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Product Change Notification

Product Group: DR/Thu Jun 22, 2023/PCN-DR-00006-2023-REV-0



Addition of Manufacturing Site (Las Torres)

For further information, please contact your regional Vishay office.

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Description of Change: Juarez Mexico (Las Torres facility) is being added as an additional manufacturing location. Production will continue in the existing locations in Columbus NE USA, Juarez Mexico (Bermudez #1 facility), and Beer-Sheva Israel. This will increase total production capacity to reduce lead time and support greater production flexibility.

Classification of Change: Due to anticipated market expansion and increasing sales volume, manufacturing is being expanded in Juarez, Mexico. The Las Torres location is ISO9001 and IATF16949 certified and is comparable to the Bermudez #1 location currently producing Automotive grade products, such as WSLx2512, WSLx2010, and WSLx1206.

Expected Influence on Quality/Reliability/Performance: Not Applicable

Part Numbers/Series/Families Affected: WSL1206*, WSL1206*18, WSLP1206*,

Vishay Brand(S): Vishay Dale

Time Schedule:

Start Shipment Date: Mon Aug 28, 2023

Sample Availability: Samples available upon request.

Product Identification: Manufacturing location is traceable to the unique production number that is found on the reel label information using Lot Code #1 and/or Lot Code #2. Location is available upon request.

Qualification Data: PPAP available now

This PCN is considered approved, without further notification, unless we receive specific customer concerns before Sat Jul 22, 2023 or as specified by contract.

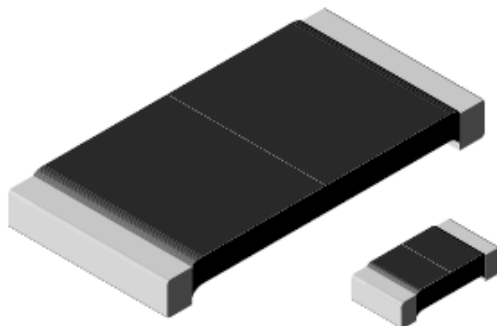
Issued By: Bryan Yarborough, bryan.yarborough@vishay.com



Qualification Package

WSL1206

Power Metal Strip Resistor, Low Value, Surface mount



Use the Control Buttons below to scroll through the pages

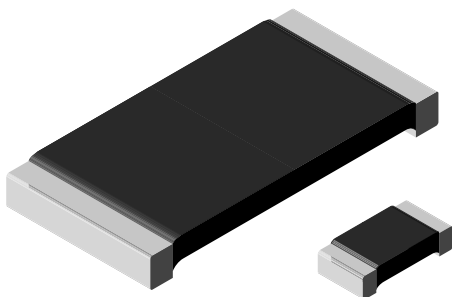
Vishay Dale Electronics

1122 23rd St. Columbus, NE, 68601, U.S.A. Phone (402) 563-3131 www.vishay.com

ONE OF THE WORLD'S LARGEST MANUFACTURERS OF PASSIVE COMPONENTS



Power Metal Strip® Resistors, Low Value (Down to 0.0005 Ω), Surface-Mount



LINKS TO ADDITIONAL RESOURCES



FEATURES

- 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 0.0005 Ω)
- Sulfur resistance by construction that is unaffected by high sulfur environments
- 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



Available



RoHS* Available

HALOGEN FREE Available

GREEN [5-2008] Available

Notes

- * This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details
- 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	RESISTANCE VALUE RANGE Ω ⁽²⁾		WEIGHT (typical) g/1000 pieces
			TOL. ± 0.5 %	TOL. ± 1.0 %	
WSL0603	0603	0.1	0.01 to 0.1	0.01 to 0.1	1.9
WSL0805	0805	0.125	0.005 to 0.2	0.005 to 0.2	4.8
WSL1206	1206	0.25	0.005 to 0.2	0.0005 to 0.2	16.2
WSL2010	2010	0.5	0.004 to 0.5	0.001 to 0.5	38.9
WSL2512	2512	1.0 ⁽¹⁾	0.003 to 0.5	0.0005 to 0.5	63.6
WSL2816	2816	2.0	0.003 to 0.1	0.002 to 0.1	118

