

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

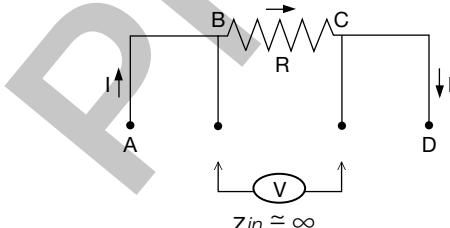
FEATURES

- Temperature coefficient of resistance to $\pm 40 \text{ ppm}/^\circ\text{C}$ max. (-55°C to $+125^\circ\text{C}$, $+25^\circ\text{C}$ ref.)
- Power rating: to 7 W⁽¹⁾
- Resistance tolerance: to $\pm 1\%$
- Resistance range: $0.3\text{m}\Omega$ to $3\text{ m}\Omega$
- Short time overload: $\pm 0.5\%$
- Maximum current: up to 129 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

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.

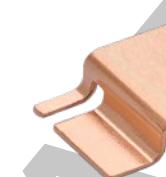


Figure 1 – Power Derating Curve

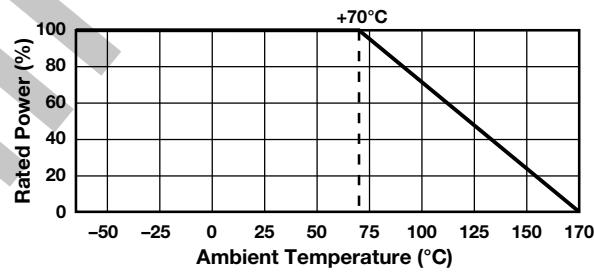


Table 1 – Specifications

PARAMETER	CSM4026Y
Resistance Range	$0.3\text{ m}\Omega$ to $3\text{ m}\Omega$
Power Rating at 70°C ⁽¹⁾	5 W
Maximum Current ⁽²⁾	129 A
Tolerance	to $\pm 1\%$
Temperature Coefficient Max. (-55°C to $+125^\circ\text{C}$, $+25^\circ\text{C}$ Ref.)	$\pm 40 \text{ ppm}/^\circ\text{C}$, ($2 - 3\text{ m}\Omega$) $\pm 70 \text{ ppm}/^\circ\text{C}$, ($0.3 - 1\text{ m}\Omega$)
Operating Temperature Range	-65°C to $+170^\circ\text{C}$
Maximum Working Voltage	$(P \times R)^{1/2}$
Weight (Maximum)	0.82 g

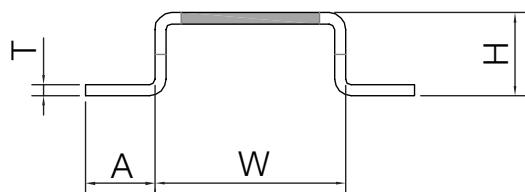
Notes

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

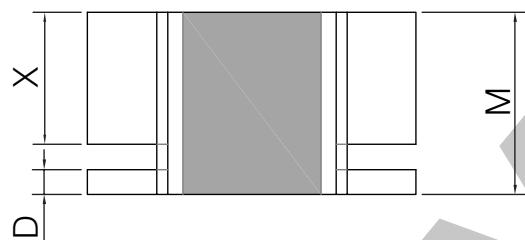
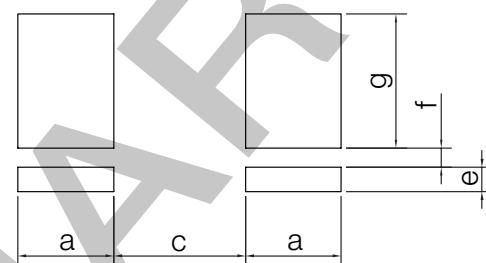
⁽²⁾ Maximum current for a given resistance value is calculated using $I = \sqrt{P/R}$

