



CSM8518

Precision Manganin Copper Alloy Power Shunt Resistors 2 & 4 Terminals

FEATURES

- Temperature coefficient of resistance (TCR): to ± 50 ppm/ $^{\circ}\text{C}$ (+ 20 $^{\circ}\text{C}$ to + 175 $^{\circ}\text{C}$)
- Resistance Value: to 50 $\mu\Omega$
- Tolerance: to ± 0.5 %
- Power rating: 36W at + 70 $^{\circ}\text{C}$
- Load life stability: ± 1 % at 70 $^{\circ}\text{C}$, 1000 h (rated power)
- Short Time Overload ± 0.5 % Max
- Maximum current: 840 A
- Low Thermal EMF (< 0.5 $\mu\text{V}/^{\circ}\text{C}$)
- Very Low Inductance (< 3 nH)
- AEC-Q200 Compliant

KEY APPLICATIONS

- Battery management system
- Precision current-sensing
- Electric power
- Uninterruptible Power Systems
- Frequency converters
- Motor control
- Electric load equipment
- Automotive
- Over current protection

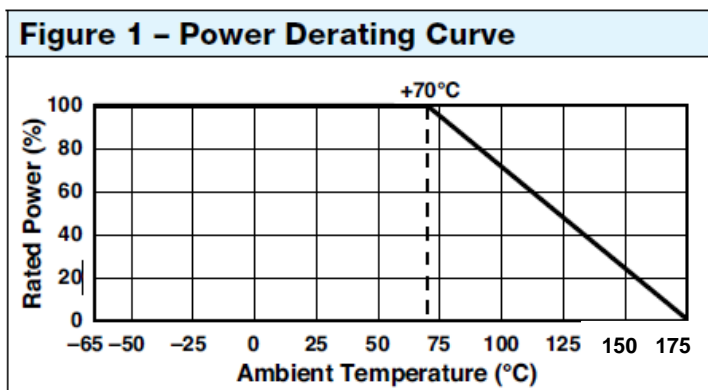
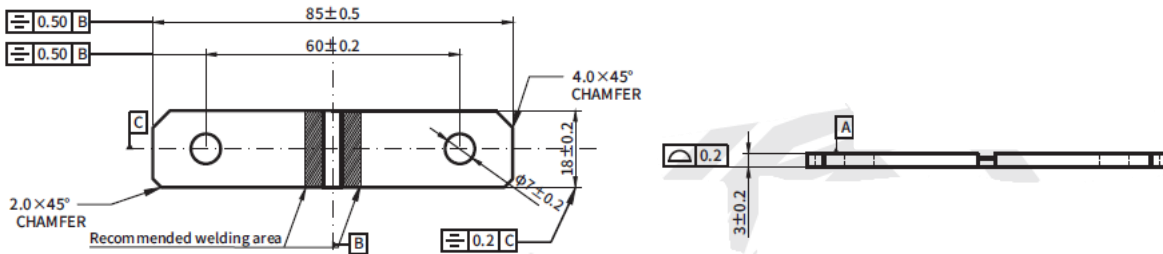


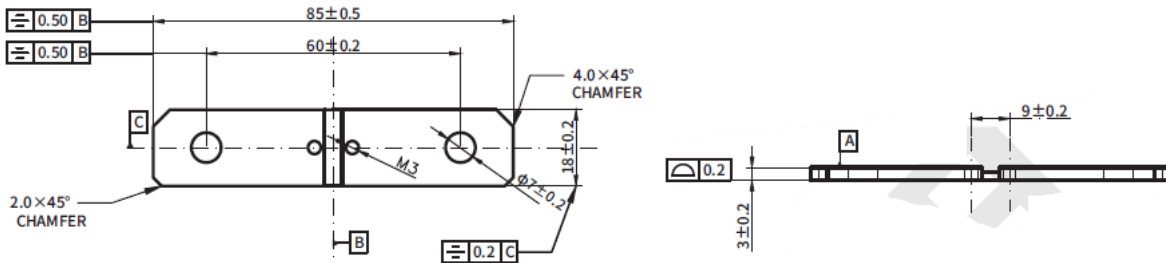
TABLE 1 – SPECIFICATIONS							
Resistance Value	Number of Terminals	Rated power at +70 °C	Maximum Current	Tolerances	Temperature Coefficient, TCR (-55 °C to +20 °C)	Temperature Coefficient, TCR (+20°C to +175°C)	Weight
50 $\mu\Omega$	4	36W	840A	$\pm 0.5\%, \pm 1\%, \pm 2\%, \pm 5\%$	200ppm/°C	150ppm/°C	40g
50 $\mu\Omega$	2				150ppm/°C	100ppm/°C	
100 $\mu\Omega$	4		600A	$\pm 0.5\%, \pm 1\%, \pm 2\%, \pm 5\%$	150ppm/°C	100ppm/°C	
100 $\mu\Omega$	2				100ppm/°C	50ppm/°C	

