	<b>Shunt Resistor Current Sensor</b>  <b>CSSR Series</b>	Document No	CSSR-107CS002
		Issued date	2018/08/01
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**1. Scope :**

This specification applies to the products of CSSR series manufactured by HEYEH ELECTRONICS INDUSTRY CO., LTD.

**2. Type Designation :**

<u>CSSR</u>	<u>59</u>	<u>E</u>	<u>E</u>	<u>G</u>	<u>M</u>	<u>1L0</u>
Item	Series	Resistance Tolerance	Packaging Material	Rated Power	Material	Resistance
39:3920		F:±1%	P:Paper	E=5W	M=CuMn	e.g:
59:5930		G:±2%	E: Emboss	G=7W	N=CuMnNi	0L5=0.5mΩ
					S=CuMnSn	1L0=1mΩ
					A=NiCrAlSi	

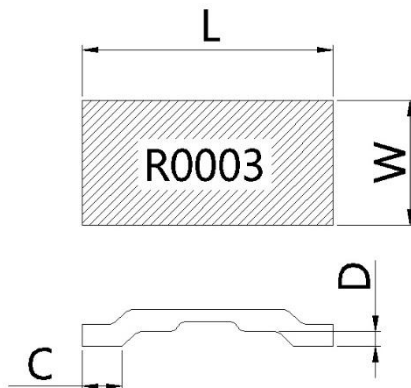
**3. Construction and Dimension :**

**3.1 Construction:**




**CSSR39 / 59**

**3.2 Dimension:**



UNIT : mm

Style	mm	inch	L	W	C	D	Material
CSSR39	9950	3920	9.70±0.25	5.05±0.25	1.50±0.3	0.40±0.25	Strip : Ni Alloy
CSSR59	15075	5930	15.0±0.25	7.70±0.25	4.20±0.3	0.40±0.25	

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#### 4. Features :


Type	CSSR39	CSSR59
Size (mm)	10050	15075
(inch)	3920	5930
Rated Power	5 ~ 7 W	7 ~ 10 W
Resistance Range	0.3 ~ 4 mΩ	0.3 ~ 3 mΩ
Operating Temperature Range	-55°C to +155°C	
Temperature Coefficient	±100 ppm/°C	±100* ppm/°C
Component temperature coefficient (including terminal) (1) ppm/°C	± 75 for 7 mΩ to 0.5 Ω	
TCR measured from -55 °C to 170 °C	± 110 for 5 mΩ to 6.9 mΩ	
	± 150 for 3 mΩ to 4.9 mΩ	
	± 275 for 1 mΩ to 2.9 mΩ	
	± 400 for 0.5 mΩ to 0.99 mΩ	
Element TCR (2) ppm/°C	< 20	
Resistance Tolerance	F:±1% G:±2%	

\*Resistance not included in the table could be available, please contact the factory.

\*Rated Power in the table indicates a normal rating.

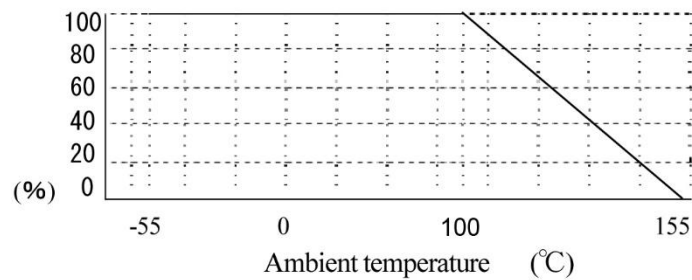
#### 5. Tests and Requirements :

Test	Procedure	Test Limits
Temperature Coefficient	+25°C ~ +125°C	Refer 4.0
Life / Endurance	1000 hours at 70±5°C, 1.5 hours ON, 0.5 hour OFF, still air required	< ±1%
Short Time Overload	5 X rated power for 5sec	< ±0.5% No visible damage
Moisture no Load	85°C, 85%RH, 1000hrs	< ±1%
Temperature cycle	-55°C & +155°C, 300cycle, 15min per extreme condition	< ±1%
Resistance to Soldering Heat	260±5°C for 10±1 seconds immersion time	< ±0.5% No visible damage
Solderability	245±3°C, Dipping time: 3±0.5seconds	Well tinned (At least 95% covered) No visible damage
High Temperature Exposure / Endurance at upper category temperature	155±5°C, 1000hrs, unpowered	< ±1%

