

Microelectronic Power IC  
 HEXFET® Power MOSFET Photovoltaic Relay  
 Dual Pole, Normally Open, 0-250V, 170mA AC/DC

### General Description

The PVT322 Series Photovoltaic Relay is a dual-pole, normally open solid-state relay that can replace electromechanical relays in many applications. It utilizes International Rectifier's 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.

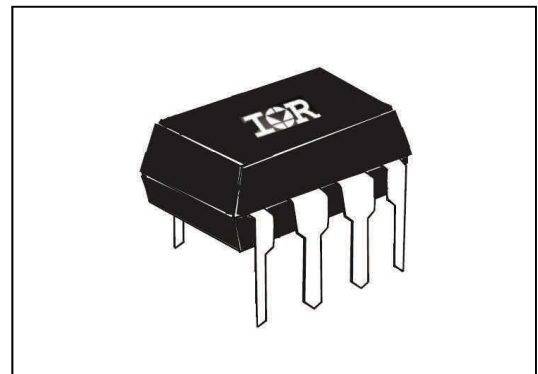
Series PVT322 Relays are packaged in an 8-pin, molded DIP package with either thru-hole or surface mount (gull-wing) terminals. It is available in standard plastic shipping tubes or on tape-and-reel. Please refer to Part Identification information opposite.

### Applications

- On/Off Hook switch
- Tip and Ring Line switching
- General switching

### Features

- HEXFET® Power MOSFET output
- Bounce-free operation
- 4,000 V<sub>RMS</sub> I/O isolation
- Linear AC/DC operation
- Solid-State Reliability
- UL recognized and BAPT certified



### Part Identification

PVT322PbF	thru-hole
PVT322SPbF	Surface-mount
PVT322S-TPbF	Surface-mount, Tape and Reel

*(HEXFET is the registered trademark for International Rectifier Power MOSFETs)*

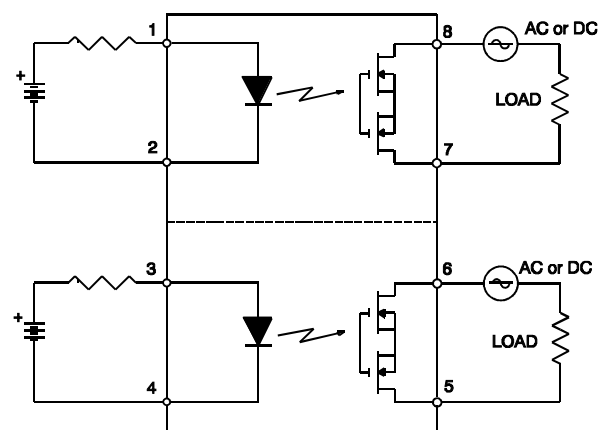
**Electrical Specifications** ( $-40^{\circ}\text{C} \leq T_A \leq +85^{\circ}\text{C}$  unless otherwise specified)

INPUT CHARACTERISTICS	Limits	Units
Minimum Control Current (See figure 1)	2.0	mA
Maximum Control Current for Off-State Resistance @ $T_A=+25^{\circ}\text{C}$	0.4	mA
Control Current Range (Caution: current limit input LED, see figure 5)	2.0 to 25	mA
Maximum Reverse Voltage	6.0	V

OUTPUT CHARACTERISTICS	Limits	Units
Operating Voltage Range	0 to $\pm 250$	$V_{(\text{DC or AC peak})}$
Maximum Load Current @ $T_A=+40^{\circ}\text{C}$ 5mA Control (See figure 1) (single and dual channel operation)	170	mA
Maximum Peak Load Current (10ms maximum duration) (single and dual channel operation)	500	mA
Maximum On-State Resistance @ $T_A=+25^{\circ}\text{C}$ For 50mA Pulsed load, 5mA Control (see figure 3)	10	$\Omega$
Maximum Off-State Leakage @ $T_A=+25^{\circ}\text{C}$ , $\pm 250\text{V}$ (see figure 4)	1.0	$\mu\text{A}$
Maximum Turn-On Time @ $T_A=+25^{\circ}\text{C}$ (see figure 6) For 50mA, 100 $V_{\text{DC}}$ load, 5mA Control	3.0	ms
Maximum Turn-Off Time @ $T_A=+25^{\circ}\text{C}$ (see figure 6) For 50mA, 100 $V_{\text{DC}}$ load, 5mA Control	0.5	ms
Maximum Output Capacitance @ 50 $V_{\text{DC}}$	50	pF

