

Inductors, Commercial, Molded, Axial Leaded



ELECTRICAL SPECIFICATIONS

Inductance Tolerance: $\pm 1\%$, $\pm 3\%$, $\pm 5\%$, $\pm 10\%$, $\pm 20\%$, other tolerances available on request

Insulation Resistance: 1000 M Ω minimum per MIL-STD-202, method 302, test condition B

Dielectric Strength: Per MIL-STD-202, method 301: 1000 V_{AC} for IM-2, IM-4, IM-6, IM-8, IM-9 and IM-10
200 V_{AC} for IM-1

TEST EQUIPMENT (1)

- H/P 4342A Q-meter
- Measurements corporation megacycle meter, model 59
- Wheatstone bridge

Note

(1) Test procedure per MIL-PRF-15305

MATERIAL SPECIFICATIONS

Encapsulant: Epoxy

Standard Terminals: IM-1 and IM-2: 24 AWG; IM-4, IM-6 and IM-9: 22 AWG; IM-8: 21 AWG; IM-10: 20 AWG, tinned copper

ENVIRONMENTAL PERFORMANCE		
TEST	CONDITIONS	SPECIFICATIONS
Barometric Pressure	C	MIL-STD-202, method 105
Thermal Shock	A-1	MIL-STD-202, method 107
Flammability	-	MIL-STD-202, method 111
Overload	-	MIL-PRF-15305
Low Temperature Storage	-	MIL-PRF-15305
Resistance to Soldering Heat	A	MIL-STD-202, method 210
Resistance to Solvents	-	MIL-STD-202, method 215

FEATURES

- Wide inductance range in small package
- Flame retardant coating
- Precision performance, excellent reliability, sturdy construction
- Epoxy molded construction provides superior moisture protection
- Compliant to RoHS Directive 2011/65/EU



RoHS
COMPLIANT

MECHANICAL SPECIFICATIONS

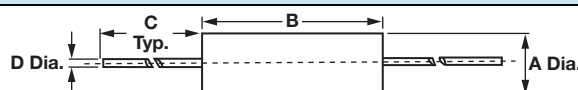
Terminal Strength: Per MIL-STD-202, method 211, test condition A: For IM-1, 3 lb pull; for IM-2, IM-4, IM-6, IM-8, IM-9 and IM-10, 5 lb pull and twist

Weight: IM-1 = 0.25 g maximum, IM-2 = 0.30 g maximum, IM-4 = 0.65 g maximum, IM-6 = 0.95 g maximum, IM-8 = 1.5 g maximum, IM-9 = 2.0 g maximum, IM-10 = 2.5 g maximum

INDUCTANCE RANGE AND MILITARY STANDARD

MODEL	INDUCTANCE RANGE (μ H)	
	MIN.	MAX.
IM-1	0.10	100
IM-2	0.027	0.082
	0.10	1
	1.2	27
	33	1000
IM-4	0.15	4.7
	5.6	33
	36	240
	270	1800
IM-6	0.10	2.7
	3.3	27
	33	220
	270	1000
IM-8	1100	3600
IM-9	68	150
IM-10	3900	10 000

DIMENSIONS in inches [millimeters]



MODEL		A (DIA.)	B	C (TYP.)	D (DIA.)
IM-1	Max.	0.086 [2.18]	0.210 [5.33]	1.62 [41.15]	0.0215 [0.546]
	Min.	0.070 [1.78]	0.190 [4.83]	1.38 [35.05]	0.0185 [0.470]
IM-2	Max.	0.105 [2.67]	0.260 [6.60]	1.63 [41.40]	0.0215 [0.546]
	Min.	0.085 [2.16]	0.240 [6.10]	1.25 [31.75]	0.0185 [0.470]
IM-4	Max.	0.165 [4.19]	0.385 [9.78]	1.63 [41.40]	0.027 [0.686]
	Min.	0.145 [3.68]	0.365 [9.27]	1.25 [31.75]	0.023 [0.584]
IM-6	Max.	0.200 [5.08]	0.450 [11.43]	1.63 [41.40]	0.027 [0.686]
	Min.	0.180 [4.57]	0.430 [10.92]	1.25 [31.75]	0.023 [0.584]
IM-8	Max.	0.225 [5.72]	0.570 [14.48]	1.63 [41.40]	0.030 [0.762]
	Min.	0.205 [5.21]	0.550 [13.97]	1.25 [31.75]	0.026 [0.660]
IM-9	Max.	0.260 [6.60]	0.570 [14.48]	1.63 [41.40]	0.027 [0.686]
	Min.	0.240 [6.10]	0.550 [13.97]	1.25 [31.75]	0.023 [0.584]
IM-10	Max.	0.250 [6.35]	0.750 [19.05]	1.63 [41.40]	0.034 [0.864]
	Min.	0.230 [5.84]	0.730 [18.54]	1.25 [31.75]	0.030 [0.762]