Notes

- Part marking: value; tolerance; due to resistor size limitations some resistors will be marked with only the resistance value
- "Thermal Management for Surface-Mount Devices" white paper: www.vishay.com/doc?30380
- ⁽¹⁾ For values above 0.1 Ω derate linearly to 80 % rated power at 0.5 Ω
- ⁽²⁾ WSL1206 0.0005 Ω to 0.00099 Ω is only available with 2 % tolerance (G tolerance code)

GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: WSL25124L000FEA (visit www.vishay.net Vishay Dale parts numbering manual for all options)

W S L 2 5 1 2 4 L 0 0 0 F E A

GLOBAL MODEL (7 digits)	RESISTANCE VALUE ⁽¹⁾ (5 digits)	TOLERANCE CODE (1 digit)	PACKAGING CODE ⁽²⁾ (2 digits)	SPECIAL ⁽³⁾ (up to 2 digits)
WSL0603 WSL0805 WSL1206 WSL2010 WSL2512 WSL2816	L = mΩ* R = decimal 5L000 = 0.005 Ω R0100 = 0.01 Ω * Use "L" for resistance values < 0.01 Ω	D = ± 0.5 % F = ± 1.0 % J = ± 5.0 %	EA = lead (Pb)-free, tape / reel EH = lead (Pb)-free, tape / reel (WSL2816) TA = tin / lead, tape / reel (R86) TG = tin / lead, tape / reel (RT1, for WSL0603 and WSL0805) TH = tin / lead, tape / reel (RJ9, WSL2816) SB = tin / lead, tape / reel for DLA drawings	(dash number) from 1 to 99 as applicable

Notes

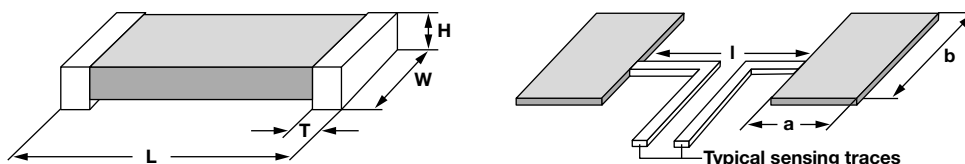
- Per PCN-DR-00009-2022-REV-0, WSL marking will be removed effective March 1st, 2023
- ⁽¹⁾ WSL marking (www.vishay.com/doc?30327); WSL decade values (www.vishay.com/doc?30117)
- ⁽²⁾ Packaging code: EB (lead (Pb)-free) and TB (tin / lead) are non-standard packaging codes designating 1000 piece reels. These non-standard packaging codes are identical to our standard EA (lead (Pb)-free) and TA (tin / lead), except that they have a package quantity of 1000 pieces
- ⁽³⁾ Follow link for customization capabilities: www.vishay.com/doc?48163



TECHNICAL SPECIFICATIONS							
PARAMETER	UNIT	WSL RESISTOR CHARACTERISTICS					
		WSL0603 ⁽¹⁾	WSL0805	WSL1206	WSL2010	WSL2512	WSL2816
Component temperature coefficient (including terminal) ⁽²⁾ TCR measured from -55 °C to +155 °C	ppm/°C	± 75 for 50 mΩ to 100 mΩ	± 75 for 7 mΩ to 500 mΩ				
		± 110 for 10 mΩ to 49 mΩ	± 110 for 5 mΩ to 6.9 mΩ				
		-	± 150 for 3 mΩ to 4.9 mΩ				
		-	± 275 for 1 mΩ to 2.9 mΩ				
		-	± 400 for 0.5 mΩ to 0.99 mΩ				
Element TCR ⁽³⁾	ppm/°C	< 20					
Operating temperature range	°C	-65 to +170					
Maximum working voltage ⁽⁴⁾	V	$(P \times R)^{1/2}$					

Notes

- "Temperature Coefficient of Resistance for Current Sensing" white paper: www.vishay.com/doc?30405
- (1) Consult factory for detailed TCR performance across temperature range associated with PCN-DR-00003-2020 for WSL0603. TCR performance is improved for +25 °C to +155 °C
- (2) Component TCR - total TCR that includes the TCR effects of the resistor element and the copper terminal
- (3) Element TCR - only applies to the alloy used for the resistor element; refer to item 1 in the construction illustration on the following page
- (4) Maximum working voltage - the WSL is not voltage sensitive, but is limited by power / energy dissipation and is also not ESD sensitive

