

# FRS22012 SLR3 series

Miniature Latching, 1.5A,3.5kV, Reed Relay



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

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

Contact Specification	unit	condition	FRS22012	SLR305SD01	SLR305SD02
Contact material			Rhodium	Rhodium	Rhodium
Switch action			Bistable	Bistable	Bistable
Carry Current max	A	RMS@30MHz	1.5	1.5	1.5
Switching Current	A	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
Contact connections		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	mW	max (typical)	80 (30)	80 (30)	80 (30)
insulation Resistance	mW	max (typical)	10 <sup>10</sup> (10 <sup>13</sup> )	10 <sup>10</sup> (10 <sup>13</sup> )	10 <sup>10</sup> (10 <sup>13</sup> )
ESR at 1.5A, 30MHz	mW	typical	400	400	400

#### Coil at 20°C

Operating Voltage	V	Nominal	12	5	5
Resistance	W	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	2.5	2.5	2.5

#### Environmental

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:-  
<http://www.cynergy3.com/blog/application-notes-reed-relays-0>

Cynergy3 Components Ltd.  
 7 Cobham Road  
 Ferndown Industrial Estate  
 Wimborne, Dorset BH21 7PE  
 Telephone +44 (0) 1202 897969

Email:sales@cynergy3.com

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FRS22000 2016

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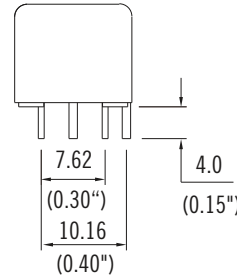
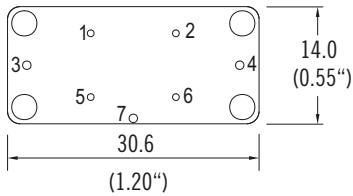
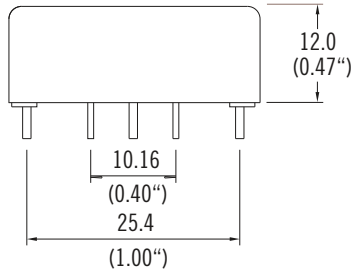
## Miniature Latching, 1.5A,3.5kV, Reed Relay



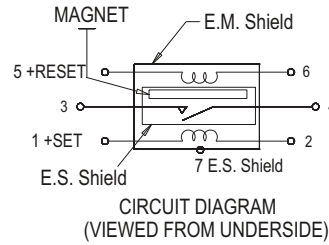
### Mechanical Dimensions

All dimensions are in millimeters (inches)

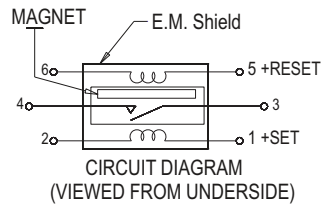
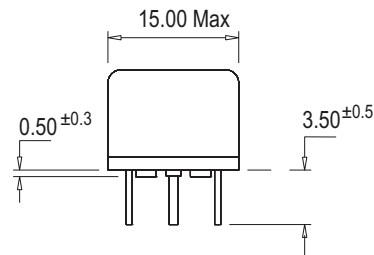
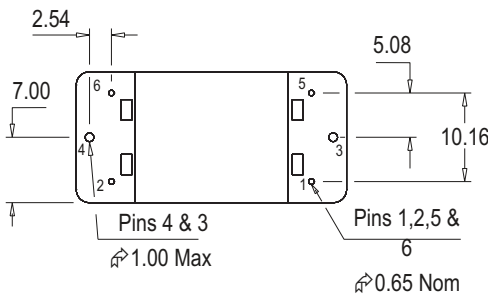
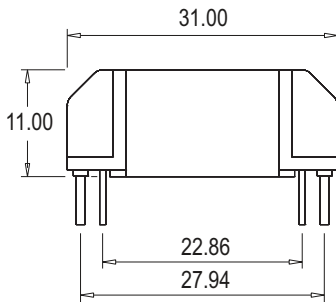
### FRS22012



	Pin Size
Pins 3 & 4	1.0 (0.039")dia.
Pins 1, 2, 5 & 6	0.7 (0.026")dia.
Pin 7	1.0 x 1.0 Square(0.039")



### SLR3 series



All dimensions in millimeters, with a tolerance of  $\pm 0.20\text{mm}$  unless otherwise stated.

Please refer to this document for circuit design notes:-  
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