STANDARD ELECTRICAL SPECIFICATIONS							
MODEL	IND. (μ H)	TOL. (%)	Q MIN.	TEST FREQUENCY Q (MHz)	SRF MIN. (MHz) ⁽¹⁾	DCR MAX. (Ω)	RATED DC CURRENT (mA) ⁽²⁾
IM-4	18.0	± 10	75	2.5	34.0	2.25	185
IM-4	22.0	± 10	75	2.5	30.0	2.50	175
IM-4	27.0	± 10	60	2.5	25.0	2.60	170
IM-4	33.0	± 10	65	2.5	19.0	3.0	165
IM-4	36.0	± 5	60	2.5	15.5	2.50	180
IM-4	39.0	± 5	60	2.5	14.5	2.60	176
IM-4	43.0	± 5	60	2.5	13.7	2.70	172
IM-4	47.0	± 5	55	2.5	13.0	2.75	170
IM-4	51.0	± 5	55	2.5	12.7	2.85	167
IM-4	56.0	± 5	55	2.5	12.0	3.00	164
IM-4	62.0	± 5	55	2.5	11.5	3.15	160
IM-4	68.0	± 5	55	2.5	11.0	3.30	156
IM-4	75.0	± 5	55	2.5	10.5	3.70	147
IM-4	82.0	± 5	50	2.5	10.3	3.90	143
IM-4	91.0	± 5	50	2.5	10.0	4.30	136
IM-4	100.0	± 5	50	2.5	9.5	4.50	133
IM-4	110.0	± 5	60	0.79	8.9	4.90	128
IM-4	120.0	± 5	65	0.79	8.7	5.20	124
IM-4	130.0	± 5	65	0.79	8.5	5.45	121
IM-4	150.0	± 5	65	0.79	8.0	6.05	114
IM-4	160.0	± 5	65	0.79	7.5	6.40	111
IM-4	180.0	± 5	65	0.79	7.0	6.75	108
IM-4	200.0	± 5	65	0.79	6.5	7.10	106
IM-4	220.0	± 5	65	0.79	6.2	7.45	103
IM-4	240.0	± 5	65	0.79	5.9	7.80	101
IM-4	270.0	± 5	65	0.79	5.7	11.0	129
IM-4	300.0	± 5	65	0.79	5.4	11.5	125
IM-4	330.0	± 5	65	0.79	5.1	12.0	123
IM-4	360.0	± 5	65	0.79	4.8	15.5	108
IM-4	390.0	± 5	65	0.79	4.5	16.3	105
IM-4	430.0	± 5	65	0.79	4.2	17.1	102
IM-4	470.0	± 5	65	0.79	3.9	17.9	100
IM-4	510.0	± 5	65	0.79	3.7	18.8	98
IM-4	560.0	± 5	65	0.79	3.5	24.7	85
IM-4	620.0	± 5	65	0.79	3.3	25.9	83
IM-4	680.0	± 5	55	0.79	3.1	27.2	81
IM-4	750.0	± 5	55	0.79	2.9	28.6	79
IM-4	820.0	± 5	55	0.79	2.7	30.0	77
IM-4	910.0	± 5	55	0.79	2.5	31.5	76
IM-4	1000.0	± 5	55	0.79	2.3	33.1	74
IM-4	1100.0	± 5	30	0.25	2.1	43.5	64
IM-4	1200.0	± 5	30	0.25	2.0	45.7	63
IM-4	1300.0	± 5	30	0.25	1.9	49.0	61
IM-4	1500.0	± 5	30	0.25	1.8	52.5	59
IM-4	1600.0	± 5	30	0.25	1.7	54.0	58
IM-4	1800.0	± 5	30	0.25	1.6	56.7	56
IM-6	0.10	± 20	55	25.0	510.0	0.020	3600
IM-6	0.12	± 20	55	25.0	510.0	0.025	3300
IM-6	0.15	± 20	55	25.0	510.0	0.030	3000
IM-6	0.18	± 20	55	25.0	450.0	0.030	2900
IM-6	0.22	± 20	50	25.0	415.0	0.035	2800
IM-6	0.27	± 20	50	25.0	380.0	0.050	2400
IM-6	0.33	± 20	50	25.0	350.0	0.065	2000
IM-6	0.39	± 20	50	25.0	320.0	0.080	1800
IM-6	0.47	± 20	50	25.0	300.0	0.085	1700
IM-6	0.56	± 10	50	25.0	270.0	0.125	1450

