



Power Metal Strip® Product Marking

PURPOSE

This document outlines the WSL series product marking that includes all families of the WSL series, such as WSL-18, WSLS, WSLT, WSLP, etc. These product marking methods have been used since 01-Aug-2008.

MANUFACTURING LOCATION		
<p>Manufacturing location is identified by a line above the resistance code. If a line is included above the resistance code, then the part was manufactured in Israel. If a line is included below the resistance code, then the part was manufactured in Mexico. If no line is present, then the parts were manufactured in Columbus, NE USA. This identification is only used for black coated parts with marked resistance codes. Unmarked parts will not have an identification.</p>		
<u>Example:</u>		
R050	R050	R050
Israel (line above)	Mexico (line below)	Columbus, NE (no line)

WSL0603
No marking on the component

WSL0805
<ul style="list-style-type: none"> Maximum of 3, minimum of 2 characters per part and no DALE No tolerance is printed Values below 10 mΩ printed with "L"
<u>Examples:</u>
WSL-0805 0.04 Ω 1 % printed as: R04
WSL-0805 0.015 Ω 1 % printed as: 015
WSL-0805 0.009 Ω 1 % printed as: 9L0

WSL0612
No marking on the component

WSL1206
<ul style="list-style-type: none"> Maximum of 4, minimum of 3 characters per part and no DALE No tolerance is printed Values below 10 mΩ printed with "L"
<u>Examples:</u>
WSL-1206 0.006 Ω 1 % printed as: 6L0
WSL-1206 0.02 Ω 1 % printed as: R02
WSL-1206 0.0249 Ω 1 % printed as: 0249

WSL1020
No marking on the component

WSL2010
0.001 Ω to 0.0069 Ω
<ul style="list-style-type: none"> Maximum of 4, minimum of 3 characters per part and no DALE No tolerance is printed Values below 10 mΩ printed with "L"
<u>Examples:</u>
WSL-2010 0.005 Ω 1 % printed as: 5L0
WSL-2010 0.00499 Ω 1 % printed as: 4L99
0.007 Ω to 0.5 Ω
<ul style="list-style-type: none"> Maximum of 5, minimum of 4 characters per part and no DALE Tolerance may be printed on 1 % parts only Values below 10 mΩ printed with "L"
<u>Examples:</u>
WSL-2010 0.5 Ω 1 % printed as: R50F
WSL-2010 0.055 Ω 1 % printed as: R055F
WSL-2010 0.007 Ω 1 % printed as: 7L0F

WSL2512
0.0005 Ω to 0.00099 Ω
No marking on the component
0.001 Ω to 0.0049 Ω
<ul style="list-style-type: none"> Maximum of 4, minimum of 3 characters per part and no DALE No tolerance is printed Values below 10 mΩ printed with "L"
<u>Examples:</u>
WSL-2512 0.005 Ω 1 % printed as: 5L0
WSL-2512 0.00311 Ω 1 % printed as: 3L11
0.005 Ω to 0.5 Ω
<ul style="list-style-type: none"> Maximum of 5, minimum of 4 characters per part and no DALE Tolerance may be printed on 1 % parts only Values below 10 mΩ printed with "L"
<u>Examples:</u>
WSL-2512 0.5 Ω 1 % printed as: R50F
WSL-2512 0.055 Ω 1 % printed as: R055F
WSL-2512 0.022 Ω 5 % printed as: R022
WSL-2512 0.005 Ω 1 % printed as: 5L0F



WSLS2512			
0.010 Ω to 0.100 Ω			
<ul style="list-style-type: none"> Contains 4 digits First 3 digits will be resistance value Fourth digit will be the stability code, refer to table below 			
Stability Code	Life Stability	TCR	Derating Curve
G	0.25 %	± 75 ppm/°C	70 ° to 170 °C
H	0.5 %	± 75 ppm/°C	70 ° to 170 °C
<u>Examples:</u>			
WSLS-2512 0.1 Ω	G stability	0.5 % printed as:	100G
WSLS-2512 0.010 Ω	H stability	1.0 % printed as:	010H

