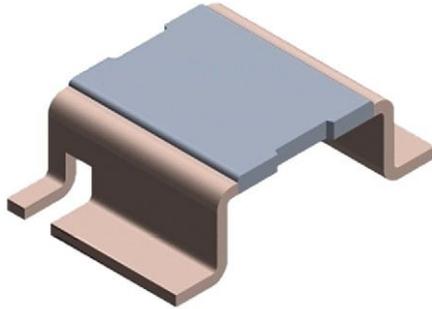


# Power Metal Strip<sup>®</sup> Resistors, Very High Power (to 7 W), Low Value (down to 0.0003 Ω), Surface Mount



**DESIGN TOOLS** (click logo to get started)



## FEATURES

- High power to foot print size ratio
- All welded construction of the Power Metal Strip<sup>®</sup> resistors are ideal for all types of current sensing, voltage division and pulse applications
- Proprietary processing technique produces extremely low resistance values, down to 0.0003 Ω
- Specially selected and stabilized materials allow for high power rating (to 7 W)
- Construction is unaffected by high sulfur environments
- Solid metal nickel-chrome or manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance 0.5 nH to 5 nH
- Low thermal EMF (< 3 μV/°C)
- AEC-Q200 qualified <sup>(1)</sup>
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

 AUTOMOTIVE  
GRADE

**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

## Notes

- Follow link to Overview of Automotive Grade Products for more details: [www.vishay.com/doc?49924](http://www.vishay.com/doc?49924)
- <sup>(1)</sup> Flame retardance test may not be applicable to some resistor technologies

STANDARD ELECTRICAL SPECIFICATIONS						
GLOBAL MODEL	SIZE	POWER RATING $P_{70^{\circ}\text{C}}$ W	TOLERANCE ± %	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE <sup>(1)</sup> Ω	WEIGHT (typical) g/1000 pieces
WSLP4026	4026	5.0	1.0, 5.0	2m to 5m	2m, 3m, 4m, 5m	420
WSLP4026	4026	7.0	1.0, 5.0	0.3m to 1m	0.3m, 0.5m, 0.7m, 1m	420

## Notes

- Power rating depends on the max. temperature at the solder point, component placement density and the substrate material
- Part marking: Model, value, tolerance, date code
- <sup>(1)</sup> Other values may be available, contact factory

GLOBAL PART NUMBER INFORMATION																	
Global Part Numbering: <b>WSLP4026L5000FEA</b> (WSLP4026, 0.0005 Ω, ± 1 %)																	
(visit <a href="http://www.vishay.net">www.vishay.net</a> Vishay Dale parts numbering manual for all options)																	
W	S	L	P	4	0	2	6	L	5	0	0	0	F	E	A		
GLOBAL MODEL (8 digits)			RESISTANCE VALUE (5 digits)			TOLERANCE CODE (1 digit)		PACKAGING CODE <sup>(1)</sup> (2 digits)			SPECIAL (2 digits)						
WSLP4026			L = mΩ L5000 = 0.0005 Ω L7000 = 0.0007 Ω 1L000 = 0.0010 Ω 2L000 = 0.0020 Ω			F = ± 1.0 % J = ± 5.0 %		EA = lead (Pb)-free, tape/reel EK = lead (Pb)-free, bulk			(dash number) (up to 2 digits) from 1 to 99 as applicable						

## Note

- <sup>(1)</sup> Packaging code: EB (lead (Pb)-free) is a non-standard packaging code designating 1000 piece reels. The non-standard packaging code is identical to our standard EA (lead (Pb)-free), except that it is a package quantity of 1000 pieces

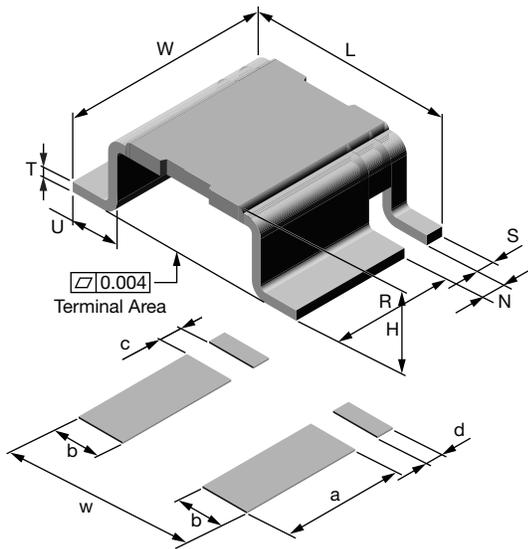
TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Component temperature coefficient (including terminal) <sup>(1)</sup>	ppm/°C	± 75 for 0.5 mΩ to 5 mΩ
		± 110 for 0.3 mΩ
Element TCR <sup>(2)</sup>	ppm/°C	< 20
Operating temperature range	°C	-65 to +170
Maximum working voltage <sup>(3)</sup>	V	$(P \times R)^{1/2}$

