

General Description

The PVT412 Series Photovoltaic Relay is a single-pole, normally open solid-state relay that can replace electromechanical relays in many applications. It utilizes International Rectifier's proprietary HEXFET power MOSFET as the output switch, driven by an integrated circuit photovoltaic generator of novel construction. The output switch is controlled by radiation from a GaAlAs light emitting diode (LED) which is optically isolated from the photovoltaic generator.

These SSRs are specifically designed for worldwide telecom applications. PVT412L employs an active current-limiting circuitry enabling it to pass FCC Part 68 and other regulatory agency current surge requirements when overvoltage protection is provided. PVT412 does not employ the current-limiting circuitry and offers lower on-state resistance.

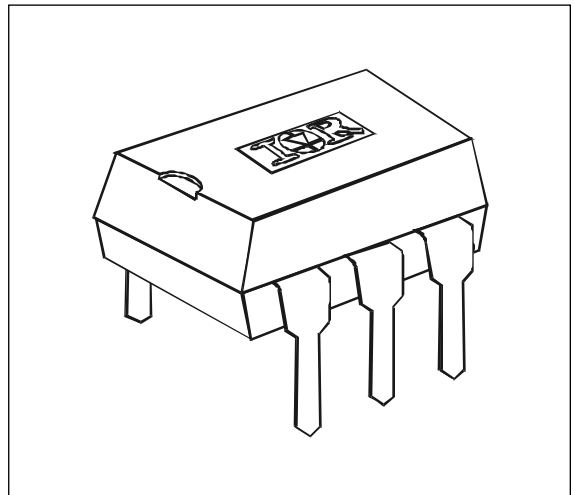
Series PVT412 Relays are packaged in a 6-lead molded DIP package with either through-hole or surface mount ('gull-wing') terminals. It is available in standard plastic shipping tubes or on tape-and-reel. Please refer to part identification information opposite.

Applications

- On/Off Hook switch
- Dial-Out relay
- Ring relay
- General switching

PVT412L Features

- HEXFET Power MOSFET output ■
- Bounce-free operation ■
- 4,000 VRMS I/O isolation ■
- Load current limiting ■
- Linear AC/DC operation ■
- Solid-State reliability ■
- UL recognized and CSA certified ■



Part Identification

PVT412L	current limit, through-hole
PVT412LS	current limit, surface-mount
PVT412LS-T	current limit, surface-mount, Tape and Reel
PVT412	no current limit, through-hole
PVT412S	no current limit, surface-mount
PVT412S-T	no current limit, surface-mount, Tape and Reel