WSL2816	
0.002 Ω to 0.1 Ω	
<ul style="list-style-type: none"> Maximum of 5, minimum of 2 characters per part and no DALE Tolerance may be printed on 1 % parts only Values below 10 mΩ printed with "L" 	
<u>Examples:</u>	
WSL-2816 0.1 Ω	1 % printed as: R1F
WSL-2816 0.055 Ω	1 % printed as: R055F
WSL-2816 0.055 Ω	5 % printed as: R055
WSL-2816 0.005 Ω	1 % printed as: 5LOF

WSL3637	
0.001 Ω to 0.00199 Ω	
<ul style="list-style-type: none"> Maximum of 5, minimum of 3 characters per part and no DALE Tolerance may be printed on 1 % parts only All values printed with "L" 	
<u>Examples:</u>	
WSL-3637 0.001 Ω	1 % printed as: 1LOF
WSL-3637 0.00199 Ω	1 % printed as: 1L99F
WSL-3637 0.00199 Ω	5 % printed as: 1L99
0.002 Ω to 0.01 Ω	
<ul style="list-style-type: none"> Maximum of 5, minimum of 2 characters per part and DALE is printed on the part Tolerance may be printed on 1 % parts only 	
<u>Examples:</u>	
WSL-3637 0.01 Ω	1 % printed as: DALE R01F
WSL-3637 0.022 Ω	5 % printed as: DALE R022
WSL-3637 0.002 Ω	1 % printed as: DALE 2LOF

WSL2726 / WSL4026	
0.0003 Ω to 0.005 Ω	
<ul style="list-style-type: none"> Maximum of 12 characters (including spaces) per line and no DALE Date code printed based upon week and year of manufacture 	
<u>Examples:</u>	
WSL-2726 0.0003 Ω	1 % printed as: WSL2726 0.0003Ω 1% 1119
WSL-4026 0.0052 Ω	1 % printed as: WSL4026 0.005Ω 1% 1119

WSL3921 / WSL5931
No marking on the component

WSL-9 COPPER JUMPER
<ul style="list-style-type: none"> 2512, 2010, 1206, 0805 marked with 0L0 0603 is not marked

WSK0612
No marking on the component

WSKW0612
No marking on the component

WSK1206	
<ul style="list-style-type: none"> Maximum of 4, minimum of 3 characters per part and no DALE No tolerance is printed Values below 10 mΩ printed with "L" 	
<u>Examples:</u>	
WSK-1206 0.006 Ω	1 % printed as: 6LO
WSK-1206 0.02 Ω	1 % printed as: R02
WSK-1206 0.0249 Ω	1 % printed as: 0249

WSK2512	
0.0005 Ω to 0.00099 Ω	
No marking on the component	
0.001 Ω to 0.0049 Ω	
<ul style="list-style-type: none"> Maximum of 4, minimum of 3 characters per part and no DALE No tolerance is printed Values below 10 mΩ printed with "L" 	
<u>Examples:</u>	
WSK-2512 0.005 Ω	1 % printed as: 5LO
WSK-2512 0.00311 Ω	1 % printed as: 3L11



WSK2512	
0.005 Ω to 0.2 Ω	
<ul style="list-style-type: none"> Maximum of 5, minimum of 4 characters per part and no DALE Tolerance may be printed on 1 % parts only Values below 10 mΩ printed with "L" 	
<u>Examples:</u>	
WSK-2512 0.5 Ω	1 % printed as: R50F
WSK-2512 0.055 Ω	1 % printed as: R055F
WSK-2512 0.022 Ω	5 % printed as: R022
WSK-2512 0.005 Ω	1 % printed as: 5L0F

WSC01/2		
0.1 Ω to 4.99 Ω		
<ul style="list-style-type: none"> Maximum of 5 characters, minimum of 2 characters Line 1 Dale, line 2 resistance 		
<u>Examples:</u>		
DALE	DALE	DALE
0.1 Ω	1 Ω	4.99 Ω

WSC2515		
0.1 Ω to 2.5 kΩ		
<ul style="list-style-type: none"> Maximum of 8 characters, minimum of 5 characters Line 1 model and size Line 2 ohm value and tolerance Line 3 date code consists of location (M); year, week code (YYWW) 		
<u>Examples:</u>		
WSC2515	WSC2515	WSC2515
0.1 Ω 1 %	800 Ω 1 %	2.5 kΩ 1 %
M1843	M1843	M1825

