



Product Change Notification



Product Group: Vishay Dale/September 19, 2014/PCN-DI-204-2014 Rev 2

Additional manufacturing location for Automotive Grade IHLP[®] parts in the 5050 and 6767 case sizes

DESCRIPTION OF CHANGE: The assembly site for select Automotive Grade IHLP models will offer an additional manufacturing location. The three manufacturing sites will be Yankton SD, USA; Beer Sheva, Israel; and Danshui, China.

CLASSIFICATION OF CHANGE: Assembly Site

REASON FOR CHANGE: The addition of assembly site is to add Automotive Grade IHLP production to existing Commercial Grade IHLP production in Danshui China. This new manufacturing location will supplement our existing capacity and will offer shorter lead times.

EXPECTED INFLUENCE ON QUALITY/RELIABILITY/PERFORMANCE: None. The Danshui China site has been manufacturing Commercial Grade IHLP product for 3 years with no effect on the quality, reliability, and/or performance of the IHLP product, and also manufacturing automotive grade IHLP series inductors in other case sizes. This additional location will encompass the full manufacturing process.

PRODUCT CATEGORY: Inductors

PART NUMBERS/SERIES/FAMILIES AFFECTED: IHLP-5050CE-A1 IHLP-5050CE-1A IHLP-5050CE-5A IHLP-5050EZ-A1 IHLP-5050EZ-1A IHLP-5050EZ-5A IHLP-5050FD-A1 IHLP-5050FD-1A IHLP-5050FD-5A
IHLP-6767DZ-A1 IHLP-6767DZ-1A IHLP-6767DZ-5A IHLP-6767GZ-A1 IHLP-6767GZ-1A IHLP-6767GZ-5A

VISHAY BRAND(s): Vishay Dale

TIME SCHEDULE:

Start Shipment Date: First shipments available beginning in Q1, 2015 for IHLP-5050 case size
First shipments available beginning in Q3, 2015 for IHLP-6767 case size

Last Time Buy Date: N/A

Last Time Shipment Date: N/A

SAMPLE AVAILABILITY: Samples will be available beginning in Q1, 2015 for IHLP-5050 case size
Samples will be available beginning in Q3, 2015 for IHLP-6767 case size

PRODUCT IDENTIFICATION: Product identification is coded in the part marking lot code.

AA through AZ – Country of Origin = USA
BA through MZ – Country of Origin = Israel
NA through ZZ – Country of Origin = China

QUALIFICATION DATA: See Table 1.

Qualification data will be available beginning in Q1, 2015 for IHLP-5050 case size
Qualification data will be available beginning in Q3, 2015 for IHLP-6767 case size



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

ISSUED BY: Doug Lillie, Product Marketing Manager

For further information, please contact your regional Vishay office **CONTACT INFORMATION**

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Table 1: IHLP Qualification Plan for China Manufacturing Location

Perform the following AEC-Q200 test on each footprint.

Test #	Description	Ref. Spec. Meth / Cond	Test Conditions	End Point Δ Requirements	Sample Size
0 ¹	Preconditioning for lead-free products	AEC-Q200 Rev C - Pb Free Specific Tests Table 4.2	As specified in sections 4.3.1 thru 4.3.3 except visual per DPS-11,865 10X magnification	L=±15% of initial, DCR =±15% of initial	475
1	Pre- and Post-Stress Electrical Test	IHLP Data Sheet	L (uH) – 100KHz and 250mV DCR – 25°C Ambient	L=±15% of initial, DCR =±15% of initial	All tests requiring electrical data
3	High Temp Exposure	MIL-STD-202G Method 108A Condition D	125°C for 1000 (+24,-0) Hrs Unpowered	L=±15% of initial, DCR =±15% of initial	77
4	Temperature Cycling	JESD22 Method JA-104	-40C to +125C, 1000 cycles. Dwell =.25 Hour	L=±15% of initial, DCR =±15% of initial	77



