

## Size 5930 (15x7.6mm)

## ASRC59 Series

### Automotive Current Shunt Resistors

PROSEMI offers AEC-Q200 qualified Current Sensing Resistor. SRC59 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.



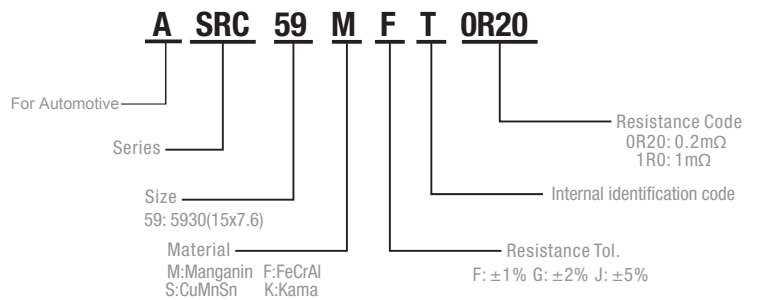
#### Features

- Power rating up to 15 W at 70°C
- Excellent long term stability
- Extremely low resistance values (down to 0.1mΩ)
- Halogen free, lead free and RoHS compliant
- AEC-Q200 qualified available



#### Applications

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



Part Number	Power Rating P70°C (W)	Resistance Range (mΩ)	TCR (ppm/°C)	Material
ASRC59F/K_T3R0	7	3	±50	FeCrAl/Kama
ASRC59F/K_T2R0	7	2	±50	FeCrAl/Kama
ASRC59F/K_T1R0	9	1	±50	FeCrAl/Kama
ASRC59M_TOR75	10	0.75	±75	Manganin
ASRC59M_TOR50	10	0.5	±75	Manganin
ASRC59M_TOR30	10	0.3	±100	Manganin
ASRC59M_TOR20	15	0.2	±100	Manganin
ASRC59S_TOR10	15	0.1	±200	CuMnSn

Applicable temperature range of -55°C to +170°C

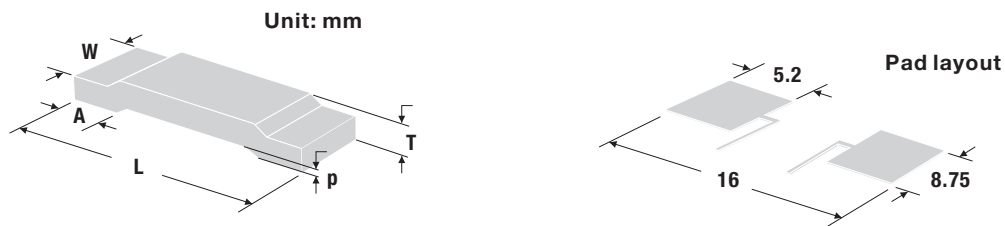
Power rating is guaranteed for use an aluminum substrate (MCPCB) Part Number definition “\_” of Resistance Tolerance

