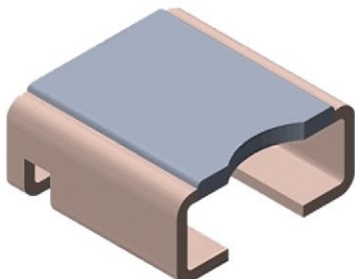


Power Metal Strip® Resistors, Very High Power (to 12 W), Low Value (Down to 0.0002 Ω), Surface-Mount


RoHS
COMPLIANT

HALOGEN
FREE
GREEN
(5-2008)

FEATURES

- High power to foot print size ratio
- All welded construction of the Power Metal Strip® resistors are ideal for all types of current sensing, voltage division and pulse applications
- Proprietary processing technique produces extremely low resistance values, down to 0.0002 Ω
- Sulfur resistance by construction that is unaffected by high sulfur environments
- Specially selected and stabilized materials allow for high power rating (to 12 W)
- 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 ⁽¹⁾
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

LINKS TO ADDITIONAL RESOURCES



3D Models



Design Tools

Notes

- Follow link to Overview of Automotive Grade Products for more details: www.vishay.com/doc?49924
- “SMD Current Sense: AEC-Q200 vs. Vishay Qualification” technical note: www.vishay.com/doc?30416
- ⁽¹⁾ 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 ⁽¹⁾ Ω	WEIGHT (typical) g/1000 pieces
WSLP2726	2726	5.0	1.0, 5.0	1.3m to 5m	1.3m, 2m, 3m, 4m, 5m	420
WSLP2726	2726	7.0	1.0, 5.0	1m	1m	420
WSLP2726	2726	10.0 ⁽²⁾	1.0, 5.0	0.7m	0.7m	420
WSLP2726	2726	12.0 ⁽²⁾	1.0, 5.0	0.2m to 0.5m	0.2m, 0.5m	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
- “Thermal Management for Surface-Mount Devices” white paper: www.vishay.com/doc?30380
- ⁽¹⁾ Other values may be available, contact factory
- ⁽²⁾ Ratings are based on 100 °C terminal temperature

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: **WSLP2726L5000FEA** (visit www.vishay.net Vishay Dale parts numbering manual for all options)

W	S	L	P	2	7	2	6	L	5	0	0	0	F	E	A		
GLOBAL MODEL (8 digits)				RESISTANCE VALUE ⁽¹⁾ (5 digits)					TOLERANCE CODE (1 digit)		PACKAGING CODE ⁽²⁾ (2 digits)		SPECIAL ⁽³⁾ (up to 2 digits)				
WSLP2726				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				

Notes

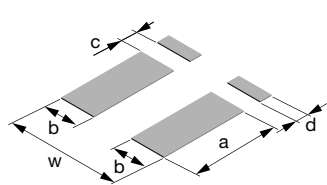
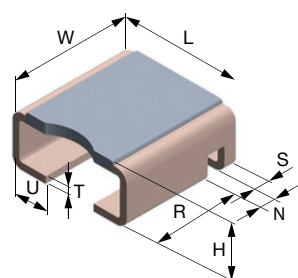
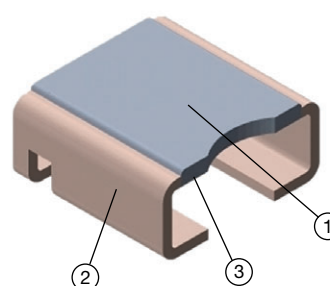
- ⁽¹⁾ WSL marking (www.vishay.com/doc?30327)
- ⁽²⁾ Packaging code: EB (lead (Pb)-free) is a non-standard packaging code designating 1000 piece reels. The non-standard packaging code is identical to our standard EA (lead (Pb)-free), except that it is a package quantity of 1000 pieces
- ⁽³⁾ Follow link for customization capabilities: www.vishay.com/doc?48163

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Component temperature coefficient (including terminal) ⁽¹⁾ TCR measured from -55 °C to 150 °C	ppm/°C	± 75 for 0.5 mΩ to 5 mΩ
		± 110 for 0.3 mΩ, ± 75 for 0.2 mΩ
Element TCR ⁽²⁾	ppm/°C	< 20
Operating temperature range	°C	-65 to +170
Maximum working voltage ⁽³⁾	V	$(P \times R)^{1/2}$

Notes

- “Temperature Coefficient of Resistance for Current Sensing” white paper: www.vishay.com/doc?30405
- (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; refer to item 1 in the Construction Outline
- (3) Maximum working voltage - the WSL is not voltage sensitive, but is limited by power / energy dissipation and is also not ESD sensitive

DIMENSIONS in inches (millimeters)

CONSTRUCTION OUTLINE


- ① Resistive element: refer to table below for element material
- ② Terminal: solid copper
- ③ Terminal / element weld

Notes

- 3D models available: www.vishay.com/doc?30314
- Surface-mount solder profile recommendations: www.vishay.com/doc?31052

MODEL	DIMENSIONS							
	L	W	H	R (REF.)	S	T	U	N
WSLP2726	0.272 ± 0.008 (6.9 ± 0.2)	0.260 + 0.012/- 0.008 (6.6 + 0.3/- 0.2)	Please see table below	0.195 (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				
	a	b	c	d	w
WSLP2726	0.225 (5.71)	0.106 (2.69)	0.035 (0.89)	0.035 (0.89)	0.30 (7.62)