6	Moisture Resistance	MIL-STD-202G Method 106G	10 Continuous 24 Hour Cycles, Steps 7a & 7b not required. Unpowered. Measurement at 24 ±2 hours after conclusion	L=±15% of initial, DCR =±15% of initial	77
7	Biased Humidity	MIL-STD-202G Method 103B	1000 hours @85°C/85%RH, Unpowered. Measurement within 24+/-2 hours after test.	L=±15% of initial, DCR =±15% of initial	77
8	Operational Life	MIL-PRF-27 Section 4.7.23	1000 hr @ 85°C with full rated current Do not perform the following tests: - Open or short circuit during test - Induced voltage after test - Insulation resistance after test - DWV after test	L=±15% of initial, DCR =±15% of initial	77
9 ²	External Visual	MIL-STD-883G Method 2009.9	Inspect construction and workmanship.	Pass all criteria as defined in DPS-11,865 VA1	All
10 ³	Physical Dimensions	JESD22 Method JB-100	Verify physical dimensions per part specification	All parts within dimensional tolerance per data sheet	30
12	Resistance to Solvents	MIL-STD-202G Method 215K	Add Aqueous wash chemical. OKEM Clean or equivalent. Do not use banned solvents.	Pass all criteria as defined in DPS-11,865 VA1 L=±15% of initial, DCR =±15% of initial	5
13 ⁴	Mechanical Shock	MIL-STD-202G Method 213B Condition C Figure 1	100G Peak, 6msec, half-sine waveform, 12.3 ft/sec velocity in each of three axis, X,Y, & Z.	Pass all criteria as defined in DPS-11,865 VA1 L=±15% of initial, DCR =±15% of initial	30
14 ⁴	Vibration	MIL-STD-202G Method 204D	5g's for 20 minutes, 12 cycles each of 3 orientations. Test from 10-2000 Hz	Pass all criteria as defined in DPS-11,865 VA1 L=±15% of initial, DCR =±15% of initial	30
15	Resistance to Solder Heat	MIL-STD-202G Method 210F Condition K	IR/convection reflow. 250 ± 5°C for 30 ± 5sec. Ramp rate 1°C/s to 4°C/; Above 183°C for 90s-120s	L=±15% of initial, DCR =±15% of initial	30
16	Thermal Shock	MIL-STD-202G Method 107G	-40/+125°C. 300 cycles. 20 sec transfer, 15 minute dwell	Pass all criteria as defined in DPS-11,865 VA1 L=±15% of initial, DCR =±15% of initial	30



17	ESD	AEC-Q200-002	Determine the Classification of the part.	L=±15% of initial, DCR =±15% of initial	15
18	Solderability	J-STD-002C Method B1	4 hours @ 155°C dry heat @ 255°C. 90° dipping angle.	95% or greater coverage on "A" (seating plane) per J-STD-002C	15
		J-STD-002C Method D1 @ 260°C Category 3	Resistance to Dissolution of Metallization Test. Solder bath dip and look. 255°C ± 5°C. 20-45° dipping angle	95% or greater coverage on "A" (seating plane) per J-STD-002C	15
		J-STD-002C Method B1 Category 3 (Forward Compatibility)	Solder Bath/Dip and Look Test. 260°C (+0/-5) °C. 90° dipping angle.	95% or greater coverage on "A" (seating plane) per J-STD-002C	15
		J-STD-002C Method B Category 3 (Backward Compatibility)	Solder Bath/Dip and Look Test. 220°C (+5/-0) °C. 90° dipping angle.	95% or greater coverage on "A" (seating plane) per J-STD-002C	15
19 ⁵	Electrical Characterization	User Specification	Min, Max, Mean, and Standard Deviation @ Min (-55C), Room, and Max (+125C) operating temperatures. After mounted, allow +/-5% shift DCR at room temp. -55C/+125C DCR Max calculated using temp conversion for copper: $R_2 = [(T_2 + 234.5) / (234.5 + T_A)] * 1.05R_A$ (A = Ambient, 2 = new con)	Final Test: L=±15% of initial, DCR per calculated limits described in test conditions. L test for -55C & +125C = ±15% initial	30
20	Flammability	UL-94	V-0	C of C	C of C
21	Board Flex	AEC-Q200-005 Appendix 2	2mm minimum flex for 60 (+5) sec	Pass all criteria as defined in DPS-11,865 VA1 L=±15% of initial, DCR =±15% of initial	30
22	Terminal Strength	AEC-Q200-006 Appendix 1	Force of 1.8kg (17.7 N) for 60 seconds	Pass all criteria as defined in DPS-11,865 VA1 L=±15% of initial, DCR =±15% of initial	30

¹Precondition for Test # 3, 4, 6, 7, 8, 16, 21, & 22

²Test performed at manufacturing site

³Reuse for any other test

⁴Pieces reused for other note 4.

⁵ A total of 3 lots will consist of one lot from low, high, and mid value for each family.