GENERAL CHARACTERISTICS	Limits	Units	
Minimum Dielectric Strength, Input-Output	4000	$V_{\text{RMS}}$	
Minimum Dielectric Strength, Pole-to-Pole	1000	$V_{\text{DC}}$	
Minimum Insulation Resistance, Input-Output, @ $T_A=+25^{\circ}\text{C}$ , 50%RH, 100 $V_{\text{DC}}$	$10^{12}$	$\Omega$	
Maximum Capacitance, Input-Output	1.0	pF	
Maximum Pin Soldering Temperature (10 seconds maximum)	+260	$^{\circ}\text{C}$	
Ambient Temperature Range:	Operating		-40 to 85
	Storage		-40 to 100

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.

**Connection Diagram**


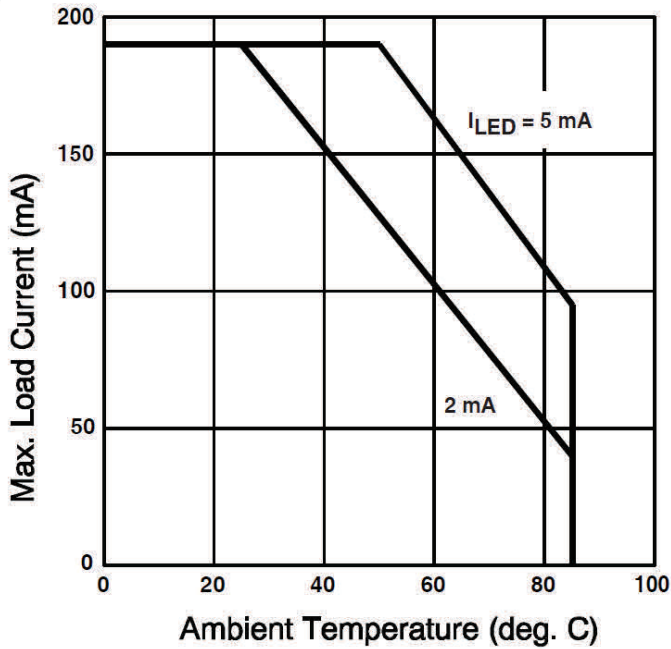


Figure 1. Typical Current Derating Curve

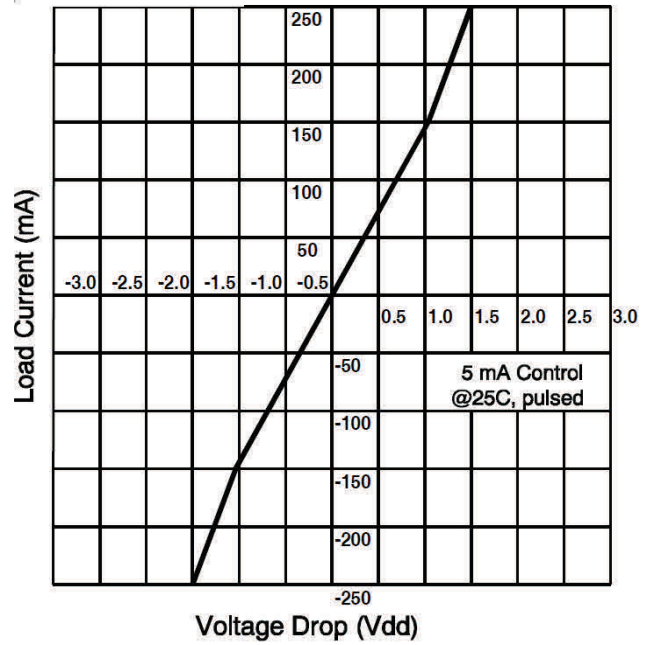


Figure 2. Linearity Characteristics

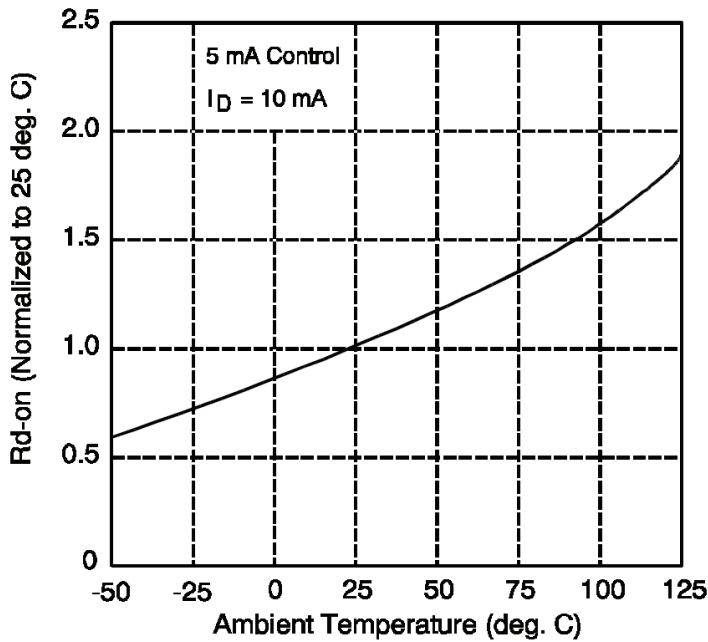


Figure 3. Typical Normalized On-Resistance

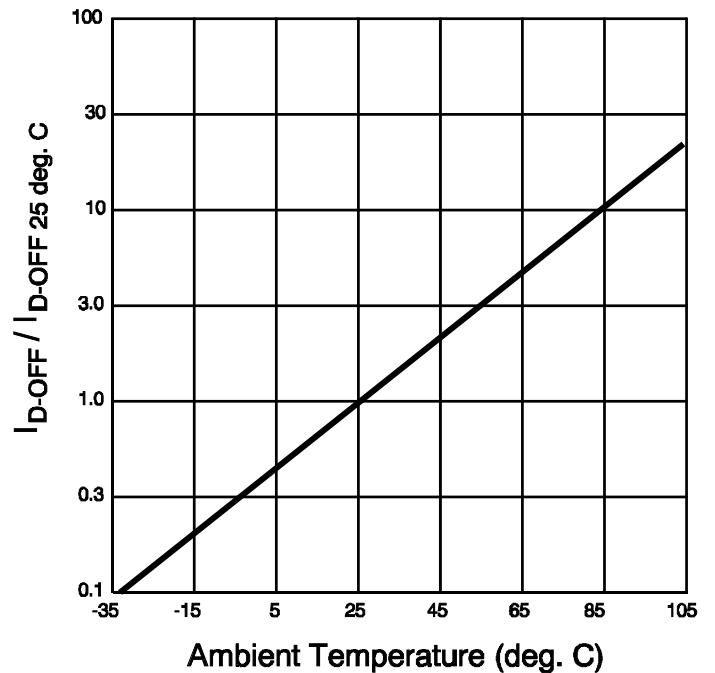


Figure 4. Typical Normalized Off-State Leakage

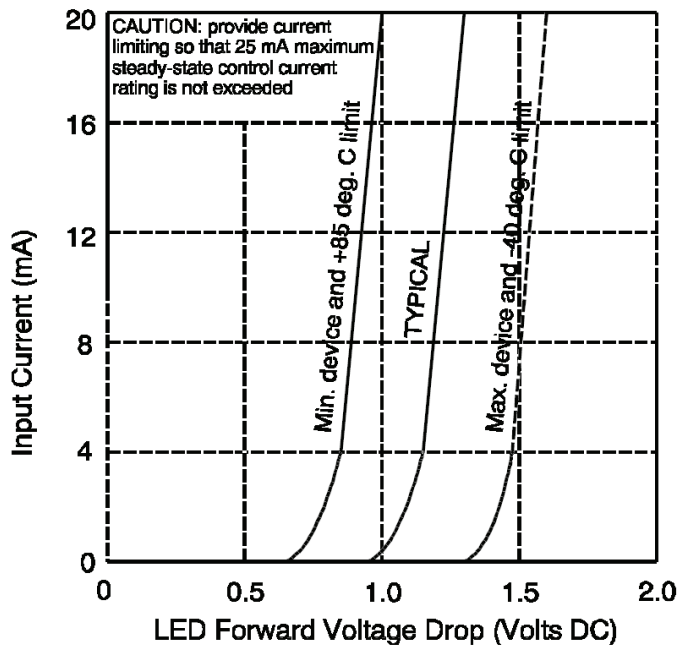


Figure 5. Input Characteristics (Current Controlled)