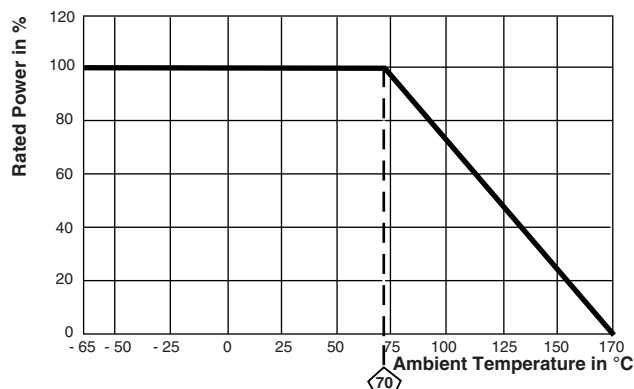
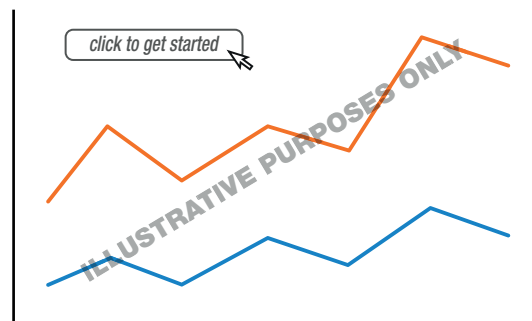
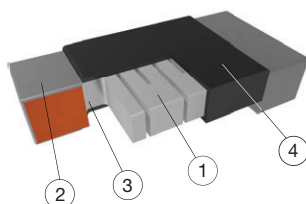
DIMENSIONS in inches (millimeters)**Notes**

- 3D models available: www.vishay.com/doc?30306
- Surface mount solder profile recommendations: www.vishay.com/doc?31052

MODEL	RESISTANCE RANGE (Ω)	DIMENSIONS				SOLDER PAD DIMENSIONS		
		L	W	H	T	a	b	I
WSL0603 ⁽¹⁾	0.01 to 0.1	0.060 ± 0.010 (1.52 ± 0.254)	0.030 ± 0.010 (0.76 ± 0.254)	0.016 ± 0.005 (0.406 ± 0.127)	0.015 ± 0.010 (0.381 ± 0.254)	0.040 (1.01)	0.040 (1.01)	0.020 (0.50)
WSL0805 ⁽²⁾	0.005 to 0.2	0.080 ± 0.010 (2.03 ± 0.254)	0.050 ± 0.010 (1.27 ± 0.254)	0.016 ± 0.005 (0.406 ± 0.127)	0.015 ± 0.010 (0.381 ± 0.254)	0.040 (1.02)	0.050 (1.27)	0.020 (0.50)
WSL1206	0.0005 to 0.00099	0.126 ± 0.010 (3.20 ± 0.254)	0.063 ± 0.010 (1.60 ± 0.254)	0.025 ± 0.010 (0.635 ± 0.254)	0.041 ± 0.010 (1.04 ± 0.254)	0.089 (2.26)	0.076 (1.93)	0.023 (0.58)
	0.001 to 0.0019				0.025 ± 0.010 (0.635 ± 0.254)	0.086 (2.18)	0.076 (1.93)	0.029 (0.74)
	0.002 to 0.0059					0.070 (1.78)	0.076 (1.93)	0.061 (1.55)
	0.006 to 0.20					0.020 ± 0.010 (0.508 ± 0.254)	0.065 (1.65)	0.076 (1.93)
WSL2010	0.001 to 0.0069	0.200 ± 0.010 (5.08 ± 0.254)	0.100 ± 0.010 (2.54 ± 0.254)	0.025 ± 0.010 (0.635 ± 0.254)	0.058 ± 0.010 (1.47 ± 0.254)	0.093 (2.36)	0.120 (3.05)	0.055 (1.40)
	0.007 to 0.5				0.020 ± 0.010 (0.508 ± 0.254)	0.055 (1.40)	0.120 (3.05)	0.130 (3.30)
WSL2512	0.0005 to 0.00099	0.250 ± 0.010 (6.35 ± 0.254)	0.125 ± 0.010 (3.18 ± 0.254)	0.025 ± 0.010 (0.635 ± 0.254)	0.107 ± 0.010 (2.72 ± 0.254)	0.120 (3.05)	0.145 (3.68)	0.050 (1.27)
	0.001 to 0.0049				0.087 ± 0.010 (2.21 ± 0.254)			0.125 (3.18)
	0.005 to 0.0069				0.047 ± 0.010 (1.19 ± 0.254)	0.083 (2.11)		
	0.007 to 0.5				0.030 ± 0.010 (0.762 ± 0.254)	0.065 (1.65)		0.160 (4.06)
WSL2816	0.002 to 0.00399	0.280 ± 0.010 (7.1 ± 0.254)	0.165 ± 0.010 (4.2 ± 0.254)	0.025 ± 0.010 (0.635 ± 0.254)	0.098 ± 0.010 (2.49 ± 0.254)	0.135 (3.43)	0.185 (4.7)	0.060 (1.52)
	0.004 to 0.1				0.062 ± 0.010 (1.57 ± 0.254)	0.096 (2.45)		0.125 (3.20)

