PD-97579A

International **IGR** Rectifier

Radiation Hardended, 100V, Single 10A, Solid State Relay

Product Summary

Part Number	Voltage	Current	Configuration	Rad Level
RDHA710FR10A1NK	100V	10A	Single DC	100K

RDHA710FR10A1NK



Description

The RDHA710FR10A1NX is a radiation hardened Solid State Relay in a hermatic package. It is configured as a single pole single throw (SPST) normally open relay. This device is characterized for 100KRad (Si) total ionizing dose. The output MOSFET utilizes International Rectifier's R6 Technology.

Features:

- Total Dose Capability to 100KRad (Si)
- Optically Coupled
- 1000VDC Input-to-Output and Pin-to-Case Isolation
- Hermetically Sealed Ceramic Package

Absolute Maximum Ratings @ Tj = 25°C (unless otherwise specified)

Parameter		Value	Units	
Output Withstand Voltage		100	V	
Output Current S	Ι _Ο	10	- A	
Peak Output Current ©	I _{O pk}	20		
Input Forward Current	١ _F	40		
Peak Input Forward Current (t ≤1.0ms)	I _{F pk}	100	mA	
Peak Input Reverse Voltage (t ≤1.0ms)	V _R	5.0	V	
Power Dissipation	P _{DISS}	4.0	W	
Operating Temperature Range	Т _Ј	-55 to +125		
Storage Temperature Range	Τ _S	-65 to +150 °C		
Lead Temperature	ΤL	300		
Weight		2.5 (Тур)	g	

For notes, please refer to page 2 www.irf.com

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Parameter	Group A	Test Conditions	Symbol	Min.	Тур.	Max.	Units
	Subgroups						
Output On-Resistance	1	I _F = 10mA, I _O = 4.0A	R _{DS(ON)}		0.012	0.020	Ω
	2				0.018	0.040	
Output Leakage Current	1	I _F = 0, V _{OUT} = 100V	Ι _Ο			10	μA
	2					25	
Input Forward Voltage	1, 2, 3	I _F = 10mA	V _F	1.0		1.85	V
Input-to-Output Leakage Current	1		I _{L-O} I _{CASE}			1.0	μΑ
Pin-to-Case Leakage Current		VI-O = 1000Vdc, dwell = 5s					
Turn-On Time ©3④	9 10 11	$I_F = 0$ to 10mA, $V_{Bus} = 28V$,	t _{on}			8.0	• ms
		I_{O} = 2.5A, Duty Cycle \leq 1.0%					
Turn-Off Time ②③④	I 0 10 11 I	$I_{F} = 0$ to 10mA, $V_{Bus} = 28V$,	t _{off}	-		0.3	
		I_{O} = 2.5A, Duty Cycle \leq 1.0%					
Output Capacitance ①		$I_F = 0, V = +25V, f = 1MHz, T_C = 25C$	C _{OSS}		1600		pF
Thermal Resistance ①			R _{THJC}			5.0	°C/W
MTBF		MIL-HDBK-217F, TC = 25°C		6.5			MHrs

Electrical Characteristics @ -55°C≤T_C≤+125°C (Unless Otherwise Specified)