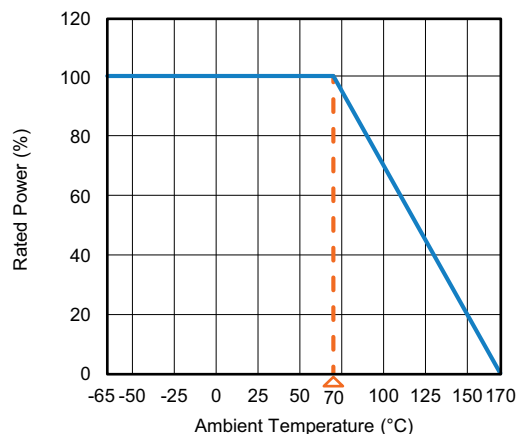
MODEL	RESISTANCE VALUE (mΩ)	THERMAL RESISTANCE ⁽¹⁾ (°C/W)	ELEMENT MATERIAL	HEIGHT H
WSLP2726	0.2	3	Mn-Cu-Sn	0.150 ± 0.008 (3.81 ± 0.2)
	0.3	4	Mn-Cu	0.141 ± 0.008 (3.58 ± 0.2)
	0.5	6	Mn-Cu	0.116 ± 0.008 (2.95 ± 0.2)
	0.7	8	Mn-Cu	0.111 ± 0.008 (2.82 ± 0.2)
	1.0	10	Mn-Cu	0.1055 ± 0.008 (2.68 ± 0.2)
	1.3	11	Ni-Cr	0.119 ± 0.008 (3.02 ± 0.2)
	2.0	16	Ni-Cr	0.114 ± 0.008 (2.9 ± 0.2)
	3.0	19	Ni-Cr	0.110 ± 0.008 (2.79 ± 0.2)
	4.0	22	Ni-Cr	0.110 ± 0.008 (2.79 ± 0.2)
	5.0	38	Ni-Cr	0.110 ± 0.008 (2.79 ± 0.2)

Note

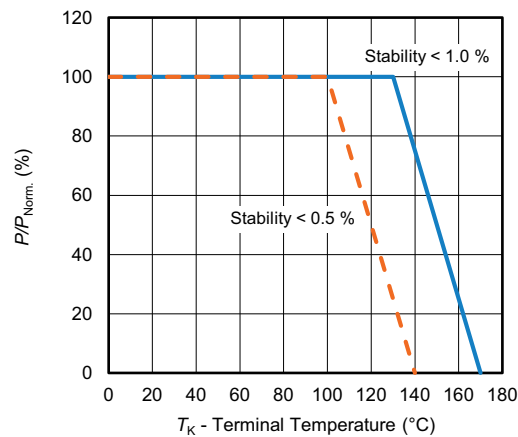
- (1) The full power rating of Power Metal Strip resistors are dependent upon the ability of the circuit board to dissipate the heat energy created in the resistance element. It is recommended to follow common design practices for power semiconductors that ensure the junction temperature is maintained within thermal limits by using large pad surfaces, thermal vias, heavier copper weights, internal layers as well as other thermal spreading features. The thermal resistance values provided function in the same manner as junction to terminal temperature



DERATING - AMBIENT TEMPERATURE

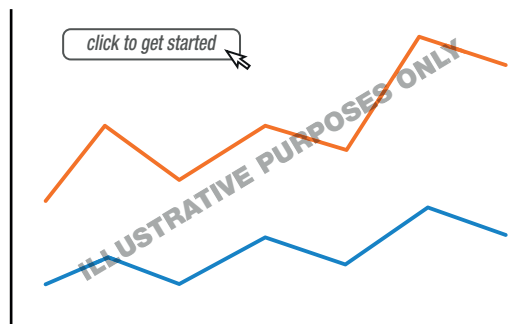


DERATING - TERMINAL TEMPERATURE



Example: WSLP2726 0.0005 Ω

PULSE CAPABILITY



www.vishay.com/resistors/power-metal-strip-calculator

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

Note

- Contact ww2bresistors@vishay.com for application specific performance requirements. Typical performance is better than stated test limits

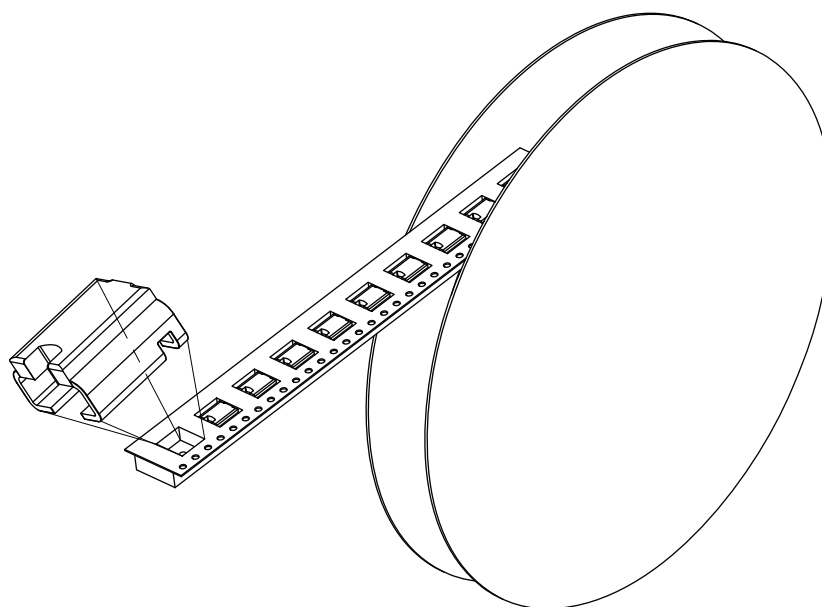


PACKAGING				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSLP2726	16 mm / embossed plastic	330 mm / 13"	1500	EA

Notes

- Embossed carrier tape per EIA-481
- Additional packaging details at www.vishay.com/doc?20051

REEL ORIENTATION





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