

**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)	5.0	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 6)	5.0 to 25.0	mA
Maximum Reverse Voltage	6.0	V

OUTPUT CHARACTERISTICS	Limits	Units
Operating Voltage Range	0 to $\pm 20$	V(DC or AC peak)
Maximum Continuous Load Current @ $40^{\circ}\text{C}$ , 10mA Control (see figure 1)		
A Connection	4.0	A (DC or AC)
B Connection	4.5	A (DC)
C Connection	6.0	A (DC)
Maximum Pulsed Load Current @ $25^{\circ}\text{C}$ , 10mA Control (100 ms @ 10% duty cycle)		
A Connection	8.0	A (DC or AC)
B Connection	9.0	A (DC)
C Connection	15.0	A (DC)
Typical Thermal Resistance ( $T_{thja}$ , Junction-to-Ambient)		
A Connection	85.1	$(^{\circ}\text{C}/\text{W})$
B Connection	122.9	$(^{\circ}\text{C}/\text{W})$
C Connection	89.7	$(^{\circ}\text{C}/\text{W})$
Maximum On-State Resistance @ $25^{\circ}\text{C}$ , 10mA Control 100mA pulsed load, (see figs. 3 & 4)		
A Connection	50	$\text{m}\Omega$
B Connection	25	$\text{m}\Omega$
C Connection	15	$\text{m}\Omega$
Maximum Off-State Leakage @ $T_A = +25^{\circ}\text{C}$ , $\pm 20\text{V}_{\text{DC}}$	1.0	$\mu\text{A}$
Maximum Turn-On Time @ $T_A = +25^{\circ}\text{C}$ (see figure 7), for 1A, 20 $\text{V}_{\text{DC}}$ load, 10mA Control	3.0	ms
Maximum Turn-Off Time @ $T_A = +25^{\circ}\text{C}$ (see figure 7), for 1A, 20 $\text{V}_{\text{DC}}$ load, 10mA Control	0.5	ms
Typical Output Capacitance @ $20\text{V}_{\text{DC}}$ (see figure 2)	400	pF

GENERAL CHARACTERISTICS	Limits	Units
Minimum Dielectric Strength, Input-Output	4000	$\text{V}_{\text{RMS}}$
Minimum Insulation Resistance, Input-Output	$10^{12}$	$\Omega$
Maximum Capacitance, Input-Output, $V_d = 0\text{V}$ , $f = 1\text{MHz}$	1.0	pF
Maximum Pin Soldering Temperature	+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 Diagrams

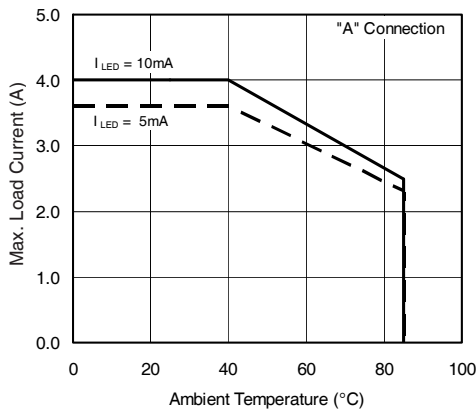
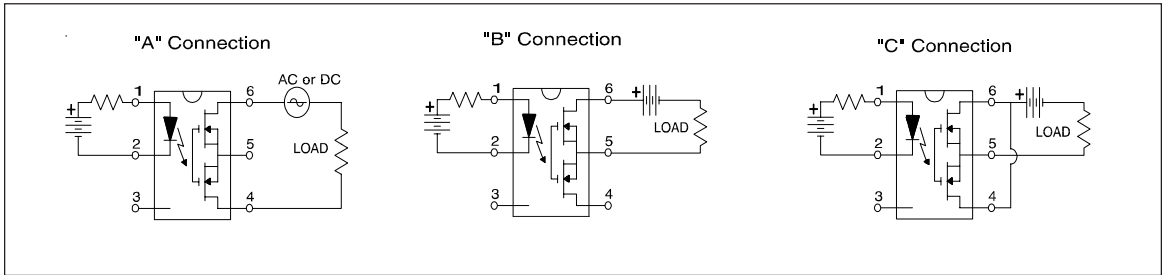


