

Interpower

ZRA Series 10, 30 and 45 amp DC Controlled SSR for up to 280V Line Switching Applications

- Excellent Thermal Characteristics and Performance
- Zero Turn-on giving minimal EMI and RFI
- Compatible with Standard Logic Families
- 600 or 800 VDRM
- UL VDE and other major approvals
- Military and Civil Aviation Approvals

The ZRA series of optically coupled general purpose Solid State Relays have been further improved increasing reliability and facilitating the use of advanced production methods. Recognised materials are used throughout and a minimum 2mm wall thickness has been introduced. The new series is electrically and physically compatible with earlier versions (except for a 1mm increase in overall height due to increased insulation thicknesses).

The back to back SCR assembly is solder bonded throughout giving excellent thermal and electrical characteristics. Input to output circuit isolation is 4KV rms.

The 10 amp version has a triac power switch and the 30 and 45 amp versions use an FRE inverse parallel back to back SCR assembly.

The series has a unique tough and highly reliable construction which includes internal copper buss links to carry the load current direct from the power terminals to the power semiconductors. The series meets all currently known requirements of the International standards institutions



ZRA Series

MAXIMUM RATINGS $T_a = 25^\circ\text{C}$ (Unless otherwise stated)	ZRA 6010A ZRA 8010A	ZRA 6030A ZRA 6045A ZRA 8030A ZRA 8045A
Input Voltage	32V	32V
Reverse Input Voltage	32V	32V
Line Voltage (Nominal)	250V RMS	250V RMS
Repetitive Peak Off State Voltage V_{DRM} (6000 series)	600V	600V
Repetitive Peak Off State Voltage V_{DRM} (8000 series)	800V	800V
On State Current *XX10 -	10A	-
XX30	-	30A
XX45	-	45A
Non Repetitive On State Current		
I_{TSM} $T_h/s=50^\circ\text{C}$, 10mS	115A	-
I_{TSM} $T_h/s=65^\circ\text{C}$, 10mS	-	250A 375A
Fusing current I_t 10mS 0.5 cycle $T_h/s=50^\circ\text{C}$	66A S	-
I_t 10mS 0.5 cycle $T_h/s=65^\circ\text{C}$	-	310A's 700 A's
Off state dV/dt (typ)	200V/ μs	200V/ μs
Commutating dV/dt	Snubbed for 0.5PF	Snubbed for 0.5PF
Operating Temperature Range T_a^*	-40°C to $+100^\circ\text{C}$	-40 to $+100^\circ\text{C}$
Isolation Input to Output 1 Sec	4000V RMS	4000V RMS
Isolation Input or Output to Case 1 Sec	2500V RMS	4000V RMS

CHARACTERISTICS $T_a = 25^\circ\text{C}$ $f = 50\text{Hz}$ Unless otherwise stated

PARAMETER	CONDITION	MIN	MAX	MIN	MAX
Input Circuit					
Must Operate Voltage			3V		3V
Must Release Voltage			1V		1V
Input Resistor:	(See Fig 2 & 3)				
Output Circuit					
Line Voltage V RMS		28V	280V	28V	280V
Off State Current mA RMS	$V_{line} = 280\text{V RMS}$		6.5mA		6.5mA
On state voltage V_t	10 A RMS $T_j = 25^\circ\text{C}$		1.6V pk		
	30 A RMS $T_j = 25^\circ\text{C}$				1.5V pk
	45 A RMS $T_j = 25^\circ\text{C}$				1.6V pk
	See 'HINTS' for lower currents				
Minimum Load Current (recommended) A RMS		0.1A		0.5A	
Frequency Range Hz		47Hz	63Hz	47Hz	63Hz
Turn on time t_{on}			0.5 cycle		0.5 cycle
Turn off time t_{off}			0.5 cycle		0.5 cycle
General					
Thermal Resistance $^\circ\text{C/W}$	XX10		4.3 $^\circ\text{C/W}$		11 $^\circ\text{C/W}$
	XX30				0.9 $^\circ\text{C/W}$
	XX45				

* For further electrical information and outline drawing please see pages 16 and 17

