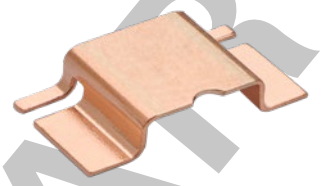
Bulk Metal® Technology Precision, Power Shunt Resistors, Surface Mount, Metal Strip Resistors

PRELIMINARY

FEATURES

- Temperature coefficient of resistance to ±20 ppm/°C max. (–55°C to +125°C, +25°C ref.)
- Power rating: to 7 W
- Resistance tolerance: to ±1%
- Resistance range: 0.3mΩ to 3 mΩ
- Short time overload: ±0.5%
- Maximum current: up to 100 A
- **AEC-Q200 qualified**
- Proprietary processing techniques produce low resistance values and improved TCR
- Solderable terminations
- Quick prototype quantities available, please contact: foil@vpgsensors.com



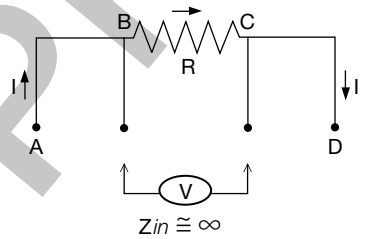
Pb-free Available

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
- Power amplifiers
- Measurement instrumentation
- Precision instrumentation amplifiers
- Medical and automatic test equipment
- Frequency converters
- Communication systems
- High current applications for the automotive market



Four terminal (Kelvin) design: allows for precise and accurate measurements.

Figure 1 – Power Derating Curve

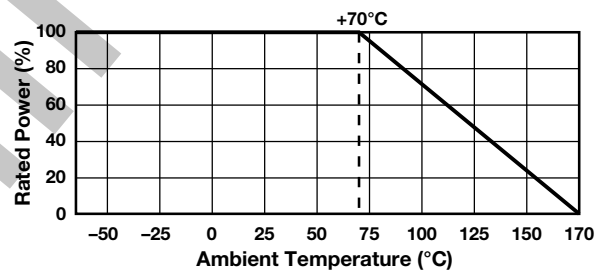


Table 1 – Specifications

PARAMETER	CSM4026Y
Resistance Range	0.3 mΩ to 3 mΩ
Power Rating at 70°C[1]	5 W (0.3 - 2mΩ) 4 W (3mΩ)
Maximum Current[2]	100 A
Tolerance	to ±1%
Temperature Coefficient Max. (–55°C to +125°C, +25°C Ref.)	±40 ppm/°C, (2 - 3 mΩ) ±70 ppm/°C, (0.3 - 1 mΩ)
Operating Temperature Range	–65°C to +170°C
Maximum Working Voltage	$(P \times R)^{1/2}$
Weight (Maximum)	0.82 g

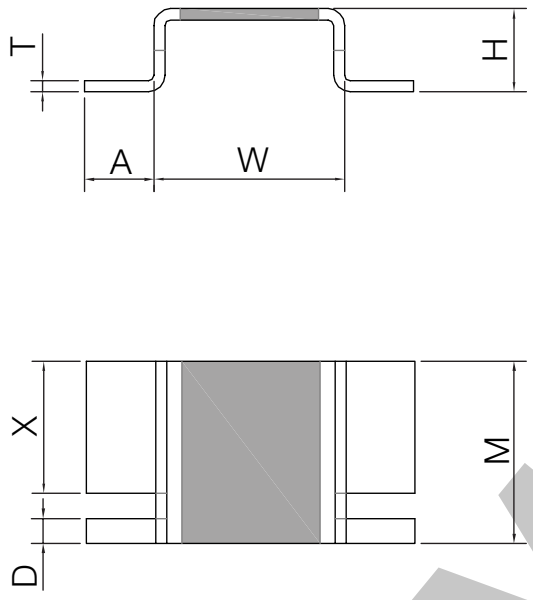
Notes

(1) Nominal power of 7 W is available for special values

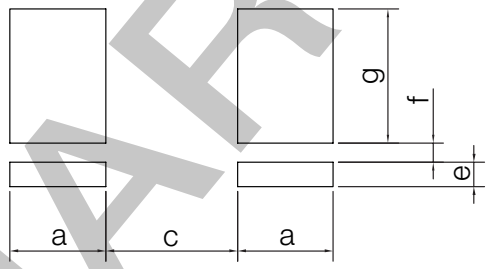
(2) Maximum current for a given resistance value is calculated using $I = \sqrt{P/R}$