IRON CORE

PHENOLIC CORE

Notes⁽¹⁾ Measured with full length lead⁽²⁾ Rated DC current based on maximum temperature rise as shown in table



STANDARD ELECTRICAL SPECIFICATIONS								
MODEL	IND. (μ H)	TOL. (%)	Q MIN.	TEST FREQUENCY Q (MHz)	SRF MIN. (MHz) ⁽¹⁾	DCR MAX. (Ω)	RATED DC CURRENT (mA) ⁽²⁾	
IM-6	0.68	± 10	45	25.0	250.0	0.150	1300	PHENOLIC CORE
IM-6	0.82	± 10	40	25.0	210.0	0.205	1100	
IM-6	1.0	± 10	40	25.0	200.0	0.290	930	
IM-6	1.2	± 10	30	7.9	180.0	0.400	785	
IM-6	1.5	± 10	30	7.9	170.0	0.485	700	
IM-6	1.8	± 10	30	7.9	150.0	0.740	580	
IM-6	2.2	± 10	30	7.9	140.0	0.970	505	
IM-6	2.7	± 10	30	7.9	120.0	1.20	460	
IM-6	3.3	± 10	30	7.9	70.0	0.140	990	IRON CORE
IM-6	3.9	± 10	30	7.9	65.0	0.155	870	
IM-6	4.7	± 10	30	7.9	60.0	0.210	745	
IM-6	5.6	± 10	30	7.9	50.0	0.280	645	
IM-6	6.8	± 10	30	7.9	50.0	0.375	560	
IM-6	8.2	± 10	30	7.9	48.0	0.440	540	
IM-6	10.0	± 10	30	7.9	42.0	0.605	440	
IM-6	12.0	± 10	50	2.5	36.0	1.05	370	
IM-6	15.0	± 10	55	2.5	30.0	1.20	310	
IM-6	18.0	± 10	60	2.5	30.0	1.95	255	
IM-6	22.0	± 10	60	2.5	24.0	2.20	240	
IM-6	27.0	± 10	65	2.5	22.0	2.75	205	
IM-6	33.0	± 10	75	2.5	20.0	3.5	185	
IM-6	39.0	± 10	75	2.5	18.0	3.8	176	
IM-6	47.0	± 10	75	2.5	16.0	4.0	170	
IM-6	56.0	± 10	75	2.5	15.0	4.4	164	
IM-6	68.0	± 10	75	2.5	12.0	4.7	156	
IM-6	82.0	± 10	75	2.5	10.0	5.3	143	
IM-6	100.0	± 10	65	2.5	8.0	6.0	133	
IM-6	120.0	± 10	65	0.79	6.0	5.0	124	
IM-6	150.0	± 10	65	0.79	5.4	5.8	118	
IM-6	180.0	± 10	65	0.79	5.0	6.6	114	
IM-6	220.0	± 10	65	0.79	4.7	7.4	112	
IM-6	270.0	± 5	65	0.79	5.6	8.2	110	
IM-6	300.0	± 5	65	0.79	5.3	8.7	107	
IM-6	330.0	± 5	65	0.79	5.0	9.1	105	
IM-6	360.0	± 5	65	0.79	4.7	9.6	102	
IM-6	390.0	± 5	65	0.79	4.5	10.0	100	
IM-6	430.0	± 5	65	0.79	4.3	10.6	97	
IM-6	470.0	± 5	65	0.79	4.0	11.1	95	
IM-6	510.0	± 5	65	0.79	3.8	11.6	93	
IM-6	560.0	± 5	65	0.79	3.6	12.3	91	
IM-6	620.0	± 5	60	0.79	3.5	13.0	88	
IM-6	680.0	± 5	60	0.79	3.4	13.7	85	
IM-6	750.0	± 5	60	0.79	3.3	14.4	83	
IM-6	820.0	± 5	60	0.79	3.1	15.1	81	
IM-6	910.0	± 5	60	0.79	2.9	15.8	79	
IM-6	1000.0	± 5	60	0.79	2.8	16.5	78	
IM-8	1100.0	± 5	60	0.25	2.8	21	78	IRON CORE
IM-8	1200.0	± 5	60	0.25	2.7	22	76	
IM-8	1300.0	± 5	60	0.25	2.6	23	75	
IM-8	1500.0	± 5	65	0.25	2.4	25	72	
IM-8	1600.0	± 5	65	0.25	2.3	26	70	
IM-8	1800.0	± 5	65	0.25	2.2	28	68	
IM-8	2000.0	± 5	65	0.25	2.1	29	67	

