistance		10 ¹¹		Ω	V _{IO} = 600 V, See Note 1
C _{IO}	Input-to-Output Capacitance		2.0		pF	f = 1.00 MHz, See Note 1
t _{on}	Turn On Time		4.0		μs	V _{CC} = 10.0 V, R _L = 100 Ω
t _{off}	Turn Off Time		2.5		μs	I _F = 2.0 mA, 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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