WSC0002	WSC4527	WSC6927
0.1 Ω to 4.92 kΩ	0.1 Ω to 4.92 kΩ	0.1 Ω to 8 kΩ
<ul style="list-style-type: none"> Maximum of 8 characters, minimum of 5 characters Line 1 DALE Line 2 model and size Line 3 ohm value and tolerance Line 4 date code consists of location (M); year, week code (YYWW) 		
<u>Examples:</u>		
DALE	DALE	DALE
WSC0002	WSC4527	WSC6927
0.1 Ω 1 %	900 Ω 1 %	1.2 kΩ 1 %
M1843	M1843	M1843

WSHM2818	
<ul style="list-style-type: none"> Maximum of 8 characters. No DALE Line 1 model and size, line 2 value tolerance, and line 3 is date code YYWW Resistance value has leading zero if ≤ 3 digits. > 3 digits will omit the leading zero. (0.xxx Ω or .xxxx Ω) 	
<u>Examples:</u>	
WSHM2818	WSHM2818
.033Ω1%	.0332Ω1%
1632	1632

WSHP2818	
<ul style="list-style-type: none"> Maximum of 8 characters. No DALE Line 1 model and size, line 2 value tolerance, and line 3 is date code YYWW Resistance value has leading zero if ≤ 3 digits. > 3 digits will omit the leading zero. (0.xxx Ω or .xxxx Ω) 	
<u>Examples:</u>	
WSHP2818	WSHP2818
.033Ω1%	.0332Ω1%
1632	1632

WSR2
<ul style="list-style-type: none"> Maximum of 11 characters. See example below Line 1 Dale Line 2 model and size Line 3 up to 10 digit, value tolerance. If number of digits after decimal exceeds 3 and tolerance 0.5 %, then the leading zero is omitted from tolerance. Example: 0.0332 Ω, 0.5 % will be marked as 0.0332 Ω .5 % Line 4. Date code consists of location (I); year, week code (YYWW). Date code always has alpha suffix (alpha suffix is defined lot control).
<u>Examples:</u>
DALE
WSR-2
0.0332 Ω .5 %
I1414AK

WSR3
<ul style="list-style-type: none"> Maximum of 11 characters. See example below Line 1 Dale Line 2 model and size Line 3 up to 10 digit, value tolerance. If number of digits after decimal exceeds 3 and tolerance 0.5 %, then the leading zero is omitted from tolerance. Example: 0.0332 Ω, 0.5 % will be marked as 0.0332 Ω .5 % Line 4. Date code consists of location (I); year, week code (YYWW). Date code always has alpha suffix (alpha suffix is defined lot control).
<u>Examples:</u>
DALE
WSR-3
0.0125 Ω 1 %
I1346AD



WSR5
0.001 Ω to 0.00749 Ω
<ul style="list-style-type: none"> • Maximum of 11 characters. See example below • Line 1 Dale • Line 2 model and size • Line 3, up to 10 digits, value tolerance. If number of digits after decimal exceeds 3 and tolerance 0.5 %, then the leading zero is omitted from tolerance. Example: 0.0332 Ω, 0.5 % will be marked as 0.0332 Ω .5 % • Line 4, Date code consists of location (I); year, week code (YYWW). Date code always has alpha suffix (alpha suffix is defined lot control). <p><u>Examples:</u></p> <p>DALE WSR-5 0.003 Ω 1 % I1346AD</p>

WSR5
0.0075 Ω to 0.3 Ω
<ul style="list-style-type: none"> • Maximum of 11 characters. No DALE • Line 1 model and size • Line 2 up to 10 digit, value and tolerance. If number of digits after decimal exceeds 3 and tolerance 0.5 %, then the leading zero is omitted from tolerance. Example: 0.0332 Ω, 0.5 % will be marked as 0.0332 Ω .5 % • Line 3. Date code consists of location (I); year, week code (YYWW). Date code always has alpha suffix (alpha suffix is defined lot control). <p><u>Examples:</u></p> <p>WSR-5 0.1 Ω 1 % I1351AA</p>

ADDITIONAL RESOURCES	
WSL product search	www.vishay.com/search?query=wsl
Decade tables	www.vishay.com/doc?30117
Product overview	www.vishay.com/doc?49581