Notes

- (1) PCN-DR-00003-2020 changed terminal height for WSL0603 from 0.013" ± 0.005" for clad construction to 0.016" ± 0.005" for welded construction
- (2) PCN-DR-00021-2021-REV-1 changed terminal height for WSLP0805 from 0.013" ± 0.005" for clad construction to 0.016" ± 0.005" for welded construction

**DERATING****PULSE CAPABILITY**
www.vishay.com/resistors/power-metal-strip-calculator
WELDED CONSTRUCTION

- ① Resistive element: solid metal nickel-chrome or manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- ② Plated terminal: solid copper, 100 % Sn (100 μ" min.) with 100 % Ni (20 μ" min.) under layer finish
- ③ Terminal / element weld
- ④ Silicone coating with ink print

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± (0.5 % + 0.0005 Ω)
Short time overload	Refer to link for short time overload performance and pulse capability; www.vishay.com/resistors/power-metal-strip-calculator/	± (0.5 % + 0.0005 Ω)
Low temperature operation	-65 °C for 24 h	± (0.5 % + 0.0005 Ω)
High temperature exposure	1000 h at + 170 °C	± (1.0 % + 0.0005 Ω)
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (0.5 % + 0.0005 Ω)
Mechanical shock	100 g's for 6 ms, 5 pulses	± (0.5 % + 0.0005 Ω)
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± (0.5 % + 0.0005 Ω)
Load life	1000 h at rated power, + 70 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.0005 Ω)
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (0.5 % + 0.0005 Ω)
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	± (0.5 % + 0.0005 Ω)

PACKAGING ⁽¹⁾				
MODEL	REEL			
	TAPE WIDTH	DIAMETER	PIECES/REEL	CODE
WSL0603	8 mm / punched paper	178 mm / 7"	5000	EA
WSL0805	8 mm / punched paper	178 mm / 7"	5000	EA
WSL1206	8 mm / embossed plastic	178 mm / 7"	4000	EA
WSL2010	12 mm / embossed plastic	178 mm / 7"	4000	EA
WSL2512	12 mm / embossed plastic	178 mm / 7"	2000	EA
WSL2816	12 mm / embossed plastic	178 mm / 7"	2000	EH

Notes

- Embossed carrier tape per EIA-481
- (1) Additional packaging details at www.vishay.com/doc?220051