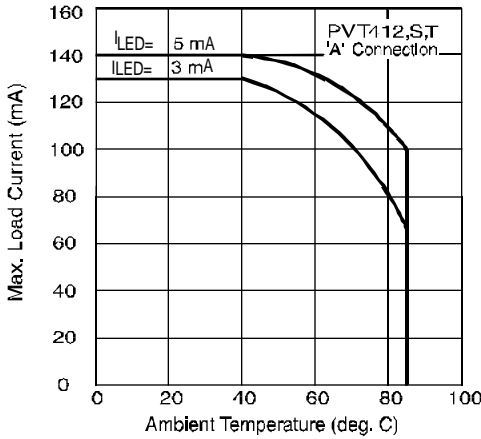


Figure 1. Current Derating Curves*

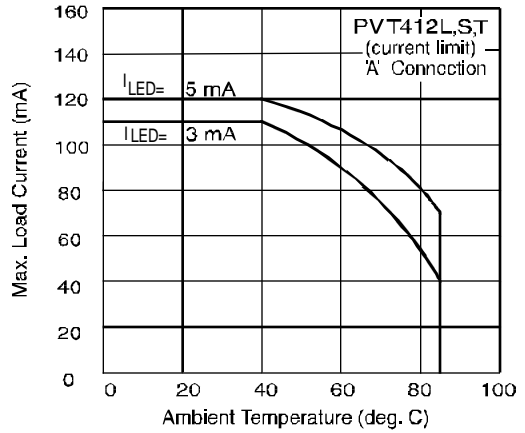


Figure 2. Current Derating Curves*

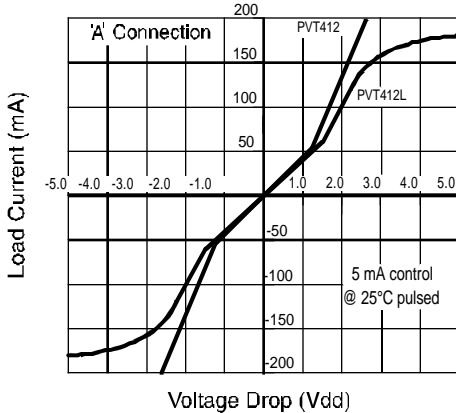


Figure 3. Linearity Characteristics

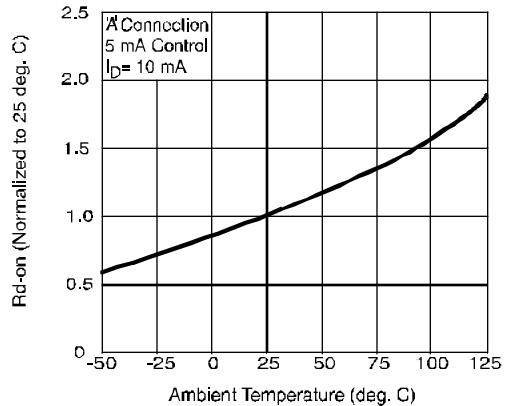


Figure 4. Typical Normalized On-Resistance

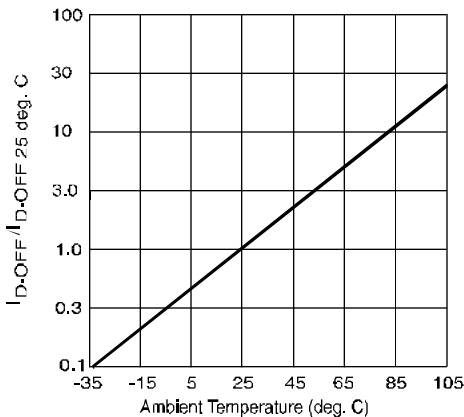


Figure 5. Typical Normalized Off-State Leakage

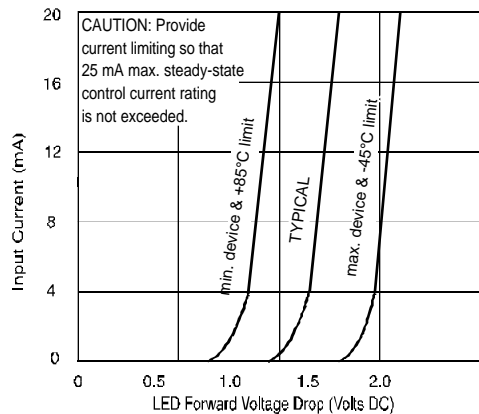


Figure 6. Input Characteristics (Current Controlled)

* Derating of 'B' and 'C' connection at +85°C will be 70% of that specified at +40°C and is linear from +40°C to +85°C.

