

Series PVI5033RPbF

Photovoltaic Isolator

Solid-State

Opto-Isolated MOSFET Gate Driver

Dual-Channel, 5V, 5 μ A

General Description

The PVI5033R Photovoltaic Isolator is a dual-channel, opto-isolated driver capable of directly driving gates of power MOSFETs or IGBTs. It utilizes a monolithic integrated circuit photovoltaic generator of novel construction as its output. The output is controlled by radiation from a GaAlAs light emitting diode (LED) which is optically isolated from the photovoltaic generator.

The PVI5033R is ideally suited for applications requiring high-current and/or high voltage switching with optical isolation between the low-level driving circuitry and high-energy or high-voltage load circuits. It can be used for directly driving gates of power MOSFETs. The dual-channel configuration allows its outputs to drive independent discrete power MOSFETs, or be connected in parallel or in series to provide higher-current drive for power MOSFETs or higher-voltage drive for IGBTs. PVI5033R employs a fast turn-off circuitry.

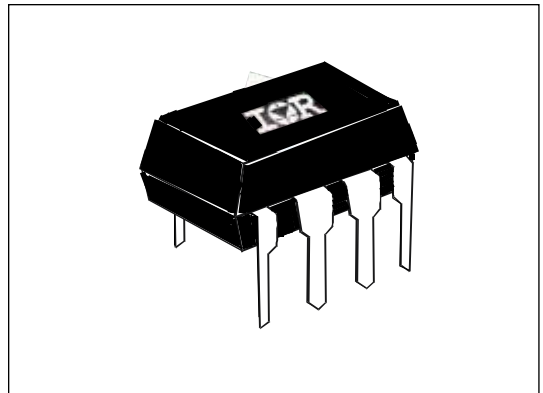
PVI5033R Photovoltaic Isolators are packaged in an 8-pin, molded DIP package with either thru-hole or "gull-wing" terminals. It is available in standard plastic shipping tubes or on tape-and-reel. Refer to Part Identification information.

Applications

- Telecommunications
- Load Distribution
- Industrial Controls
- Instrumentation and Measurement
- Electronic Ballast

Features

- Monolithic construction
- 3,750 V_{RMS} I/O isolation
- 1,200 V_{DC} output-to-output isolation
- Dual-Channel application flexibility
- Solid-State Reliability
- UL Recognized and BABT Certified



Part Identification

PVI5033RPbF	thru-hole
PVI5033RSPbF	SMT
PVI5033RS-TPbF	SMT, Tape and Reel

Electrical Specifications ($-40^{\circ}\text{C} \leq T_A \leq +85^{\circ}\text{C}$ unless otherwise specified)

INPUT CHARACTERISTICS	Limits	Units
Min. Input Current (See Fig. 1)	5.0	mA
Input Current Range (See Fig. 1)	3.0 to 25	mA
Max. Continuous Input Current @ $T_A=+25^{\circ}\text{C}$	40	mA
LED Forward Voltage Drop @ 5mA, $T_A=+25^{\circ}\text{C}$ (See Fig. 3)	1.4	V
Max. Reverse Voltage	6.0	V
Max. Reverse Current @ -6Vdc, $T_A=+25^{\circ}\text{C}$	10	μA

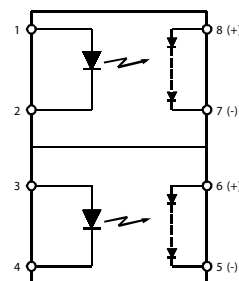
OUTPUT CHARACTERISTICS	Limits	Unit
Min. Forward Voltage	8.0	V _{DC}
Max. Reverse Current	10	μADC

COUPLED CHARACTERISTICS	Limits	Units
Min. Output Voltage @ I _{LED} = 10mA, R _L = 10M Ω @ $T_A=0^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ (See Fig. 1 & 2)	5	V
Max. Output Voltage @ I _{LED} = 10mA, R _L = 10M Ω @ $T_A=0^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ (See Fig. 1 & 2)	10	V
Max. Voltage Differential Between Outputs @ I _{LED} = 5mA, R _L = 10M Ω	1.0	V
Min. Output Short-Circuit Current @ I _{LED} = 5mA, @ $T_A=+25^{\circ}\text{C}$ (See Fig. 1 & 2)	1.65	μA
Typical Output Short-Circuit Current @ I _{LED} = 10mA, @ $T_A=+25^{\circ}\text{C}$ (See Fig. 1 & 2)	5	μA
Max. Turn-On Time @ I _{LED} = 5mA, C _{LOAD} = 200pF (See Fig. 4)	2.5	ms
Max. Turn-Off Time @ I _{LED} = 5mA, C _{LOAD} = 200pF (See Fig. 4)	.5	ms
Off-State Clamping Resistance: minimum maximum	350 1500	Ω Ω

