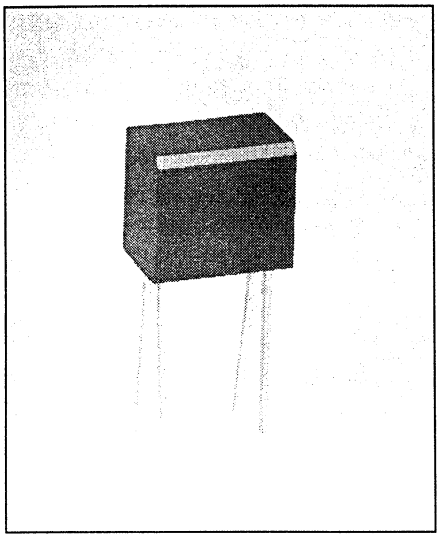
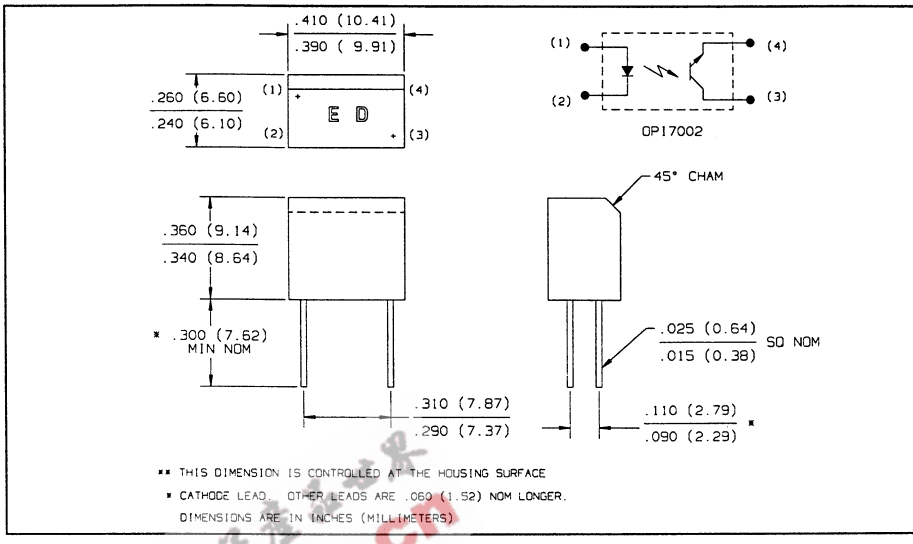
Optically Coupled Isolators
Types OPI7320, OPI7340





Features

- 6kV electrical isolation
- Low cost plastic housing
- UL recognized File No. E58730[4]
- Photodarlington output

Description

The OPI7320 and OPI7340 each consist of an infrared emitting diode coupled to an NPN silicon photodarlington in a high dielectric plastic housing. This device is designed for applications requiring a high current transfer ratio. Pin spacing is compatible with standard dual-in-line packages.

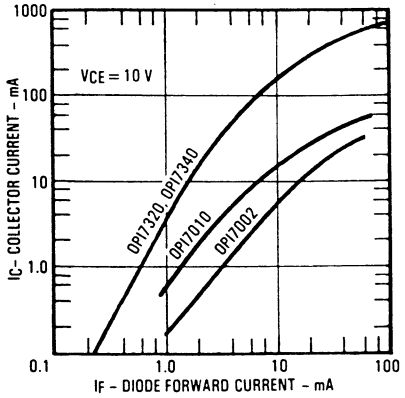
Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Input-to-Output Isolation Voltage	± 6 kVDC[1][4]
Operating and Storage Temperature Range	-40° C to +85° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	260° C[2]
Input Diode	
Forward DC Current	50 mA
Peak Forward Current (1 µs pulse width, 300 pps)	3.0 A
Reverse Voltage	2.0 V
Power Dissipation	100 mW[3]
Output Photodarlington	
Collector-Emitter Voltage	15 V
Emitter-Collector Voltage	5.0 V
Power Dissipation	100 mW[3]

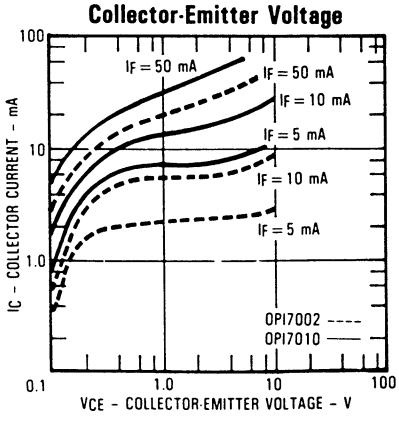
Notes:
(1) Measured with input and output leads shorted.
(2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering.
(3) Derate linearly 1.66 mW/° C above 25° C.
(4) UL recognition is for 3500 VAC, 1 minute only.