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SUPPLIER - Vishay-Juarez - Las Torres		PART NAME - WSL-1206 0.001 Ω Surface Mount Resistor								
NAME OF LABORATORY - Vishay Dale Electronics Test Lab										
DESCRIPTION	AEC TEST #	TEST CONDITIONS	LIMIT	OHMIC ADDER	QTY. TESTED	HOURS/ CYCLES	RANGE			
High Temperature Exposure (Storage)	3	MIL-STD-202, Method 108, 2000 Hrs @ T=170°C @ 0% power, Measurements at 24± 2 hrs	±(1.0%)	0.0005	77	2000	-0.575	TO		
Temperature Cycling	4	MIL-STD-202 Method 107 Condition F, -55°C to 150°C, Dwell time = 15min, 2000 Cycles.	±(0.5%)	0.0005	77	2000	-0.024	TO		
Moisture Resistance	6	MIL-STD-202, Method 106, t=24 hours/cycle. Note: Steps 7a & 7b not required, 0% power, No Polo, 65°C, Measurement at 24± 2 Hrs after test.	±(0.5%)	0.0005	77		-0.017	TO		
Biased Humidity	7	MIL-STD-202, Method 103, 1000 hrs 85°C/85%RH. Note: Specified conditions: 10% of operating power. Measurement at 24± 2 hrs after test.	±(0.5%)	0.0005	77	1000	-0.052	TO		
Operational Life	8.1	MIL-STD 202, Method 108, Condition F; 1.5 hrs "ON", 0.5 hrs "OFF"; Ta=70°C @rated power from derating curve. Measurements at 24± 2 hrs after test. Test to 2000hrs.	±(1.0%)	0.0005	24	2000	-0.094	TO		
Operational Life	8	MIL-STD 202, Method 108, 2,000 hr test; Condition F; 1.5 hrs "ON", 0.5 hrs "OFF"; +125°C @ rated power. Measurement 24±4 hrs. after test conclusion.	±(1.0%)	0.0005	77	2000	-0.195	TO		
External Visual	9	Inspect per ICP document and sections listed in general specifications section. Inspect device construction, marking and workmanship.	Per MIL-STD-883 2009.15		All Qual. Parts					
Physical Dimension	10	JESD22 Method JB-100, Verify physical dimensions to the standard WSL-1206 data sheet.	Per Datasheet		30					
Resistance to Solvents	12	MIL-STD-202, Method 215 Aqueous wash chemical- OKEM Clean or equivalent.	Marking remains legible		5					
Mechanical Shock	13	MIL-STD-202, Method 213	±(0.5%)	0.0005	30		-0.054	TO		
Vibration	14	MIL-STD-202, Method 204, Condition D	±(0.5%)	0.0005	30		-0.03	TO		
Resistance to Solder Heat	15	MIL-STD-202, Method 210, Condition K	±(0.5%)	0.0005	30		0.004	TO		
Thermal Shock	16	Temperatute Cycling has been substituted as it is a more severe test; refer to test 4.	NA		NA					
ESD	17	AEC-Q200-002	±(1.0%)		15		-0.025	TO		
Solderability	18.1	J-STD-002, Test B1 , Preconditioning E 4 hours @ 155°C dry heat, Pb-free Solder @ 245°C, Magnification 50X.	>95% coverage		15					
Solderability	18.2	J-STD-002, Test B (Backward Compatibility), Preconditioning Category E, 4 hours @ 155°C dry heat, Pb Solder @ 215°C, Magnification 50X.	>95% coverage		15					
Solderability	18.3	J-STD-002, Test D (Resistance to Dissolution), Preconditioning Category E, 4 hours @ 155°C dry heat, Pb-Free Solder @ 260°C, Magnification 50X.	>95% coverage		15					
Electrical Characterization	19	RTC at -65°C & 170°C	±275 ppm/°C		30	-65°C	174.00	TO		
Flammability	20	UL-94	V-0		NA	170°C	97.30	TO		
Board Flex	21	AEC-Q200-005 2mm min	±(0.5%)	0.0005	30	Reading 2	-0.0560	TO		
Terminal Strength (SMD)	22	AEC-Q200-006 Force of 1.8 Kg for 60 seconds.	±(0.5%)	0.0005	30	Reading 3	-0.0780	TO		
Flame Retardance	24	AEC-Q200-001			N/A		-0.009	TO		

Note 1) Flame retardance requires the application of 9V for 1 hour on a low resistance value current sense resistor, which causes the device to be substantially overpowered. The Power Metal Strip ® technology, under these conditions, resulting in temperatures that exceeds 350 °C for > 10 seconds.