Notes for Maximum Ratings and Electrical Characteristic Tables

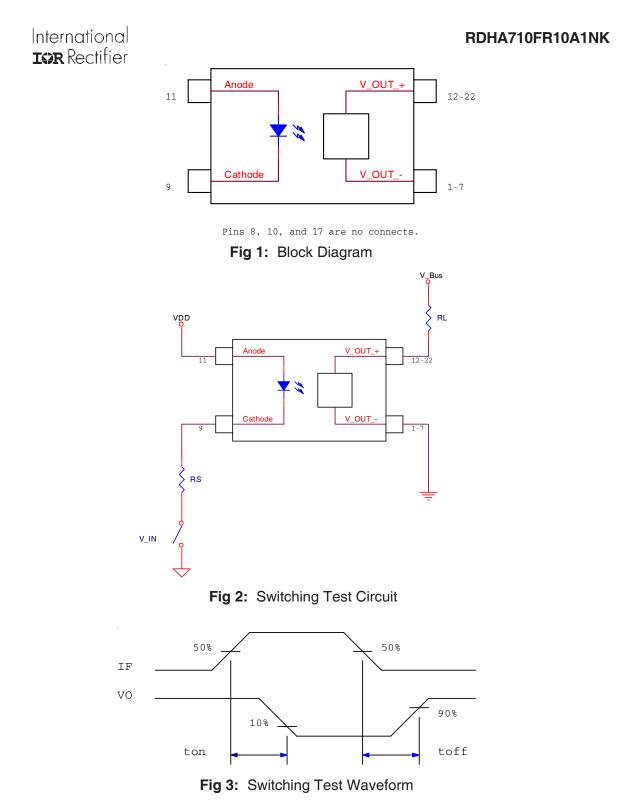
① Specification is guaranteed by design.

② Optically coupled Solid State Relays (SSRs) have relatively slow turn-on and turn-off times. Care must be taken to insure that transient currents do not cause a violation of SOA. If transient conditions are present, IR recommends a complete simulation to be performed by the end user to ensure compliance with SOA requirements as specified in the IRHNA67160 data sheet.

③ Reference Fig. 2 for Switching Test Circuit and Fig. 3 for Switching Test Wave Form.

Turn-on Time (ton) includes the turn-on delay and rise time; Turn-off Time (toff) includes the turn-off delay and fall time.
While the SSR design meets the design requirements specified in MIL-PRF-38534, the end user is responsible for

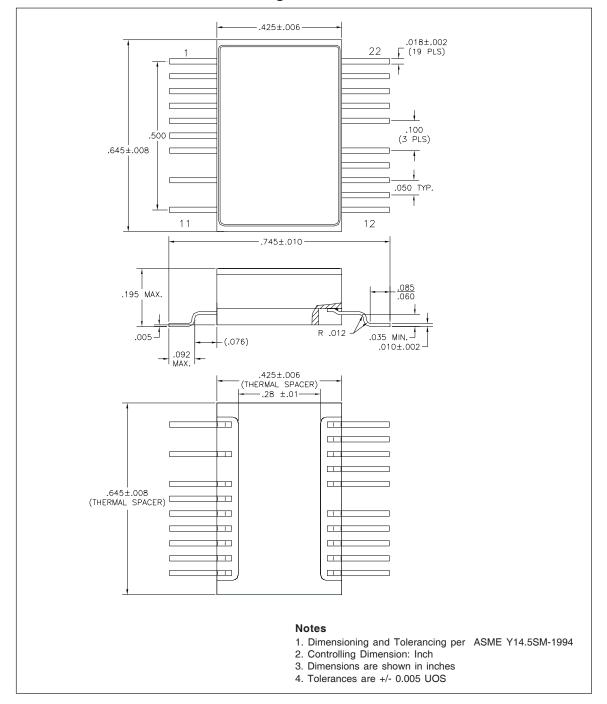
product derating, as applicable for the application.



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International **ICPR** Rectifier

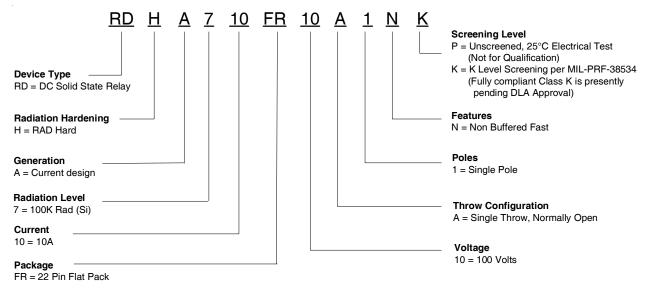


Case Outline and Dimensions - Package - 22 Pin Flat Pack

RDHA710FR10A1NK

International

Part Numbering Nomenclature



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