Figure 2 – MECHANICAL DIMENSIONS and LAND PATTERN in millimeters

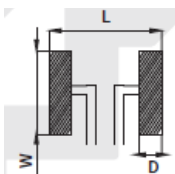
50 $\mu\Omega$ 2 Terminals DIMENSIONS



50 $\mu\Omega$ 4 Terminals DIMENSIONS



50 $\mu\Omega$ LAND PATTERN



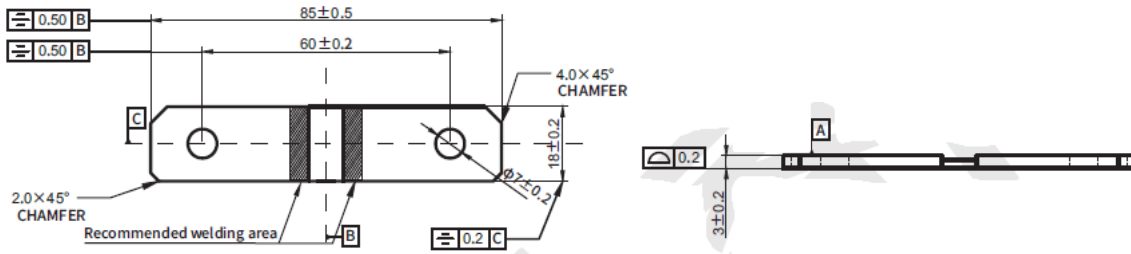
Recommended solder pad

L	D	W
12.8	4	21

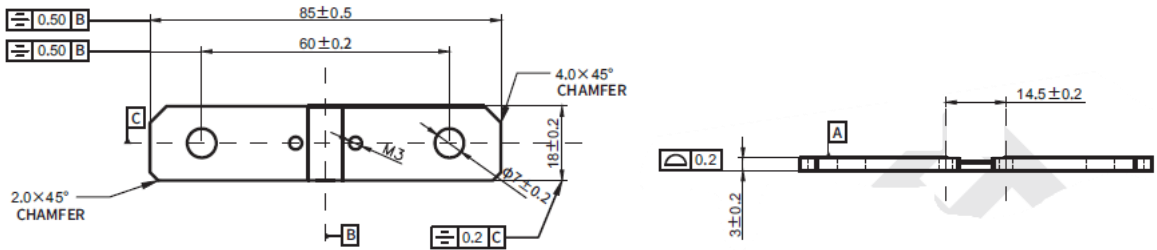


PERFORMANCE THROUGH PRECISION

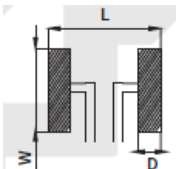
100 $\mu\Omega$ 2 Terminals DIMENSIONS



100 $\mu\Omega$ 4 Terminals DIMENSIONS



100 $\mu\Omega$ LAND PATTERN



Recommended solder pad

L	D	W
16.8	4	21

Table 2 - Performance Specifications		
Test	CONDITIONS	Test LIMITS
Thermal shock	1000 Cycles(-55°C to +150°C), 15 minutes each cycle	≤±0.5%
High Temperature Exposure	1000hrs.@T=170°C.Unpowered.	≤±1.0%
Low Temperature Storage	-55°C for 24 hours	≤±0.5%
Biased Humidity	1000hrs 85°C/85%RH. Note: Specified conditions:10% of rated power.	≤±0.5%
Load Life stability	Rated power, 70°C, 1.5 hours on, 0.5 hours off, 1000 hours	≤±1.0%
Mechanical shock	100G 6ms, 5 times	≤±0.5%
Vibration	Frequency varied 10Hz to 2000Hz in 1minute, X-Y-Z direction, 12 hours	≤±0.5%
Short Time Overload	5×Rated power for 5 seconds	≤±0.5%