PROSEMI
Circuit Protection

Size 5930 (15x7.6mm)
Current Shunt Resistors

SRC59 Series

lead-free RoHS 2015/863/EC

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 0.2mΩ)**
- **Halogen free, lead free and RoHS compliant**

Appications

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

SRC 59 M F T 0R20

- SRC — Series: Shunt
- 59 — Size: 59: 5930(15x7.6)
- M — Material: M:Manganin S:CuMnSn F:FeCrAl K:Kama
- F — Resistance Tol.: F: ±1% G: ±2% J: ±5%
- T — Internal identification code
- 0R20 — Resistance Code: 0R20: 0.2mΩ, 1R0: 1mΩ

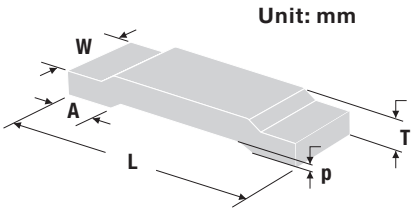
Part Number	Power Rating *P*70°C (W)	Resistance Range (mΩ)	TCR (ppm/°C)	Material
SRC59F/K_T3R0	7	3	±50	FeCrAl/Kama
SRC59F/K_T2R0	7	2	±50	FeCrAl/Kama
SRC59F/K_T2R0	8	1.5	±50	FeCrAl/Kama
SRC59F/K_T1R0	9	1	±50	FeCrAl/Kama
SRC59M_T0R75	10	0.75	±75	Manganin
SRC59M_T0R50	10	0.5	±75	Manganin
SRC59M_T0R30	10	0.3	±100	Manganin
SRC59M_T0R20	15	0.2	±100	Manganin
SRC59S_T0R10	15	0.1	±200	CuMnSn

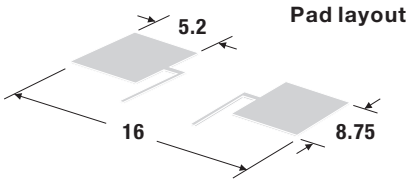
- Applicable temperature range of -55°C to +170°C
- Power rating is guaranteed for use an aluminum substrate (MCPCB) Part
- Number definition "_" of Resistance Tolerance

Size 5930 (15x7.6mm)

Current Shunt Resistors SRC59 Series

Dimension



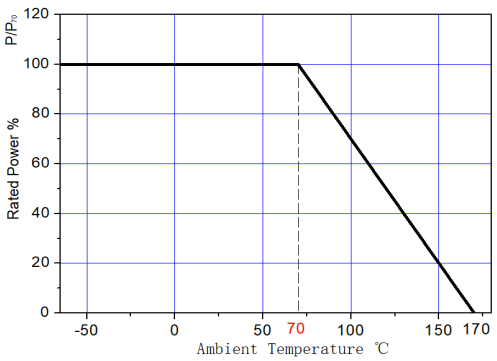


Type	L	W	T	A	p	*Quantity
SRC59F_T3R0	15±0.3	7.6±0.4	0.79±0.2	4.2±0.3	0.5±0.1	2000
SRC59F_T2R0	15±0.3	7.6±0.4	0.90±0.2	4.2±0.3	0.5±0.1	2000
SRC59M_T1R5	15±0.3	7.6±0.4	1.11±0.2	4.2±0.3	0.5±0.1	2000
SRC59F_T1R0	15±0.3	7.6±0.4	1.36±0.2	4.2±0.3	0.5±0.1	2000
SRC59M_T0R75	15±0.3	7.6±0.4	0.91±0.2	4.2±0.3	0.5±0.1	2000
SRC59M_T0R50	15±0.3	7.6±0.4	1.10±0.2	4.2±0.3	0.5±0.1	2000
SRC59M_T0R30	15±0.3	7.6±0.4	1.48±0.2	4.2±0.3	0.5±0.1	2000
SRC59M_T0R20	15±0.3	7.6±0.4	2.00±0.2	4.2±0.3	0.5±0.1	1500
SRC59S_T0R10	15±0.3	7.6±0.4	2.5±0.2	4.2±0.3	0.5±0.1	1000

Storage Conditions

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

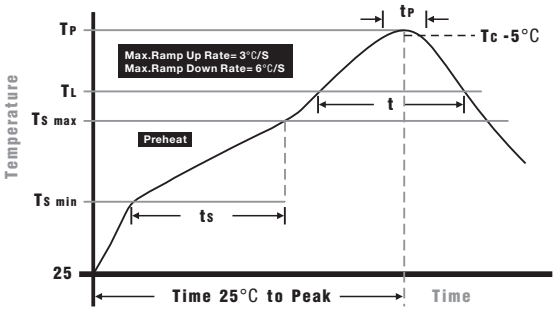
Power Derating Curve



Size 5930 (15x7.6mm)

Current Shunt Resistors SRC59 Series

Soldering Parameters



Infrared Reflow: 260°C, 30 seconds max.

IR Reflow Profile

Preheat Heat **Temperature min (Tsmin)** **Temperature max(Tsmax)** **Time (Tsmin to Tsmax) (ts)**	 150°C 200°C 60 -120 seconds
Average ramp-up rate (Tsmax to Tp)	3°C/second max.
Liquidous temperature (TL) **Time at liquidous (tL)**	217°C 60 - 150 seconds
Peak temperature(Tp)	260+0/-5°C
Time within 5°C of actual peak Temperature (tp)	10 – 30 seconds
Average ramp-down rate (Tp to Tsmax)	6°C/second max.
Time 25 °C to peak temperature	8 minutes max.

Endurance Test

Iterms	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: Specif ied 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±2hours 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 10-2000 Hz. 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 Measurem ent at 24±2 hours after test conclusion	MIL-STD-202 Method 210	±0.5%
Short Time Overload	5×Rated power for 5 s Measurement at 24±2 hours after test conclusion	MIL-STD-202 Method 301	±0.5%

© 2021 PROSEMI Inc. All Rights Reserved.
Specifications and features are subject to change without notice.
www.prosemitech.com

The PROSEMI logo, and all other PROSEMI trademarks are the property of PROSEMI Inc. All other trademarks are the property of their respective owners.