

## Size 3920 (10x5.2mm) Current Shunt Resistors

## SRC39 Series



SRC39 Series Current Shunt Resistors aid precision measurement and high-current applications. A wide range of precision shunts, designed for use with kilowatt-hour meters and other high-current applications where a high level of accuracy is required, is now available from PROSEMI.

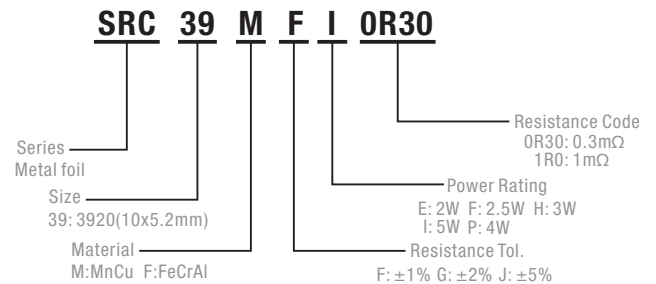
### Features

- Power rating up to 5 W at 100°C
- Excellent long term stability
- Continuous current load up to 160A at 0.2mΩ
- Halogen free, lead free and RoHS compliant



### Applications

- Power modules
- Frequency converters
- Current sensor for power hybrid sources
- High current for automotive
- Lithium battery protection board



Part Number	Power Rating $P_{100^{\circ}\text{C}}$ (W)	Resistance Range (mΩ)	TCR (ppm/°C)	Thickness (mm)	Material
SRC39F_E5R0	2	5	±50	0.85±0.1	FeCrAl
SRC39F_F4R0	2.5	4	±50	0.85±0.1	FeCrAl
SRC39F_H3R0	3	3	±50	0.95±0.1	FeCrAl
SRC39F_P2R0	4	2	±50	1.19±0.1	FeCrAl
SRC39M_I1R0	5	1	±50	0.92±0.1	MnCu
SRC39M_IOR50	5	0.5	±50	1.36±0.1	MnCu
SRC39M_IOR30	5	0.3	±70	1.92±0.1	MnCu
SRC39M_IOR20	5	0.2	±150	1.95±0.1	MnCu

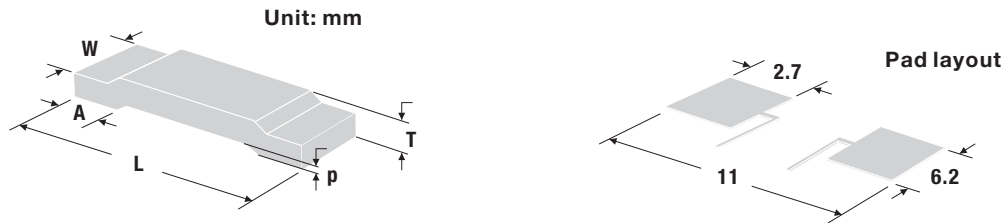
- Applicable temperature range of -55°C to +170°C
- Power rating is guaranteed for use an aluminum substrate (MCPCB) Part
- Number definition “\_” of Resistance Tolerance

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### Dimension



Type	L	W	T	A	p
SRC39F_E5R0	10.2±0.2	5.2±0.1	0.85±0.1	1.8±0.1	0.5±0.1
SRC39F_F4R0	10.2±0.2	5.2±0.1	0.85±0.1	1.8±0.1	0.5±0.1
SRC39F_H3R0	10.2±0.2	5.2±0.1	0.95±0.1	1.8±0.1	0.5±0.1
SRC39F_P2R0	10.2±0.2	5.2±0.1	1.19±0.1	1.8±0.1	0.5±0.1
SRC39M_I1R0	10.2±0.2	5.2±0.1	0.92±0.1	1.8±0.1	0.5±0.1
SRC39M_I0R50	10.2±0.2	5.2±0.1	1.36±0.1	1.8±0.1	0.5±0.1
SRC39M_I0R30	10.2±0.2	5.2±0.1	1.92±0.1	1.8±0.1	0.5±0.1
SRC39M_I0R20	10.2±0.2	5.2±0.1	1.95±0.1	1.8±0.1	0.5±0.1

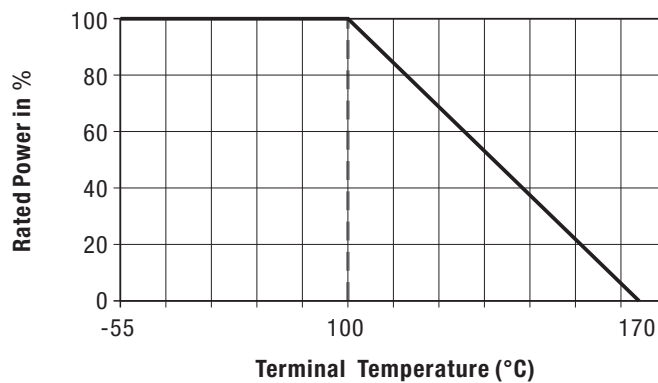
### Packaging

- Quantity: 3,000pcs
- 16mm wide tape on 330mm(13 inch) diameter reel -specification EIA Standard 481.

### Storage Conditions

- Temperature: 22~28°C, Humidity: 40~75%

### Derating Curve

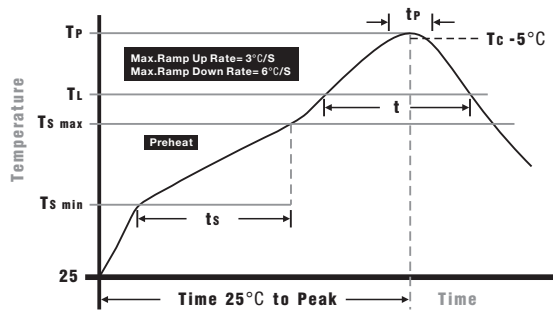


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### Soldering Parameters



**Wave Soldering:** 260°C, 10 seconds max.  
**Infrared Reflow:** 260°C, 30 seconds max.

#### IR Reflow Profile

<b>Preheat Heat</b>	
Temperature min (T <sub>smin</sub> )	150°C
Temperature max (T <sub>smax</sub> )	200°C
Time (T <sub>smin</sub> to T <sub>smax</sub> ) (ts)	60 - 120 seconds
<b>Average ramp-up rate (T<sub>smax</sub> to T<sub>p</sub>)</b>	3°C/second max.
<b>Liquidous temperature (TL)</b>	217°C
Time at liquidous (t <sub>l</sub> )	60 - 150 seconds
<b>Peak temperature (T<sub>p</sub>)</b>	260+0/-5°C
<b>Time within 5°C of actual peak Temperature (tp)</b>	10 - 30 seconds
<b>Average ramp-down rate (T<sub>p</sub> to T<sub>smax</sub>)</b>	6°C/second max.
<b>Time 25 °C to peak temperature</b>	8 minutes max.

### Performances

<b>Short Time Overload</b>	Loading 5 times rate power 5sec
<b>Moisture Resistance</b>	The specimens shall be placed in a chamber and subjected to a relative humidity of 90~98% percent and a temperature of 25°C / 65°C 10 cycles
<b>High Temperature Exposure</b>	The chip (mounted on board) is exposed in the heat chamber 125°C for 1000 hrs.
<b>Rapid Change of Temperature</b>	The chip (mounted on board) is exposed, -55±3°C (30min.)/+125±2°C (30min.) for 5 cycles.
<b>Load Life</b>	Apply rated power for 1000 hours with 1.5 hours ON and 0.5 hour OFF.

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