Figure 1. Current Derating Curves\*

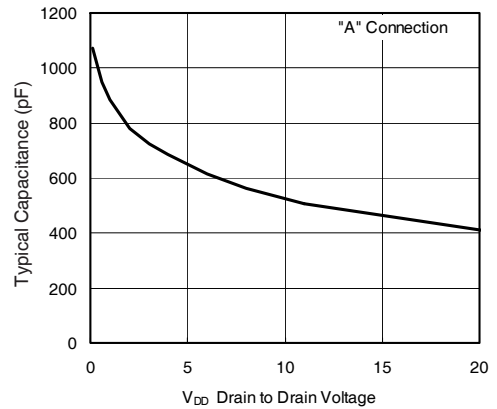


Figure 2. Typical Output Capacitance

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

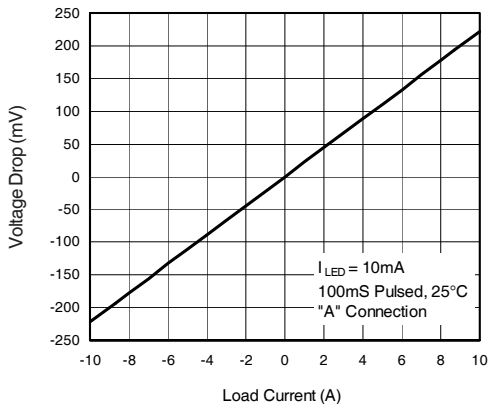


Figure 3. Linearity Characteristics

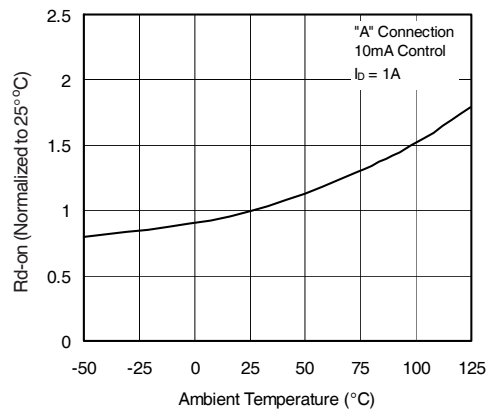
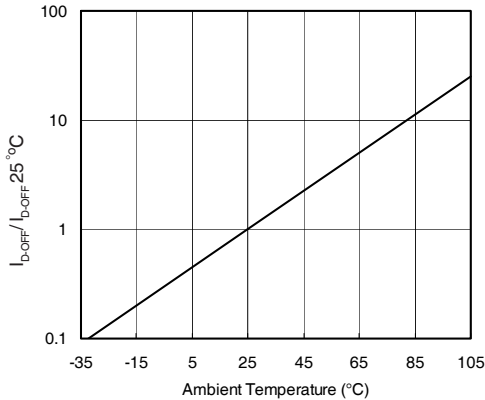
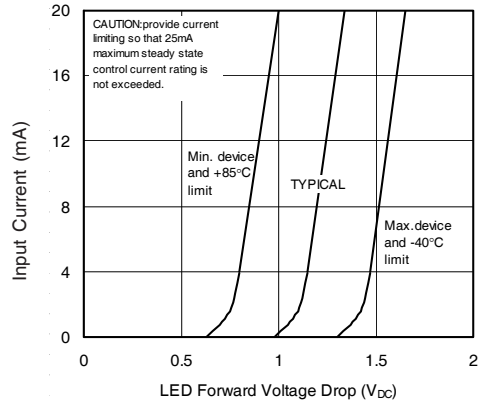


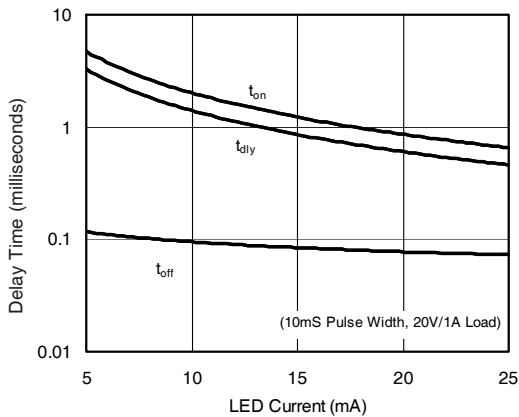
Figure 4. Typical Normalized On-Resistance



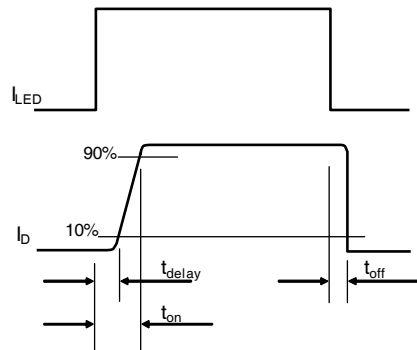
**Figure 5. Typical Normalized Off-State Leakage**