GENERAL CHARACTERISTICS	Limits	Units
Min. Dielectric Strength, Input-Output	3750	V _{RMS}
Min. Dielectric Strength, Output-to-Output	1200	V _{DC}
Min. Insulation Resistance, Input-to-Output @ $T_A=+25^{\circ}\text{C}$, 50%RH, 100V _{DC}	10^{12}	Ω
Max. Capacitance, Input-Output	5.0	pF
Max. Pin Soldering Temperature (10 seconds max.)	+260	$^{\circ}\text{C}$
Ambient Temperature Range: Operating Storage	40 to +85 40 to +125	$^{\circ}\text{C}$ $^{\circ}\text{C}$

Connection Diagram

International Rectifier does not recommend the use of this product in aerospace, avionics, military or life support applications. Users of this International Rectifier product in such applications assume all risks of such use and indemnify International Rectifier against all damages resulting from such use.



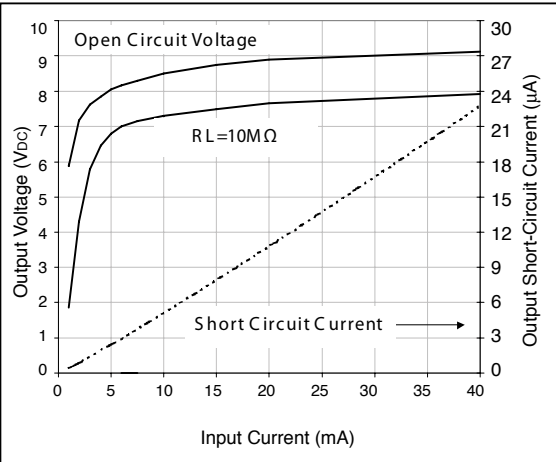


Figure 1. Typical Output Characteristics

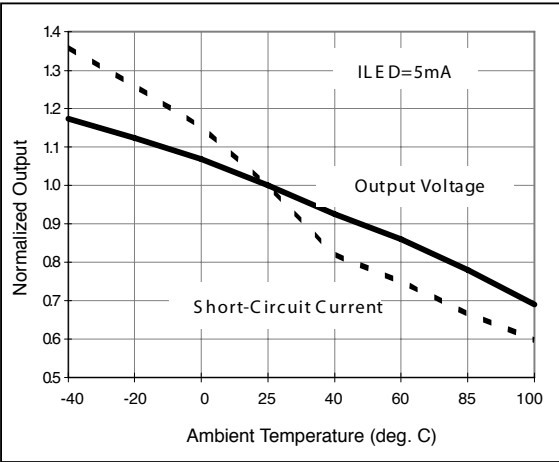


Figure 2. Typical Variation of Output

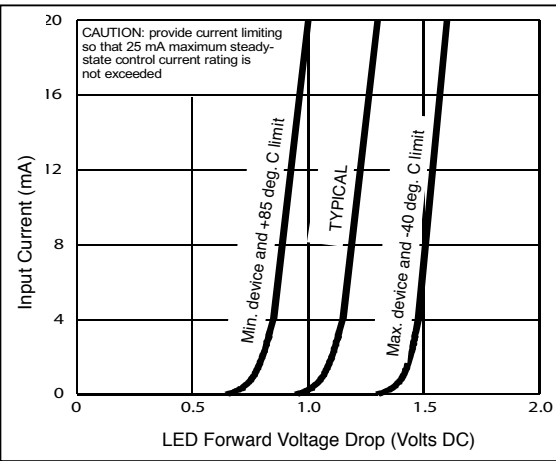


Figure 3. Input Characteristics (Current Controlled)

