Power Metal Strip® and Power Metal Plate™ Series

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.

Per PCN-DR-00009-2022-REV-0, WSLx marking was removed effective March 1st, 2023. A visual representation of this change can be found at the bottom of the document along with a link to the PCN.

WSL2726 / WSL4026

0.0003 Ω to 0.005 Ω

- Maximum of 12 characters (including spaces) per line and no DALE
- Date code printed based upon week and year of manufacture

Examples:

WSL-2726 0.0003 Ω   1 % printed as: **WSL2726**
.0003Ω 1%
1119

WSL-2726 0.0052 Ω   1 % printed as: **WSL4026**
.005Ω 1%
1119

WSC01/2

0.1 Ω to 4.99 Ω

- Maximum of 5 characters
- Line 1 Dale, line 2 resistance

Examples:

DALE	DALE	DALE
0.1 Ω	1 Ω	4.99 Ω

WSC2515

0.1 Ω to 2.5 kΩ

- Maximum of 10 characters
- Line 1 model and size
- Line 2 ohm value and tolerance
- Line 3 date code consists of location (M); year, week code (YYWW)

Examples:

WSC2515	WSC2515	WSC2515
0.1 Ω 1 %	800 Ω 1 %	2.5 kΩ 1 %
M1843	M1843	M1825

WSC0002 / WSC4527 / WSC6927

WSC0002	WSC4527	WSC6927
0.1 Ω to 4.92 kΩ	**0.1 Ω to 4.92 kΩ**	**0.1 Ω to 8 kΩ**

- Maximum of 12 characters (WSC0002 and WSC4527), maximum of 15 characters (WSC6927)
- 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)

Examples:

DALE	DALE	DALE
WSC0002	WSC4527	WSC6927
0.1 Ω 1 %	900 Ω 1 %	1.2 kΩ 1 %
M1843	M1843	M1843

WSHM2818

- 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)

Examples:

WSHM2818	WSHM2818
0.033Ω1%	.0332Ω1%
1632	1632

WSHP2818

- 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)

Examples:

WSHP2818	WSHP2818
0.033Ω1%	.0332Ω1%
1632	1632

WSR2

- 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 (l); year, week code (YYWW). Date code always has alpha suffix (alpha suffix is defined lot control)

Examples:

DALE
WSR-2
0.0332 Ω .5 %
I1414AK

WSR3

- 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 (l); year, week code (YYWW). Date code always has alpha suffix (alpha suffix is defined lot control)

Examples:

DALE
WSR-3
0.0125 Ω 1 %
I1346AD

WSR5

0.001 Ω to 0.00749 Ω

- 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 (l); year, week code (YYWW). Date code always has alpha suffix (alpha suffix is defined lot control).

Examples:

DALE
WSR-5
0.003 Ω 1 %
I1346AD

WSR5

0.0075 Ω to 0.3 Ω

- 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 (l); year, week code (YYWW). Date code always has alpha suffix (alpha suffix is defined lot control).

Examples:

WSR-5
0.1 Ω 1 %
I1351AA

WFM 2512, WFM 2010

- 5 characters
- No tolerance is printed
- Values below 10 mΩ printed with "L"

R marking decimal point of value in Ω
L marking decimal point of value in mΩ

Examples:

Resistance Value	Marking
0.470 Ω	R4700
0.033 Ω	R0330
0.0068 Ω	6L800

PRODUCT WITHOUT MARKING

- WSL0603
- WSL0805
- WSL0612
- WSL1206
- WSL1020
- WSL2010
- WSL2512
- WSLF2512
- WSLS2512
- WSL2816
- WSL3637
- WSL3921 / WSL5931
- WSL-9 Copper Jumper
- WSK0612
- WSKW0612
- WSK1206
- WSK2512

PART MARKING PRIOR TO PCN-DR-00009-2022-REV-0

MANUFACTURING LOCATION

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 product marking, then the part was manufactured in Mexico. If no line is present, then the parts were manufactured in Columbus, NE USA. Unmarked parts will not have an identification.

Example:

R̄050	**R050̲**	**R050**
Israel	Mexico	Columbus, NE
(line above)	(line below)	(no line)

WSL0805

- Maximum of 3, minimum of 2 characters per part and no DALE
- No tolerance is printed
- Values below 10 mΩ printed with "L"

Examples:

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**

WSL1206

- Maximum of 4, minimum of 3 characters per part and no DALE
- No tolerance is printed
- Values below 10 mΩ printed with "L"
- < 1 mΩ; no marking on the component

Examples:

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**

WSL2010

0.001 Ω to 0.0069 Ω

- Maximum of 4, minimum of 3 characters per part and no DALE
- No tolerance is printed
- Values below 10 mΩ printed with "L"

Examples:

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

- 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"

Examples:

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

- Maximum of 4, minimum of 3 characters per part and no DALE
- No tolerance is printed
- Values below 10 mΩ printed with "L"

Examples:

WSL-2512 0.004 Ω	1 % printed as: **4L0**
WSL-2512 0.0031 Ω	1 % printed as: **3L1**

0.005 Ω to 0.5 Ω

- Maximum of 5, minimum of 4 characters per part and no DALE
- Tolerance may be printed on 1 % parts only, otherwise blank indicates different tolerance
- Values below 10 mΩ printed with "L"

Examples:

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

- 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

Examples:

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

- 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"

Examples:

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: **5L0F**

WSL3637

0.001 Ω to 0.00199 Ω

- 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"

Examples:

WSL-3637 0.001 Ω	1 % printed as:	**1L0F**
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

- Maximum of 5, minimum of 2 characters per part and DALE is printed on the part
- Tolerance may be printed on 1 % parts only

Examples:

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 2L0F**

WSL-9 COPPER JUMPER

- 2512, 2010, 1206, 0805 marked with 0L0
- 0603 is not marked

WSK1206

- Maximum of 4, minimum of 3 characters per part and no DALE
- No tolerance is printed
- Values below 10 mΩ printed with "L"

Examples:

WSK-1206 0.006 Ω	1 % printed as:	**6L0**
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 0.2 Ω

- Maximum of 4, minimum of 3 characters per part and no DALE
- No tolerance is printed
- Values below 10 mΩ printed with "L"

Examples:

WSK-2512 0.022 Ω	5 % printed as:	**R022**
WSK-2512 0.005 Ω	1 % printed as:	**5L0**
WSK-2512 0.00311 Ω	1 % printed as:	**3L11**

Before   After

Fig. 1 - Top Side

Before   After

Fig. 2 - Bottom Side

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
PCN-DR-00009-2022-REV-0	www.vishay.com/quality/pcn-doc/PCN-DR-00009-2022-REV-0/PCN-DR-00009-2022-REV-0.pdf