**Figure 6. Input Characteristics (Current Controlled)**

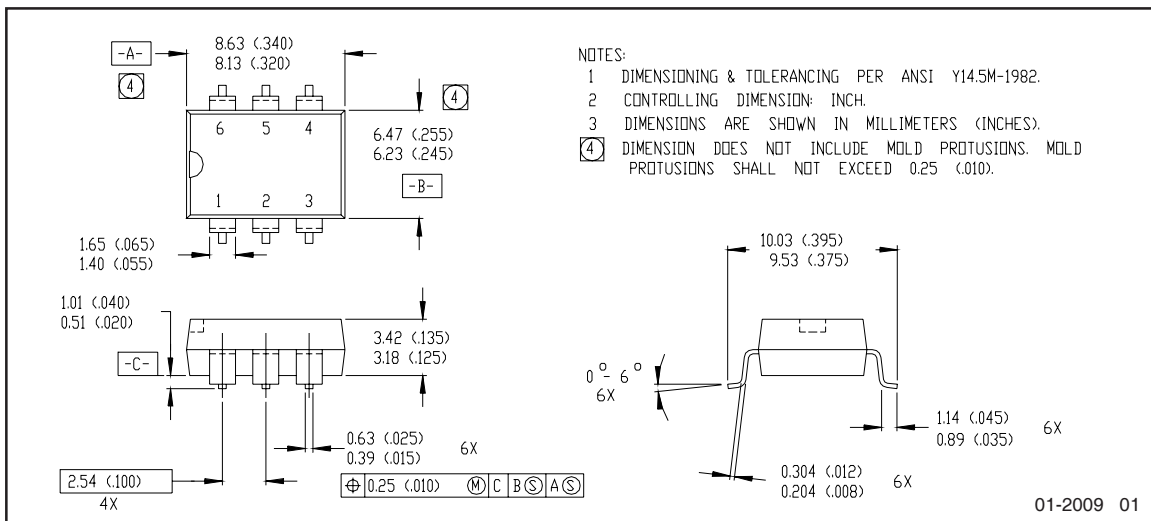
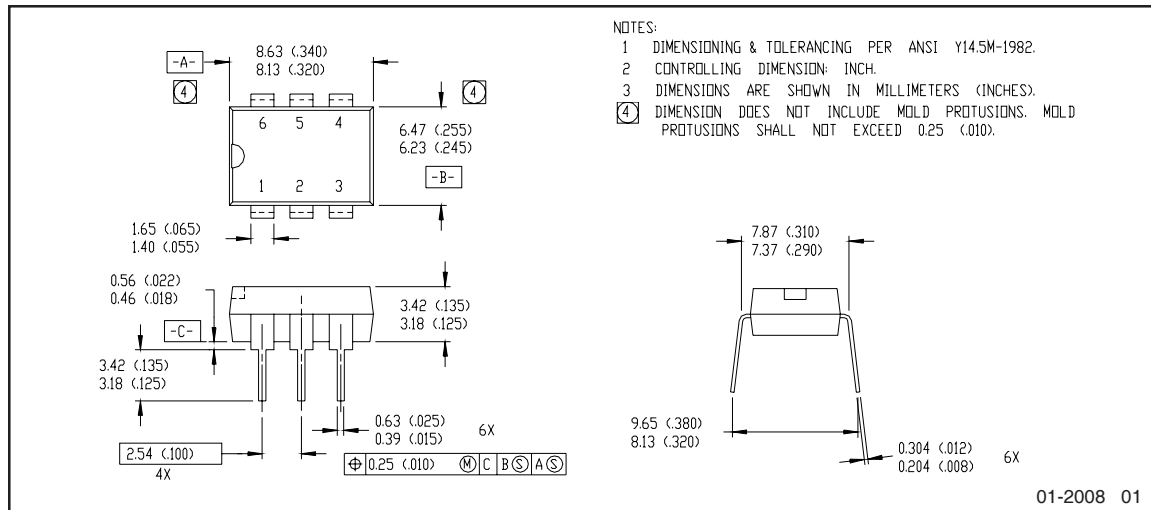


**Figure 7. Typical Delay Times**



**Figure 8. Delay Time Definitions**

## Case Outlines



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

### Qualification information<sup>†</sup>

Qualification level	Industrial (per JEDEC JESD471 <sup>††</sup> guidelines)	
Moisture Sensitivity Level	PVN012APbF	N/A
	PVN012ASPbF	MSL4
	PVN012AS-TPbF	(per JEDEC J-STD-020E & JEDEC J-STD-033C <sup>††</sup> )
RoHS compliant	Yes	

<sup>†</sup> Qualification standards can be found at International Rectifier's web site: <http://www.irf.com/product-info/reliability>

<sup>††</sup> Applicable version of JEDEC standard at the time of product release

### Revision History

Date	Comments
5/11/2015	<ul style="list-style-type: none"> <li>Added Qualification Information Table on page 6</li> <li>Updated data sheet with new IR corporate template</li> </ul>

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Data and specifications subject to change without notice

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