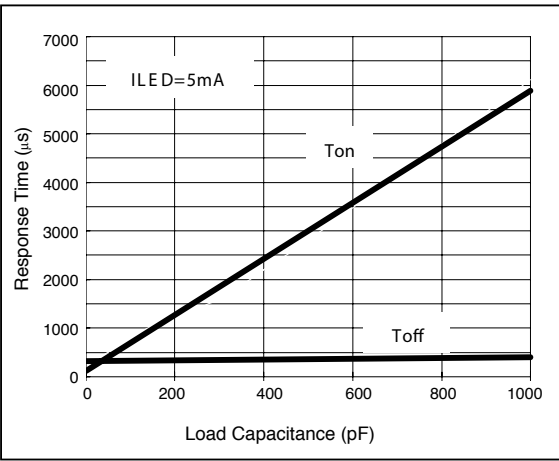
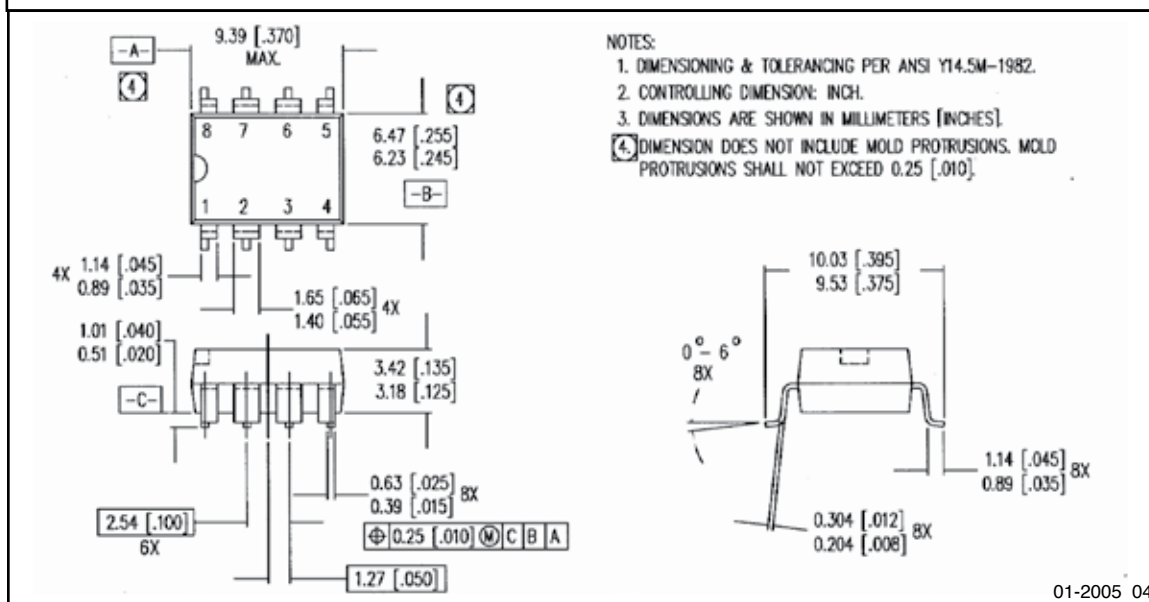
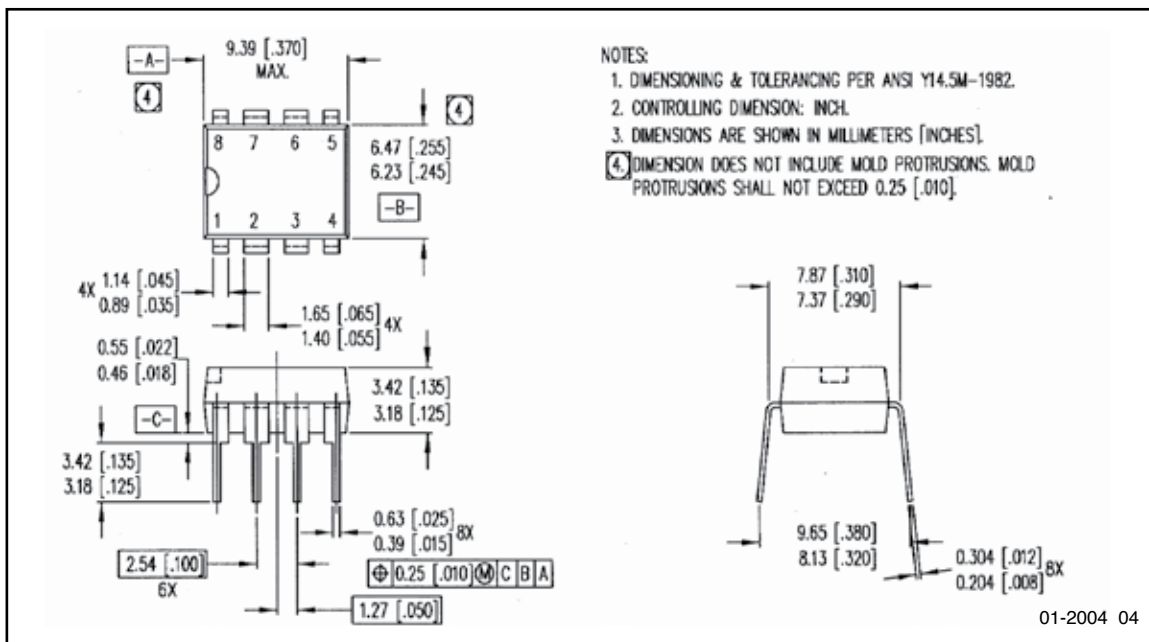


Figure 4. Typical Response Time

Case Outlines





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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