Typical Performance Curves

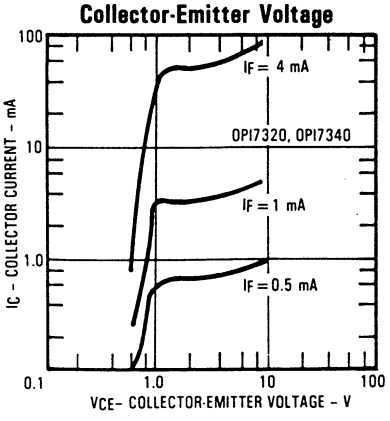
Collector Current vs Diode Forward Current



Collector Current vs Collector-Emitter Voltage



Collector Current vs Collector-Emitter Voltage



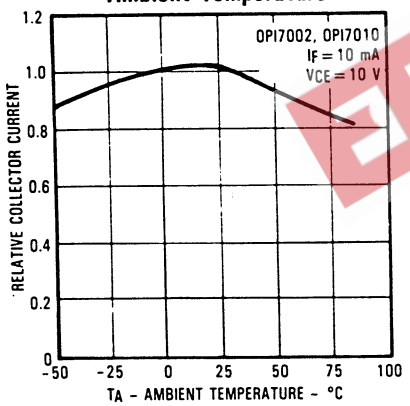
Types OPI7320, OPI7340

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

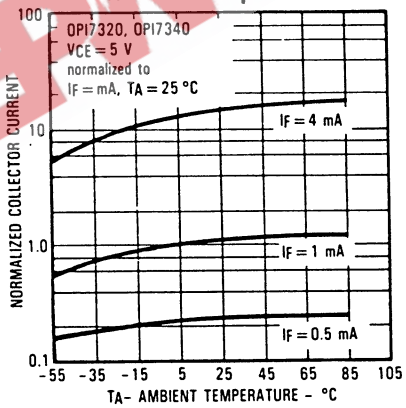
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
V_F	Forward Voltage			1.70	V	I_F = 10 mA
I_R	Reverse Current			100	µA	V_R = 2 V
Output Photodarlington						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	15.0			V	I_C = 1 mA, I_F = 0
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0			V	I_E = 100 µA, I_F = 0
I_{CEO}	Collector Dark Current			100	nA	V_{CE} = 10 V, I_F = 0
Coupled						
I_C/I_F	DC Current Transfer Ratio OPI7320 OPI7340	200 400			% %	I_F = 5 mA, V_{CE} = 5 V I_F = 5 mA, V_{CE} = 5 V
$V_{(SAT)}$	Collector-Emitter Saturation Voltage			1.00	V	I_F = 5 mA, I_C = 2 mA
V_{ISO}	Isolation Voltage	6			kVDC	(See Note 1)
t_{ON}	Turn-On Time		150		µs	V_{CE}= 10 V, I_C = 10 mA, R_L = 100 Ω
t_{OFF}	Turn-Off Time		125		µs	V_{CE} = 10 V, I_C = 10 mA, R_L = 100 Ω
C_{IO}	Capacitance Input-to-Output		0.20		pF	V_{IO} = 0, f = 1 MHz(1)

Typical Performance Curves

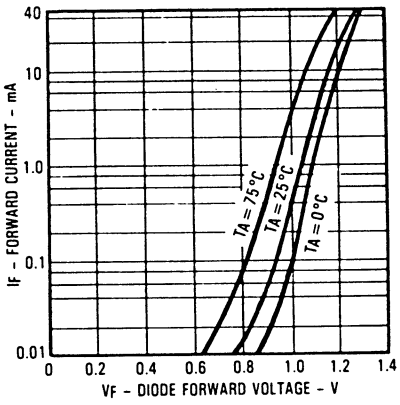
Relative Collector Current vs Ambient Temperature



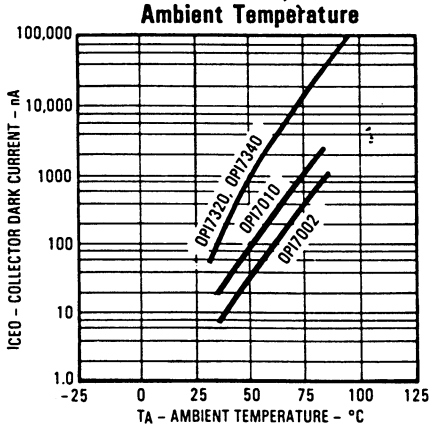
Normalized Collector Current vs Ambient Temperature



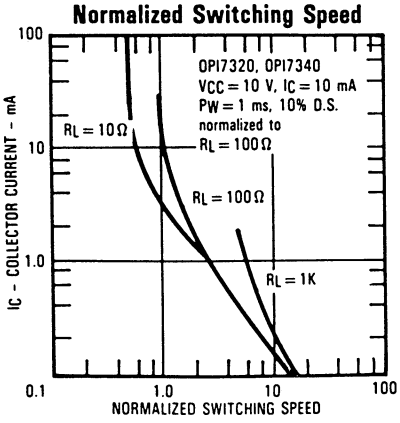
Diode Forward Current vs Diode Forward Voltage



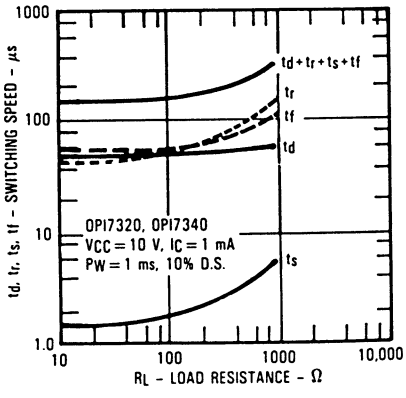
Collector Dark Current vs Ambient Temperature



Collector Current vs Normalized Switching Speed



Switching Speed vs Load Resistance



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