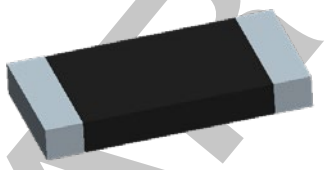
2 Terminals Current Sense
Surface Mount Metal Strip Power Resistors

FEATURES

- Temperature coefficient of resistance to ±50 ppm/°C max. (+20°C to +120°C)
- Power rating: to 5 W
- Resistance tolerance: to ±0.1%
- Resistance range: 1 mΩ to 100 mΩ
- Short time overload: ±0.3%
- Maximum current: up to 70 A
- Working Temperature -65°C to 170°C
- E-Beam welding construction: Copper terminals and NiCr resistive element
- Proprietary processing techniques produce low resistance values and improved TCR
- Solderable terminations
- Quick prototype quantities available, please contact: foil@vpgsensors.com



Pb-free Available

RoHS* COMPLIANT

Key Applications

Applications requiring accuracy and repeatability under stress conditions such as the following:

- Switching and linear power supplies
- Precision current-sensing
- Power management systems
- Feedback circuits
- Over current protection
- Measurement instrumentation
- Medical and automatic test equipment
- Communication systems
- High current applications for the automotive market

Figure 1 – Power Derating Curve

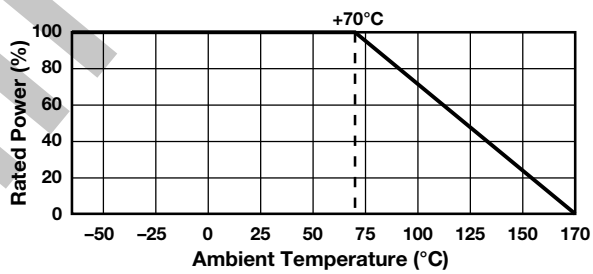


Table 1 – Specifications

PARAMETER	CSM2817
Resistance Range	1 mΩ to 100 mΩ[1]
Power Rating at 70°C	5 W
Maximum Current[2]	70 A
Tolerance	to ±0.1% (20 - 100 mΩ) to ±0.5% (1 - 19 mΩ)
Temperature Coefficient Max. (+20°C to +120°C)	±75 ppm/C, (1 - 3 mΩ) ±50 ppm/C, (4 - 100 mΩ)
Operating Temperature Range	–65°C to +170°C
Maximum Working Voltage	$(P \times R)^{1/2}$
Weight (Maximum)	0.082 g

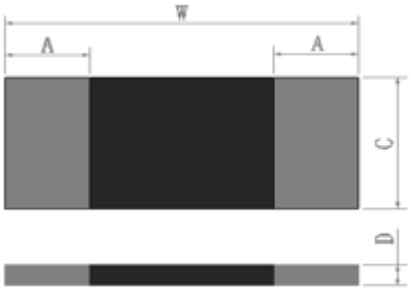
Notes

(1) For resistance values >50 mΩ, contact foil@vpgsensors.com

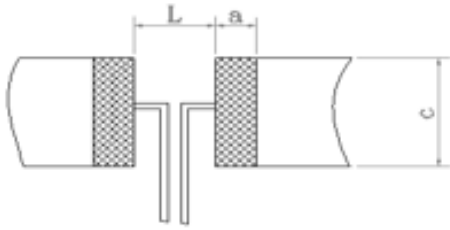
(2) Maximum current for a given resistance value is calculated using $I = \sqrt{P/R}$

Figure 2 - MECHANICAL DIMENSIONS and LAND PATTERN in millimeters

CSM2817 DIMENSIONS



CSM2817 LAND PATTERN



Dimensions

MODEL	RESISTANCE RANGE (mΩ)	W	C	A	D
CSM2817	1 -100	6.35 ±0.2	4.3 ±0.2	1.2 ±0.2	0.8 ±0.1

Land Pattern Dimensions

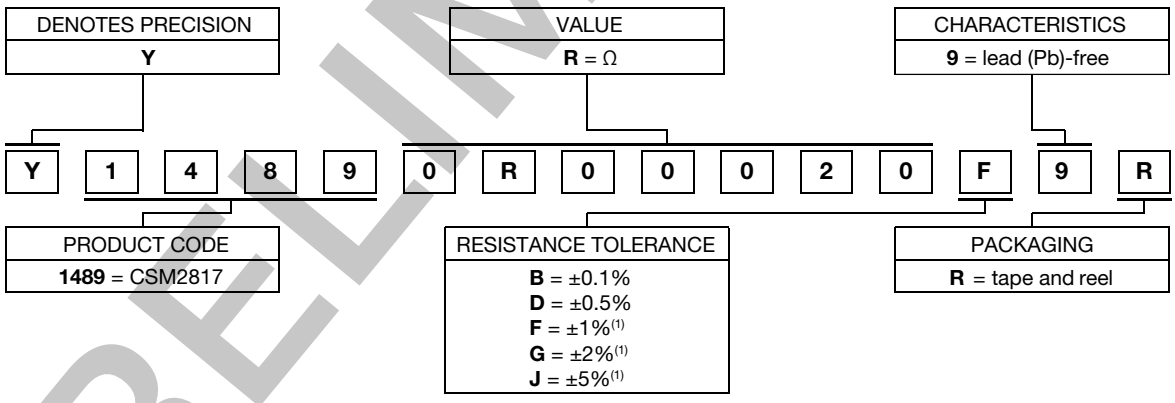
MODEL	RESISTANCE RANGE (mΩ)	a	c	L
CSM2817	1 -100	2.7	5.2	3.5

Table 2 – CSM2817 Performance Specifications			
TEST	**CONDITIONS**	**MIL Reference**	**ΔR LIMITS**
Temperature Cycling	1000 Cycles(-55°C to +150°C)	JESD22 Method JA-104	±0.5%
High Temperature Exposure	1000hrs.@T=170°C.Unpowered.	MIL-STD-202 Method 108	±0.5%
Moisture Resistance	t=24hrs/cycle. Note: Steps 7a & 7b not required. Unpowered.	MIL-STD-202 Method 106	±0.3%
Biased Humidity	1000hrs 85°C/85%RH. Note: Specified conditions: 10% of operating power.	MIL-STD-202 Method 103	±0.3%
Operational Life	Condition D Steady State TA=125°C at rated power.	MIL-STD-202 Method 108	±0.5%
Solderability	235°C±5°C,2s±0.5s	J-STD-202	95% Coverage Minimum
Resistance to Soldering Heat	260°C±5°C 10s±1s	MIL-STD-202 Method 210	±0.3%
Short Time Overload	5×Rated power for 5 s *2.5xRated power for 10 s	MIL-STD-202 Method 201	±0.3%

*For value range of 11mOhm to 19mOhm, the test method is 2.5xRated power for 10 s

Figure 3 – Global Partnumber Information

GLOBAL PART NUMBER: Y14890R00200F9R



FOR EXAMPLE: ABOVE GLOBAL ORDER Y14890R002F9R
TYPE: CSM2817
VALUE: 2 mΩ
ABSOLUTE TOLERANCE: ± 1.0%
TERMINATION: lead (Pb)-free
PACKAGING: tape and reel

Note
(1) Please contact foil@vpgsensors.com

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