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Low Temperature Storage	-55°C, 1000hrs	<±0.5%
Board Flex / Substrate Bending	2mm bending Bending time: 60±1 seconds	< ±1%
Insulation Resistance	100V DC for 1 minute	>100 MΩ

### 5.1 Rated Power - Derating Curve



### 5.2 Rated Voltage, Rated Current

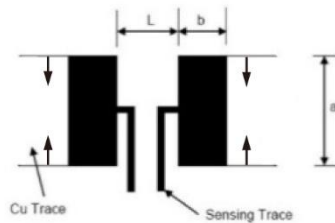
Rated Voltage and current are determined from the following :

$$E = \sqrt{P \times R}$$


$$I = \sqrt{P / R}$$

E:Rated Voltage (V)    I :Rated Current(A)    P:Rated Power (W)    R:Resistance (Ω)

### 6. Recommended Solder Pad Dimension



Type	a	b	L
CSSR39	5.15	1.55	6.60
CSSR59	7.70	4.20	6.60

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**7. Number of Package :**

1000 Pieces / reel

**8. Label :**



**CSSR3920 +-1% 5W MR001 1000 pcs**

Series    Tolerance    Rated Power    Material    Resistance    Qty

禾野電子工業有限公司  
Heyeh Electronics Industry Co., Ltd.



訂單號碼: A 1070801-01  
 客戶名稱: XXX有限公司  
 品名規格: CSSR3920 ± 1% 5W 1mΩ  
 料號: CSSR39FEA MR001  
 批號: HY 18K30-39012  
 日期: 2018/11/30  
 數量: 1000 PCS




**9. Storage Conditions:**

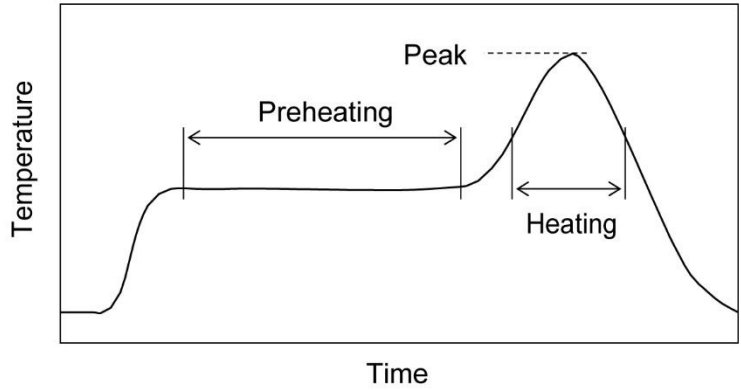
Temperature: 5°C~35°C, Humidity: 40%~75%

**10. Shelf Life:**

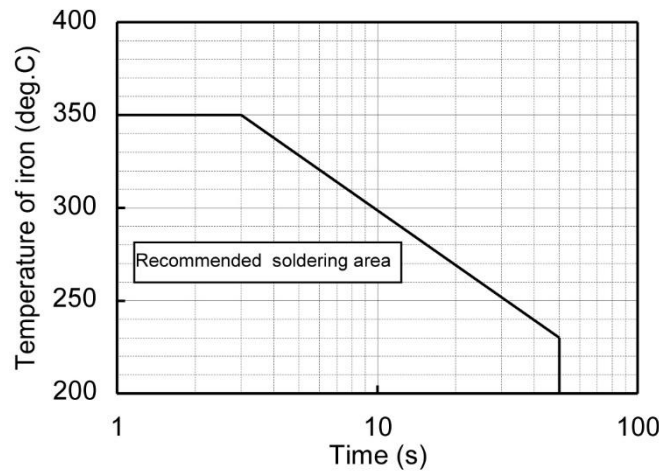
6 months from manufacturing date.

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**11. Recommend IR – Reflow profile : (solder : Sn-3.0Ag-0.5Cu)**



- Peak : Max. 260°C ,Max. 10 sec**
- Preheating : 150 to 180 °C, 60~120 sec**
- Heating : Above 230°C, 30~40 sec**



**SolderIron : 350±10°C , 3+1/-0 sec**

**12. Manufacturing Country & City:**

HEYEH ELECTRONICS INDUSTRY CO., LTD. ( Taoyuan City, Taiwan)

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