

## FRS22012 & SLR3 SERIES

MINIATURE LATCHING, 1.5A, 3.5KV, REED RELAY



Latching RF relay designs for manpack, portable HF radio systems, from 1-30MHz, where power resources are limited and board space is at a premium.

These relays have separate set and reset coils to simplify board design.

Capable of carrying up to 1.5A current at 30MHz and withstanding either 1.5, 3 or 3.5kV between contacts.

The FRS22012 is a fast latching relay with both RF and magnetic screening, that enables switching with coil pulse lengths down to 0.5ms.\*\*1

## **Features**

- Bistable Latching relay
- 1.5A Carry current (up to 30MHz)
- 3.5kV DC Isolation
- 0.5ms Coil pulse length version

# SPECIFICATIONS

Contact	Unit	Condition	FRS22012	SLR305SD01	SLR305SD02
Contact Material			Rhodium	Rhodium	Rhodium
Switch Action			Bistable	Bistable	Bistable
Carry Current Max	А	RMS@30MHz	1.5	1.5	1.5
Switching Current	А	DC max	0.5	0.5	0.5
Switching Power	W	max	10	10	10
Switching Voltage	V	max	20	20	20
Isolation	kV	DC max	3.5	1.5	3.0
Capacitance	pF	coil/screen gnd	0.2	<1	<1
<b>Contact Connections</b>		pin position	3 & 4	3 & 4	3 & 4
Lifetime	operations	dry switching	10 <sup>9</sup>	10 <sup>9</sup>	10 <sup>9</sup>
Contact Resistance	mΩ	max (typical)	80 (30)	80 (30)	80 (30)
Insulation Resistance	mΩ	max (typical)	10 <sup>10</sup> (10 <sup>13</sup> )	1010 (1013)	10 <sup>10</sup> (10 <sup>13</sup> )
ESR at 1.5A, 30MHz	mΩ	typical	400	400	400



Coil at 20°C	Unit	Condition	FRS22012	SLR305SD01	SLR305SD02	
Operating Voltage	V	Nominal	12	5	5	
Resistance	Ω	Nominal	500	300	300	
RF Screening			Partial	None	None	
RF Screening Connection		pin position	7			
Coil Connections	Set	pin position	5 & 6 (+)	5 & 6 (+)	5 & 6 (+)	
	Reset	pin position	1 & 2 (+)	1 & 2 (+)	1 & 2 (+)	
Relay						
Construction			Covered	Open Frame	Open Frame	
Pulse Length	ms	Minimum	0.5	2	2	
Operate Time	ms	diode fitted	0.5	2	2	
Isolation Contact to all other Terminals	kV	DC max	4	4	4	
Isolation Contact to Screen	kV	DC max	250	250	250	
Capacitance Contact to all other Terminals	pF	contact open	3	2.5	2.5	
<b>Environmental Conditions</b>						
Storage Temperature	°C	range	-55 to +125			
Operating Temperature	°C	range	-40 to +85			
Weight	gm	typical	11	7	7	

Please refer to this document for circuit design notes: https://www.cynergy3.com/blog/reed-relay-application-notes

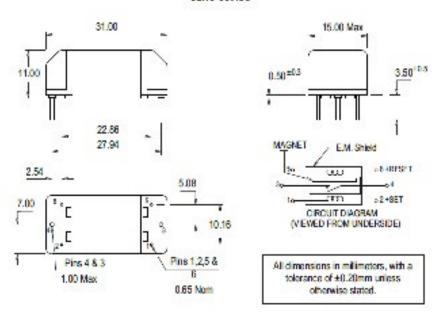




All dimensions are in millimeters.

#### FRS22012 12.0 (0.47°) Pin Size 7.62 10.16. 4.0 Pins 3 & 4 1.0 (0.039 "dia. (0.40°) 00.30% (0.15") Pins 1, 2, 5 & 6 0.7(0.026\*)dia. 75.4 10.16 Pin 7 0.65mm square(0.039\*) (1.00°) $(0.40^{\circ})$ MAGNE E.M. Shield 62 14.0 TRESET (0.55%) 06 70. 6 SET 30.67 F.S. Sheld E.S. Shield (1.20°)CIRCUIT DIVIGRAM (VIEWED FROM UNDERSIDE)

### SLR3 series



Please refer to this document for circuit design notes:

https://www.cynergy3.com/blog/reed-relay-application-notes

Made in the UK

Datasheets provided by Sensata Technologies, Inc., its subsidiaries and/or affiliates ("Sensata") are solely intended to assist third parties ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, valuation, and judgment in designing Buyer's systems and products. Sensata datasheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular datasheet. Sensata may make corrections, enhancements, improvements, and other changes to its datasheets or components without notice. Buyers are authorized to use Sensata datasheets with the Sensata component(s) identified in each particular datasheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATASHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATASHEETS OR USE OF THE DATASHEETS, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATASHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at www.sensata.com. SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY, AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

## **CONTACT US**

+44 (0)1202 897969 support@sensata.com Cynergy3 Components Ltd. 7 Cobham Road, Ferndown Industrial Estate, Wimborne, Dorset, BH21 7PE, United Kingdom