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#### Dimension

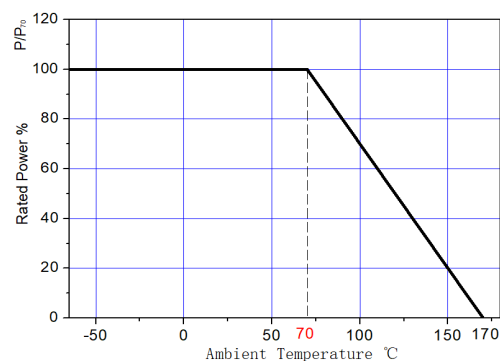


Type	L	W	T	A	p	*Quantity
ASRC59F_T3R0	15±0.3	7.6±0.4	0.79±0.2	4.2±0.3	0.5±0.1	2000
ASRC59F_T2R0	15±0.3	7.6±0.4	0.90±0.2	4.2±0.3	0.5±0.1	2000
ASRC59F_T1R0	15±0.3	7.6±0.4	1.36±0.2	4.2±0.3	0.5±0.1	2000
ASRC59M_T0R75	15±0.3	7.6±0.4	0.91±0.2	4.2±0.3	0.5±0.1	2000
ASRC59M_T0R50	15±0.3	7.6±0.4	1.10±0.2	4.2±0.3	0.5±0.1	2000
ASRC59M_T0R30	15±0.3	7.6±0.4	1.48±0.2	4.2±0.3	0.5±0.1	1500
ASRC59M_T0R20	15±0.3	7.6±0.4	2.00±0.2	4.2±0.3	0.5±0.1	1500
ASRC59S_T0R10	15±0.3	7.6±0.4	2.50±0.2	4.2±0.3	0.5±0.1	1000

#### Storage Conditions

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

#### Power Derating Curve

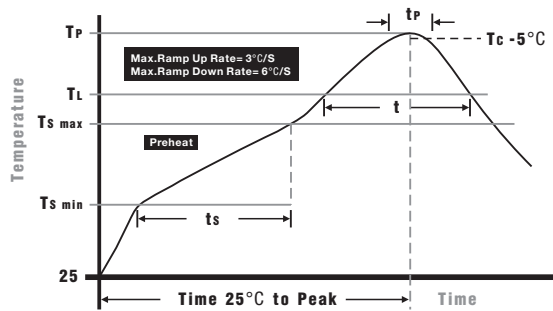


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### Soldering Parameters



Infrared Reflow: 260°C, 30 seconds max.

#### IR Reflow Profile

<b>Preheat Heat</b>	
Temperature min (T <sub>min</sub> )	150°C
Temperature max (T <sub>max</sub> )	200°C
Time (T <sub>min</sub> to T <sub>max</sub> ) (t <sub>s</sub> )	60 - 120 seconds
<b>Average ramp-up rate (T<sub>max</sub> to T<sub>p</sub>)</b>	
	3°C/second max.
<b>Liquidous temperature (T<sub>L</sub>)</b>	
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 (t<sub>p</sub>)</b>	
	10 - 30 seconds
<b>Average ramp-down rate (T<sub>p</sub> to T<sub>max</sub>)</b>	
	6°C/second max.
<b>Time 25 °C to peak temperature</b>	
	8 minutes max.

### Endurance Test

Items	Additional Requirements	Reference	Limits
Temperature Cycling	1000 Cycles(-55°C to +125°C) Measurement at 24±2 hours after test conclusion	JESD22 Method JA-104	±0.5%
High Temperature Exposure	1000hrs.@T=125°C.Unpowered. Measurement at 24±2 hours after test conclusion	MIL-STD-202 Method 108	±0.5%
Moisture Resistance	t=24hrs/cycle.Note:Steps 7a & 7b not required. Unpowered.	MIL-STD-202 Method 106	±0.5%
Biased Humidity	1000hrs 85°C/85%RH. Note: Specified conditions: 10% of operating power. Measurement at 24±2 hours after test conclusion	MIL-STD-202 Method 103	±0.5%
Operational Life	Condition D Steady State TA=125°C at rated power. Measurement at 24±2 hours after test conclusion	MIL-STD-202 Method 108	±0.5%
Solderability	245°C±5°C,5s+0.5s/-0	J-STD-002C	95% Coverage Min
Vibration	5 g's for 20 min, 12 cycles each of 3 orientations. Note:Use 8"X5" PCB .031"thick 7 secure points on one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000Hz. Measurement at 24±2 hours after test conclusion	MIL-STD-202 Method 204	±0.5%
Resistance to Soldering Heat	260°C±5°C, 10s±1s Measurement at 24±2 hours after test conclusion	MIL-STD-202 Method 210	±0.5%
ShortTime Overload	5×Rated power for 5 s Measurement at 24±2 hours after test conclusion	MIL-STD-202 Method 301	±0.5%

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