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

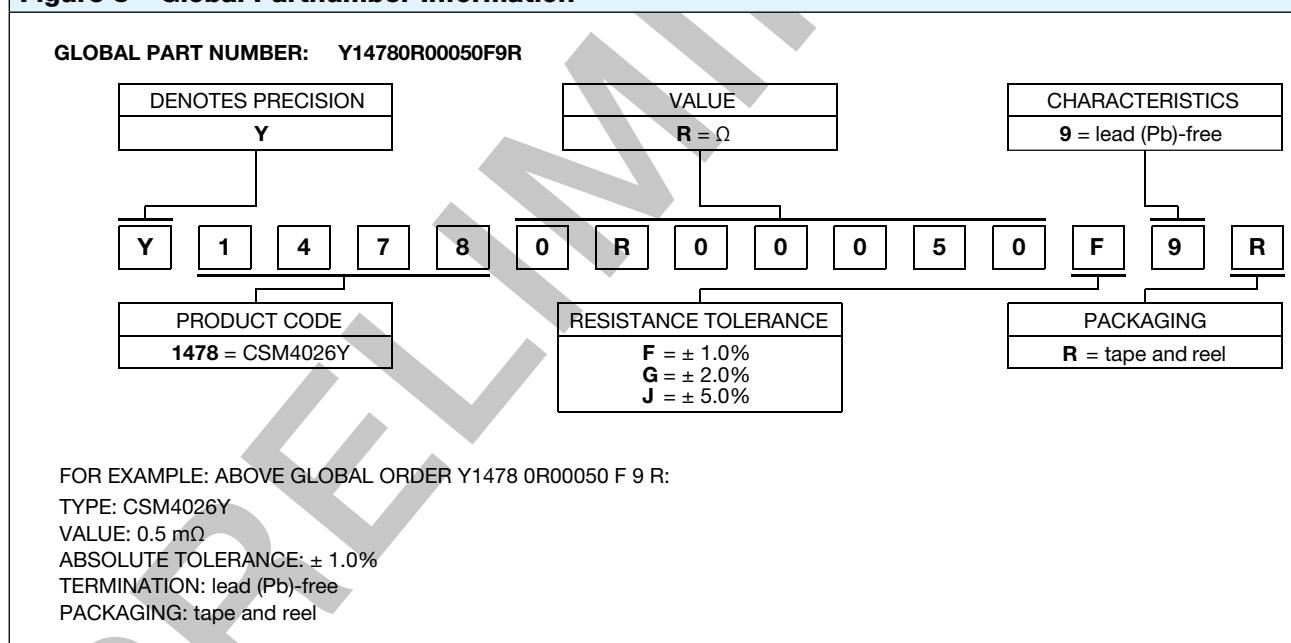
Land Pattern Dimensions

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

Table 2 – CSM4026Y Performance Specifications

TEST	CONDITIONS	MIL-PRF-49465B ΔR LIMITS	CSM4026Y TYPICAL ΔR LIMITS
Temperature Cycling	1000 Cycles (-55°C to +125°C)	JESD22 Method JA-104	±0.5%
High Temperature Exposure	100 hrs. @ +170°C, unpowered	MIL-STD-202 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	±0.5%
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 210	±0.5%
Short Time Overload	5x rated power for 5 s for 3 mΩ: 2.5x rated power for 10s	MIL-STD-202 Method 301	±0.5%

Figure 3 – Global Partnumber Information





Legal Disclaimer Notice

Vishay Precision Group, Inc.

Disclaimer

ALL PRODUCTS, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Vishay Precision Group, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "VPG"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

The product specifications do not expand or otherwise modify VPG's terms and conditions of purchase, including but not limited to, the warranty expressed therein.

VPG makes no warranty, representation or guarantee other than as set forth in the terms and conditions of purchase. **To the maximum extent permitted by applicable law, VPG disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.**

Information provided in datasheets and/or specifications may vary from actual results in different applications and performance may vary over time. Statements regarding the suitability of products for certain types of applications are based on VPG's knowledge of typical requirements that are often placed on VPG products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. You should ensure you have the current version of the relevant information by contacting VPG prior to performing installation or use of the product, such as on our website at vpgsensors.com.

No license, express, implied, or otherwise, to any intellectual property rights is granted by this document, or by any conduct of VPG.

The products shown herein are not designed for use in life-saving or life-sustaining applications unless otherwise expressly indicated. Customers using or selling VPG products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify VPG for any damages arising or resulting from such use or sale. Please contact authorized VPG personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Copyright Vishay Precision Group, Inc., 2014. All rights reserved.