SUPPLIER - Vishay-Juarez - Las Torres		PART NAME - WSL-1206 0.01 Ω Surface Mount Resistor							
NAME OF LABORATORY - Vishay Dale Electronics Test Lab									
DESCRIPTION	AEC TEST #	TEST CONDITIONS	LIMIT	OHMIC ADDER	QTY. TESTED	HOURS/ CYCLES	RANGE		
High Temperature Exposure (Storage)	3	MIL-STD-202, Method 108, 2000 Hrs @ T=170°C @ 0% power, Measurements at 24± 2 hrs	±(1.0%)	0.0005	77	2000	0.141	TO	0.2
Temperature Cycling	4	MIL-STD-202 Method 107 Condition F, -55°C to 150°C, Dwell time = 15min, 2000 Cycles.	±(0.5%)	0.0005	77	2000	0.012	TO	0.3
Moisture Resistance	6	MIL-STD-202, Method 106, t=24 hours/cycle. Note: Steps 7a & 7b not required, 0% power, No Polo, 65°C, Measurement at 24± 2 Hrs after test.	±(0.5%)	0.0005	77		-0.012	TO	0.0
Biased Humidity	7	MIL-STD-202, Method 103, 1000 hrs 85°C/85%RH. Note: Specified conditions: 10% of operating power. Measurement at 24± 2 hrs after test.	±(0.5%)	0.0005	77	1000	0.011	TO	0.0
Operational Life	8.1	MIL-STD 202, Method 108, Condition F; 1.5 hrs "ON", 0.5 hrs "OFF"; Ta=70°C @rated power from derating curve. Measurements at 24± 2 hrs after test. Test to 2000hrs.	±(1.0%)	0.0005	24	2000	-0.402	TO	0.0
Operational Life	8	MIL-STD 202, Method 108, 2,000 hr test; Condition F; 1.5 hrs "ON", 0.5 hrs "OFF"; +125°C @ rated power. Measurement 24±4 hrs. after test conclusion.	±(1.0%)	0.0005	77	2000	0.007	TO	0.0
External Visual	9	Inspect per ICP document and sections listed in general specifications section. Inspect device construction, marking and workmanship.	Per MIL-STD-883 2009.15		All Qual. Parts				
Physical Dimension	10	JESD22 Method JB-100, Verify physical dimensions to the standard WSL-1206 data sheet.	Per Datasheet		30				
Resistance to Solvents	12	MIL-STD-202, Method 215 Aqueous wash chemical- OKEM Clean or equivalent.	Marking remains legible		5				
Mechanical Shock	13	MIL-STD-202, Method 213	±(0.5%)	0.0005	30		-0.011	TO	0
Vibration	14	MIL-STD-202, Method 204, Condition D	±(0.5%)	0.0005	30		-0.016	TO	0.0
Resistance to Solder Heat	15	MIL-STD-202, Method 210, Condition K	±(0.5%)	0.0005	30		0.004	TO	0.0
Thermal Shock	16	Temperatute Cycling has been substituted as it is a more severe test; refer to test 4.	NA		NA				
ESD	17	AEC-Q200-002	±(1.0%)		15		-0.025	TO	-0.0
Solderability	18.1	J-STD-002, Test B1 , Preconditioning E 4 hours @ 155°C dry heat, Pb-free Solder @ 245°C, Magnification 50X.	>95% coverage		15				
Solderability	18.2	J-STD-002, Test B (Backward Compatibility), Preconditioning Category E, 4 hours @ 155°C dry heat, Pb Solder @ 215°C, Magnification 50X.	>95% coverage		15				
Solderability	18.3	J-STD-002, Test D (Resistance to Dissolution), Preconditioning Category E, 4 hours @ 155°C dry heat, Pb-Free Solder @ 260°C, Magnification 50X.	>95% coverage		15				
Electrical Characterization	19	RTC at -65°C & 170°C	±75 ppm/°C		30	-65°C 170°C	49.50 42.40	TO	70 55
Flammability	20	UL-94	V-0		NA				
Board Flex	21	AEC-Q200-005 2mm min	±(0.5%)	0.0005	30	Reading 2 Reading 3	-0.0560 -0.0780	TO	0.1 0.1
Terminal Strength (SMD)	22	AEC-Q200-006 Force of 1.8 Kg for 60 seconds.	±(0.5%)	0.0005	30		-0.009	TO	0.
Flame Retardance	24	AEC-Q200-001			N/A				

Note 1) Flame retardance requires the application of 9V for 1 hour on a low resistance value current sense resistor, which causes the device to be substantially overpowered. The Power Metal Strip ® tech under these conditions, resulting in temperatures that exceeds 350 °C for > 10 seconds.