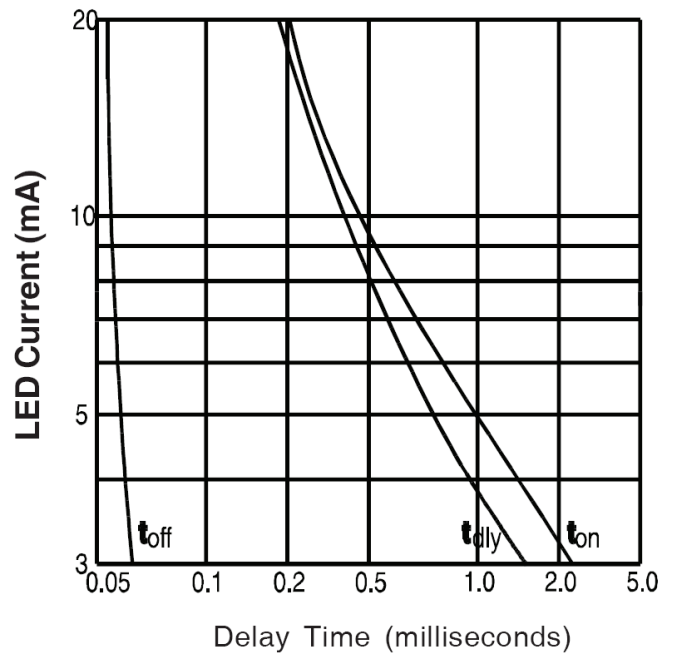


Figure 6. Typical Delay Times

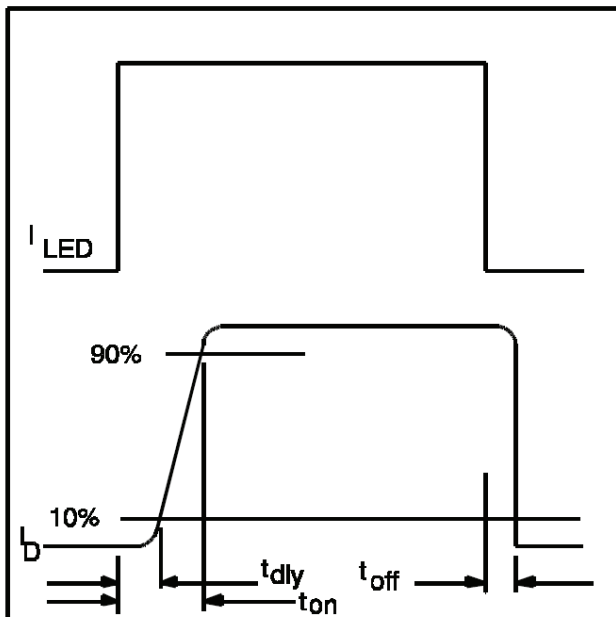


Figure 7. Delay Time Definitions