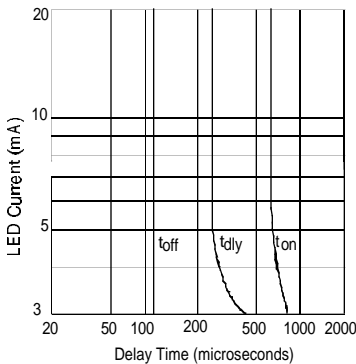


Figure 7. Typical Delay Times

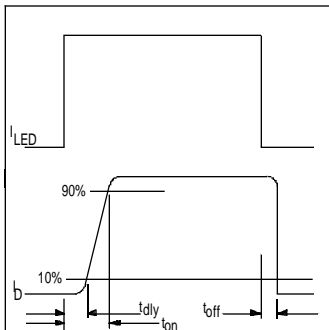


Figure 8. Delay Time Definitions

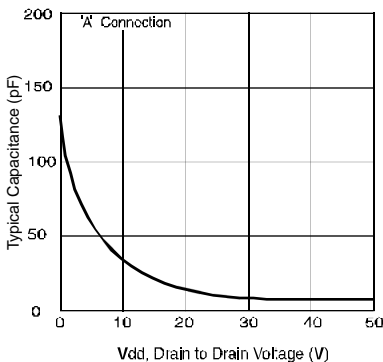


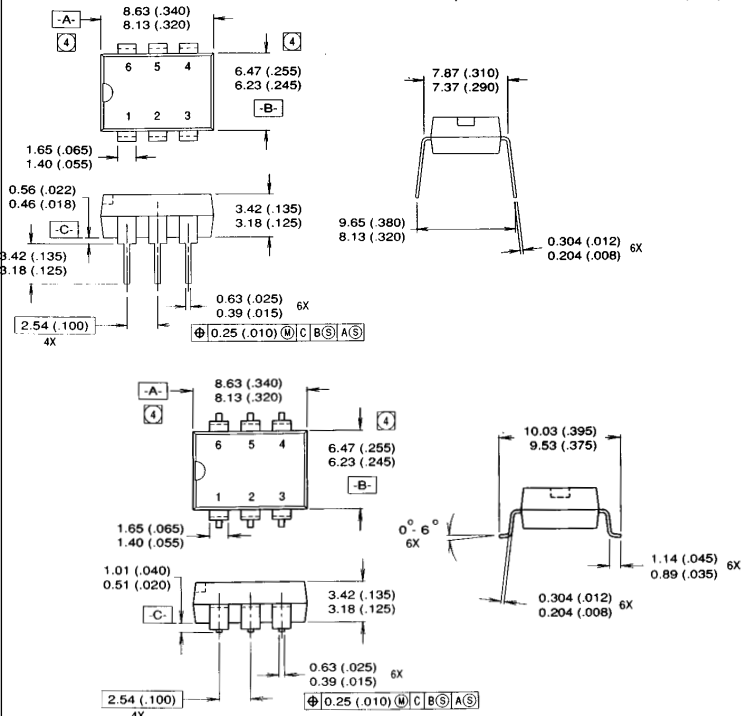
Figure 9. Typical Output Capacitance

Case Outline

Dimensions in millimeters (inches)

Mechanical Specifications:

1. Dimensioning and tolerancing per ANSI Y14.5M-1982
2. Controlling Dimension: Inch
- ④ Dimension does not include mold protrusions. Mold protrusions shall not exceed 0.25 (.010).



Note: PVT412L relays will pass FCC Part 68 surge current requirements operating into rated load or short circuit when protected from overvoltage by a transient protection device such as a 175 VRMS rated MOV placed between the tip and ring terminals of the telephone line or across the output of the relay. PVT412 relays will pass the above FCC Part 68 requirements when overcurrent protection devices (such as fusible resistors) are placed in series with tip and ring lines in addition to the aforementioned overvoltage protection. Consult factory for additional information.

WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, Tel: (310) 322 3331
EUROPEAN HEADQUARTERS: Hurst Green, Oxted, Surrey RH8 9BB, UK Tel: ++ 44 1883 713215
IR CANADA: 7321 Victoria Park Ave., Suite 201, Markham, Ontario L3R 2Z8, Tel: (905) 475 1897

IR GERMANY: Saalburgstrasse 157, 61350 Bad Homburg Tel: ++ 49 6172 96590

IR ITALY: Via Liguria 49, 10071 Borgaro, Torino Tel: ++ 39 11 451 0111

IR FAR EAST: K&H Bldg., 2F, 3-30-4 Nishi-Ikeburo 3-Chome, Toshima-Ku, Tokyo, Japan 171 Tel: ++ 81 3 3983 0641

IR SOUTHEAST ASIA: 315 Outram Road, #10-02 Tan Boon Liat Building, Singapore 0316 Tel: ++ 65 221 8371

<http://www.irf.com/>

Data and specifications subject to change without notice. 9/96