**Notes**

- (1) Component TCR - total TCR that includes the TCR effects of the resistor element and the copper terminal
- (2) Element TCR - only applies to the alloy used for the resistor element
- (3) Maximum working voltage - the WSL is not voltage sensitive, but is limited by power / energy dissipation and is also not ESD sensitive

**DIMENSIONS**

MODEL	DIMENSIONS in inches (millimeters)							
	L	W	H	R (REF.)	S	T	U	N
WSLP4026	0.400 ± 0.008 (10.1 ± 0.2)	0.260 + 0.012/- 0.008 (6.6 + 0.3/- 0.2)	Please see table below	0.198 (5.0)	0.028 ± 0.004 (0.7 ± 0.1)	0.016 ± 0.002 (0.4 ± 0.05)	0.078 ± 0.004 (2.0 ± 0.1)	0.039 ± 0.006 (0.99 ± 0.15)



MODEL	SOLDER PAD DIMENSIONS in inches (millimeters)				
	a	b	c	d	w
WSLP4026	0.220 (5.6)	0.096 (2.44)	0.035 (0.89)	0.035 (0.89)	0.420 (10.6)

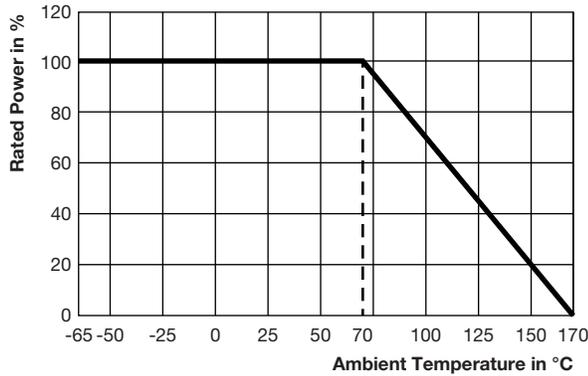
MODEL	RESISTANCE VALUE (mΩ)	ELEMENT MATERIAL	HEIGHT H
WSLP4026	0.3	Mn-Cu	0.141 ± 0.008 (3.58 ± 0.2)
WSLP4026	0.5	Mn-Cu	0.116 ± 0.008 (2.95 ± 0.2)
WSLP4026	0.7	Mn-Cu	0.111 ± 0.008 (2.82 ± 0.2)
WSLP4026	1.0	Mn-Cu	0.1055 ± 0.008 (2.68 ± 0.2)
WSLP4026	2.0	Ni-Cr	0.114 ± 0.008 (2.9 ± 0.2)
WSLP4026	3.0	Ni-Cr	0.108 ± 0.008 (2.74 ± 0.2)
WSLP4026	4.0	Ni-Cr	0.1046 ± 0.008 (2.66 ± 0.2)
WSLP4026	5.0	Ni-Cr	0.110 ± 0.008 (2.79 ± 0.2)

**Notes**

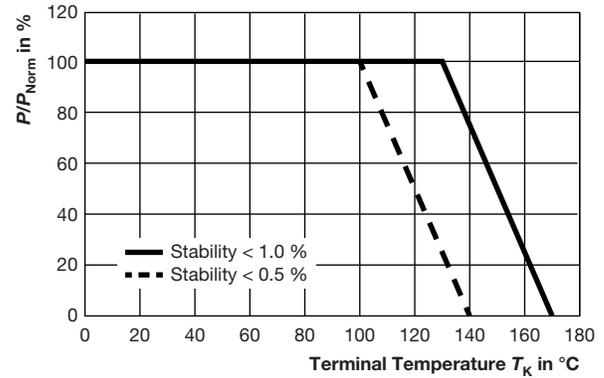
- 3D models available: [www.vishay.com/doc?30316](http://www.vishay.com/doc?30316)
- Surface mount solder profile recommendations: [www.vishay.com/doc?31052](http://www.vishay.com/doc?31052)



**DERATING - AMBIENT TEMPERATURE**



**DERATING - TERMINAL TEMPERATURE**



Example: WSLP4026 0.0005  $\Omega$ , 0.001  $\Omega$

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	$\pm 0.5\%$
Low temperature operation	-65 °C for 24 h	$\pm 0.5\%$
High temperature exposure	1000 h at +170 °C	$\pm 1.0\%$
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	$\pm 0.5\%$
Mechanical shock	100 g's for 6 ms, 5 pulses	$\pm 0.5\%$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm 0.5\%$
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm 1.0\%$
Resistance to solder heat	3x at 250 °C $\pm 5$ °C for 30 s $\pm 5$ s	$\pm 0.5\%$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	$\pm 0.5\%$

PACKAGING (1)				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSLP4026	16 mm/embossed plastic	330 mm/13"	1500	EA

**Notes**

- Embossed Carrier Tape per EIA-481
- (1) Additional packaging details at [www.vishay.com/doc?20051](http://www.vishay.com/doc?20051)



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