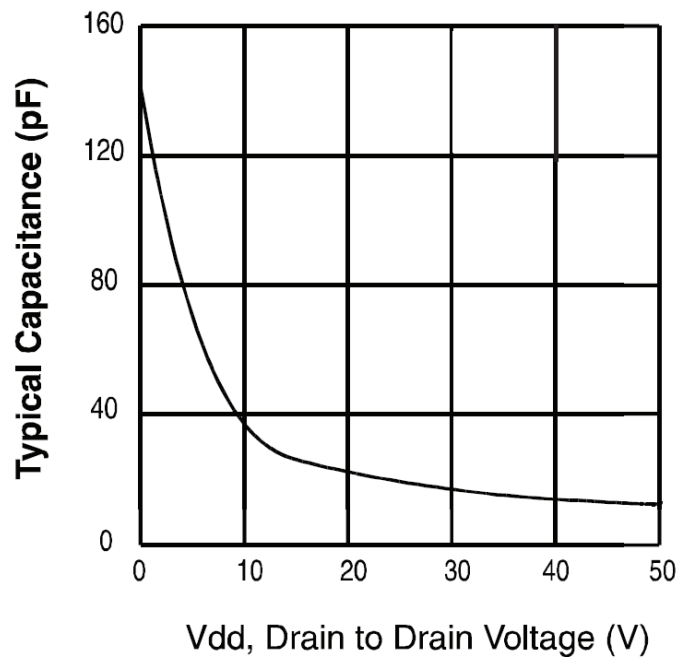
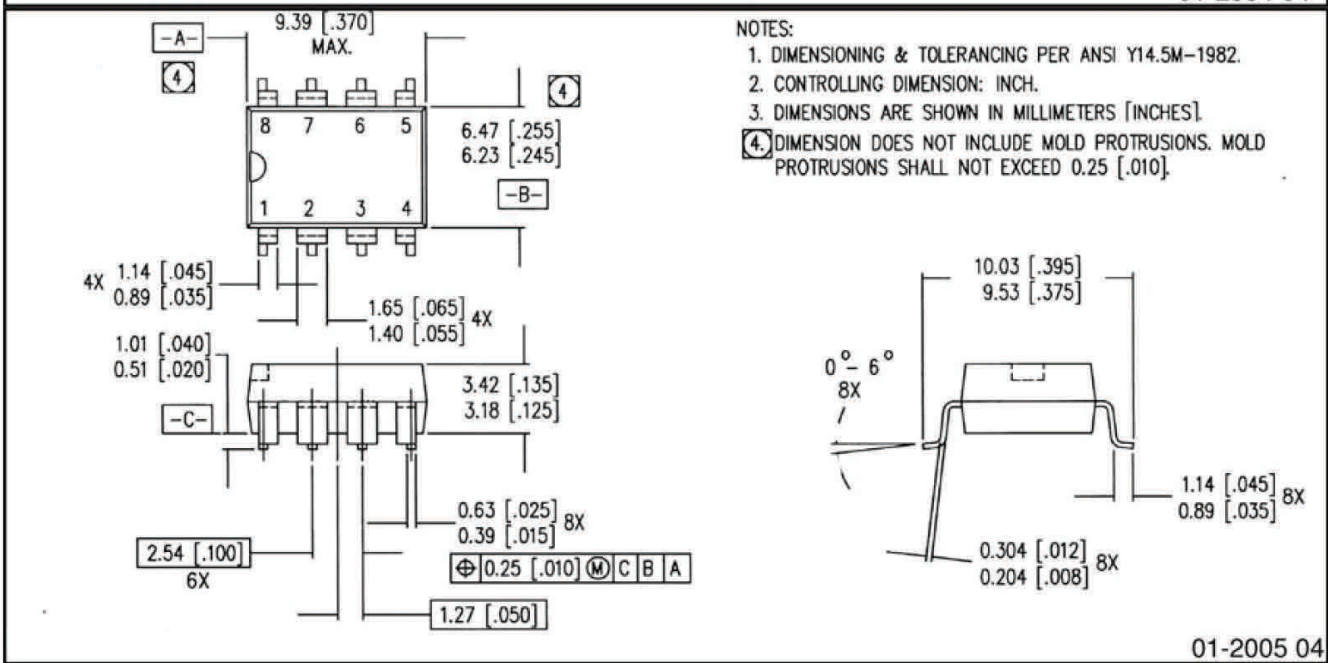
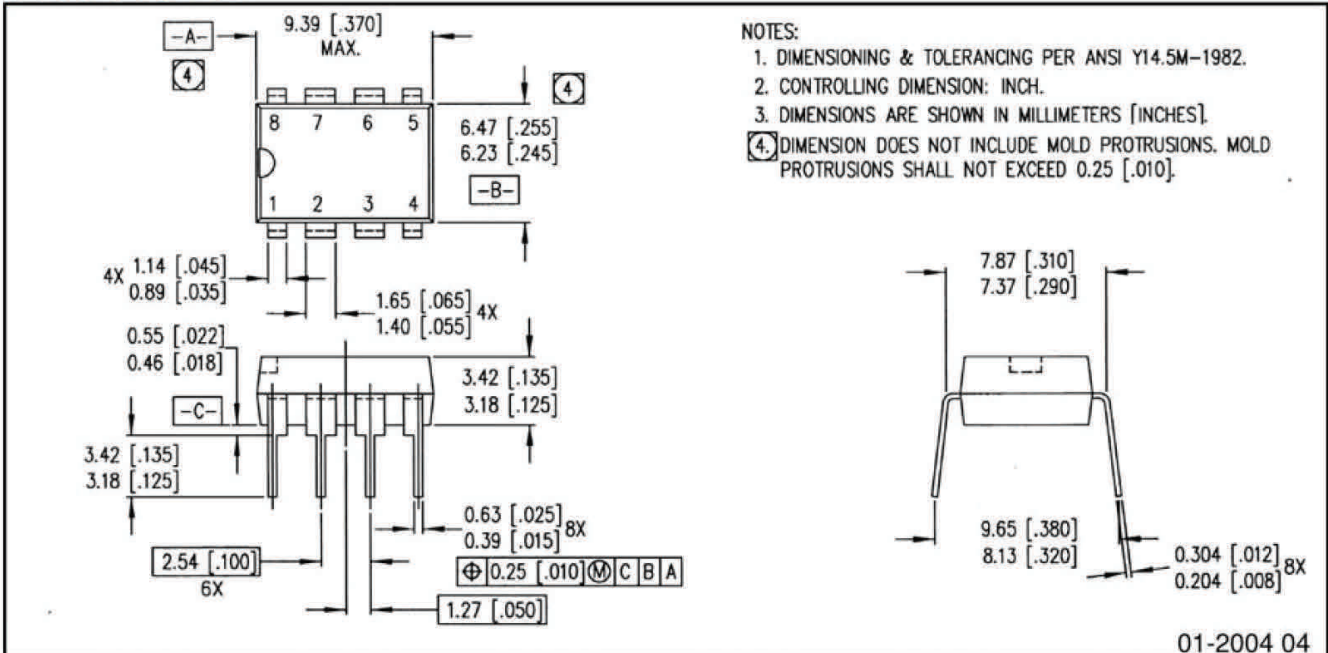