Figure 2 – Dimensions and Imprinting in millimeters

CSM4026Y DIMENSIONS



CSM4026Y LAND PATTERN



Dimensions

MODEL	RESISTANCE RANGE (mΩ)	M	H	W	T	A	X	D
CSM4026Y	0.3	6.6±0.3	3±0.5	6.9±0.3	1.06±0.1	2.5±0.2	4.8±0.4	0.9
	0.5	6.6±0.3	3±0.5	6.9±0.3	0.67±0.1	2.5±0.2	4.8±0.4	0.9
	1	6.6±0.3	3±0.5	6.9±0.3	0.33±0.1	2.5±0.2	4.8±0.4	0.9
	2	6.6±0.3	3±0.5	6.9±0.3	0.47±0.1	2.5±0.2	4.8±0.4	0.9
	3	6.6±0.3	3±0.5	6.9±0.3	0.34±0.1	2.5±0.2	4.8±0.4	0.9

Land Pattern Dimensions

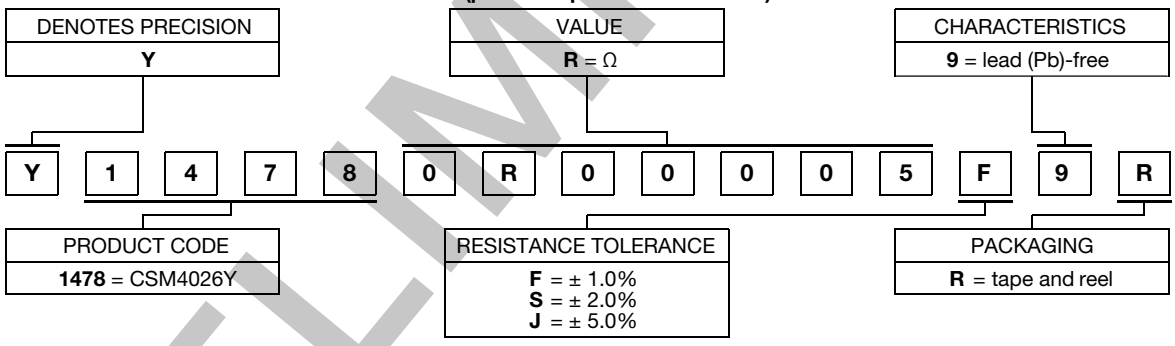
MODEL	RANGE	a	c	e	f	g
CSM4026Y	0.3 to 3	4	5.5	0.9	0.8	5.6

PRELIMINARY

Table 2 – CSM4026Y Performance Specifications			
TEST	**CONDITIONS**	**MIL-PRF-49465B ΔR LIMITS**	**CSM4026Y TYPICAL ΔR LIMITS(1)**
Temperature Cycling	1000 Cycles (-55°C to +125°C)	JESD22 Method JA-104	±0.5%
High Temperature Exposure	1000 hrs. @ +125°C, unpowered	±(0.5%+0.0005R) Method 108	±0.5%
Biased Humidity	1000 hrs 85°C/85%RH Specified conditions: 10% of operating power	MIL-STD-202 Method 103	±0.5%
Operational Life	Condition D Steady State TA=125°C at rated power	MIL-STD-202 Method 108	±1%
Solderability	245°C±5°C, 5s+0.5s/-0	J-STD-002C	95% Coverage Min
Resistance to Soldering Heat	260°C±5°C, 10s±1s	MIL-STD-202 Method 202	±0.5%
Short Time Overload	5×Rated power for 5 s	MIL-STD-202 Method 301	±0.5%

Figure 3 – Global Partnumber Information

NEW GLOBAL PART NUMBER: Y14780R00005F9R (preferred part number format)



FOR EXAMPLE: ABOVE GLOBAL ORDER Y1478 0R00005 F 9 R:

TYPE: CSM4026Y
VALUE: 0.5 mΩ
ABSOLUTE TOLERANCE: ± 1.0%
TERMINATION: lead (Pb)-free
PACKAGING: tape and reel

PRELIMINARY

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

VPG Foil Resistors:

Y1453500R000T9L Y1746500R000T9R Y0785500R000T9L Y14750R10000B9R Y14780R00100F9R
Y4077330R000B9R Y09261R00000B0L Y14770R00300F9R Y14880R00100D9R Y1625350R000T9R
Y16291K00000T9R Y40232K00000B9R Y14780R00200F9R Y14870R05000B9R Y14880R02000B89R
Y40721K00000T9R SMR1D 100R 0,01% SMR1D 250R 0,01% Y000737K7000B0L Y07855K00000T9L
Y14870R01000B9R Y14532K50000T9L Y1624500R000T9R Y162525K0000T9R Y405310K0000J0L
Y40732K00000T9R Y4077350R000B9R Y0785120R000T9L Y16245K00000T9R Y145310K0000V9L