SUPPLIER - Vishay-Juarez - Las Torres		PART NAME - WSL-1206 0.2 Ω Surface Mount Resistor							
NAME OF LABORATORY - Vishay Dale Electronics Test Lab									
DESCRIPTION	AEC TEST #	TEST CONDITIONS	LIMIT	OHMIC ADDER	QTY. TESTED	HOURS/ CYCLES	RANGE		
High Temperature Exposure (Storage)	3	MIL-STD-202, Method 108, 2000 Hrs @ T=170°C @ 0% power, Measurements at 24± 2 hrs	±(1.0%)	0.0005	77	2000	0.015	TO	
Temperature Cycling	4	MIL-STD-202 Method 107 Condition F, -55°C to 150°C, Dwell time = 15min, 2000 Cycles.	±(0.5%)	0.0005	77	2000	0.005	TO	
Moisture Resistance	6	MIL-STD-202, Method 106, t=24 hours/cycle. Note: Steps 7a & 7b not required, 0% power, No Polo, 65°C, Measurement at 24± 2 Hrs after test.	±(0.5%)	0.0005	77		-0.015	TO	
Biased Humidity	7	MIL-STD-202, Method 103, 1000 hrs 85°C/85%RH. Note: Specified conditions: 10% of operating power. Measurement at 24± 2 hrs after test.	±(0.5%)	0.0005	77	1000	-0.01	TO	
Operational Life	8.1	MIL-STD 202, Method 108, Condition F; 1.5 hrs "ON", 0.5 hrs "OFF"; Ta=70°C @rated power from derating curve. Measurements at 24± 2 hrs after test. Test to 2000hrs.	±(1.0%)	0.0005	24	2000	-0.799	TO	
Operational Life	8	MIL-STD 202, Method 108, 2,000 hr test; Condition F; 1.5 hrs "ON", 0.5 hrs "OFF"; +125°C @ rated power. Measurement 24±4 hrs. after test conclusion.	±(1.0%)	0.0005	77	2000	-0.015	TO	
External Visual	9	Inspect per ICP document and sections listed in general specifications section. Inspect device construction, marking and workmanship.	Per MIL-STD-883 2009.15		All Qual. Parts				
Physical Dimension	10	JESD22 Method JB-100, Verify physical dimensions to the standard WSL-1206 data sheet.	Per Datasheet		30				
Resistance to Solvents	12	MIL-STD-202, Method 215 Aqueous wash chemical- OKEM Clean or equivalent.	Marking remains legible		5				
Mechanical Shock	13	MIL-STD-202, Method 213	±(0.5%)	0.0005	30		-0.015	TO	
Vibration	14	MIL-STD-202, Method 204, Condition D	±(0.5%)	0.0005	30		-0.01	TO	
Resistance to Solder Heat	15	MIL-STD-202, Method 210, Condition K	±(0.5%)	0.0005	30		0.004	TO	
Thermal Shock	16	Temperature Cycling has been substituted as it is a more severe test; refer to test 4.	NA		NA				
ESD	17	AEC-Q200-002	±(1.0%)		15		-0.025	TO	
Solderability	18.1	J-STD-002, Test B1 , Preconditioning E 4 hours @ 155°C dry heat, Pb-free Solder @ 245°C, Magnification 50X.	>95% coverage		15				
Solderability	18.2	J-STD-002, Test B (Backward Compatibility), Preconditioning Category E, 4 hours @ 155°C dry heat, Pb Solder @ 215°C, Magnification 50X.	>95% coverage		15				
Solderability	18.3	J-STD-002, Test D (Resistance to Dissolution), Preconditioning Category E, 4 hours @ 155°C dry heat, Pb-Free Solder @ 260°C, Magnification 50X.	>95% coverage		15				
Electrical Characterization	19	RTC at -65°C & 170°C	±75 ppm/°C		30	-65°C	50.50	TO	
Flammability	20	UL-94	V-0		NA	170°C	45.10	TO	
Board Flex	21	AEC-Q200-005 2mm min	±(0.5%)	0.0005	30	Reading 2	-0.0560	TO	
Terminal Strength (SMD)	22	AEC-Q200-006 Force of 1.8 Kg for 60 seconds.	±(0.5%)	0.0005	30	Reading 3	-0.0780	TO	
Flame Retardance	24	AEC-Q200-001			N/A				

Note 1) Flame retardance requires the application of 9V for 1 hour on a low resistance value current sense resistor, which causes the device to be substantially overpowered. The Power Metal Strip ® technology is designed to withstand these conditions, resulting in temperatures that exceeds 350 °C for > 10 seconds.