Figure 8. Typical Output Capacitance

Case Outline



Note: For the most current drawing please refer to IR website at: <http://www.irf.com/package/>

**Qualification Information<sup>†</sup>**

<b>Qualification Level</b>	Industrial (per JEDEC JESD47F <sup>†</sup> guidelines)	
<b>Moisture Sensitivity Level</b>	PVT322PbF	N/A
	PVT322SPbF	MSL4
	PVT322PbF	(per JEDEC J-STD-020E & JEDEC J-STD-033C <sup>†</sup> )
<b>RoHS Compliant</b>	Yes	

† Applicable version of JEDEC standard at the time of product release.

**Revision History**

Date	Comment
6/2/2015	<ul style="list-style-type: none"> <li>• Added Qualification Information Table on page 6.</li> <li>• Updated data sheet based wit new IR corporate template.</li> </ul>
8/29/2016	<ul style="list-style-type: none"> <li>• Corrected typo from “Single Pole” to “Dual Pole” on page 1.</li> <li>• Updated "Infineon" logo –all pages.</li> <li>• Updated disclaimer on last page.</li> </ul>

**Published by**  
**Infineon Technologies AG**  
**81726 München, Germany**  
**© Infineon Technologies AG 2015**  
**All Rights Reserved.**

#### **IMPORTANT NOTICE**

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

In addition, any information given in this document is subject to customer's compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer's products and any use of the product of Infineon Technologies in customer's applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

For further information on the product, technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies office ([www.infineon.com](http://www.infineon.com)).

#### **WARNINGS**

Due to technical requirements products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)