Notes⁽¹⁾ Measured with full length lead⁽²⁾ Rated DC current based on maximum temperature rise as shown in table

**STANDARD ELECTRICAL SPECIFICATIONS**

MODEL	IND. (μ H)	TOL. (%)	Q MIN.	TEST FREQUENCY Q (MHz)	SRF MIN. (MHz) ⁽¹⁾	DCR MAX. (Ω)	RATED DC CURRENT (mA) ⁽²⁾	
IM-8	2200.0	± 5	70	0.25	2.0	30	66	IRON CORE
IM-8	2400.0	± 5	70	0.25	1.9	31	64	
IM-8	2700.0	± 5	70	0.25	1.8	33	62	
IM-8	3000.0	± 5	70	0.25	1.7	35	61	
IM-8	3300.0	± 5	70	0.25	1.6	38	58	
IM-8	3600.0	± 5	70	0.25	1.5	40	57	
IM-9	68.0	± 10	70	2.5	13.0	3.3	168	IRON CORE
IM-9	82.0	± 10	65	2.5	11.7	3.5	162	
IM-9	100.0	± 10	65	2.5	10.7	3.8	155	
IM-9	120.0	± 10	75	0.79	9.3	4.7	142	
IM-9	150.0	± 10	75	0.79	8.3	5.3	132	
IM-10	3900.0	± 5	80	0.25	1.45	44	61	IRON CORE
IM-10	4300.0	± 5	80	0.25	1.40	46	59	
IM-10	4700.0	± 5	80	0.25	1.35	48	58	
IM-10	5000.0	± 5	80	0.25	1.30	50	57	
IM-10	5600.0	± 5	80	0.25	1.25	53	56	
IM-10	6200.0	± 5	80	0.25	1.20	56	54	
IM-10	6800.0	± 5	80	0.25	1.15	59	52	
IM-10	7500.0	± 5	80	0.25	1.10	62	51	
IM-10	8200.0	± 5	80	0.25	1.05	65	50	
IM-10	9100.0	± 5	80	0.25	1.00	68	49	
IM-10	10 000.0	± 5	80	0.25	0.95	72	47	

Notes⁽¹⁾ Measured with full length lead⁽²⁾ Rated DC current based on maximum temperature rise as shown in table**MAXIMUM TEMPERATURE RISE**

		OPERATING TEMPERATURE RANGE
IM-1	0.10 μ H to .47 μ H = 35 °C at + 90 °C ambient	-55 °C to +125 °C
	0.56 μ H to 1000 μ H = 15 °C at + 90 °C ambient	-55 °C to +105 °C
IM-2	0.027 μ H to 1.0 μ H = 35 °C at + 90 °C ambient	-55 °C to +125 °C
	1.2 μ H to 27 μ H = 15 °C at + 90 °C ambient	-55 °C to +105 °C
	33 μ H to 1000 μ H = 15 °C at + 90 °C ambient	-55 °C to +105 °C
IM-4	0.15 μ H to 4.7 μ H = 35 °C at + 90 °C ambient	-55 °C to +125 °C
	5.6 μ H to 33 μ H = 15 °C at + 90 °C ambient	-55 °C to +105 °C
	36 μ H to 240 μ H = 15 °C at + 90 °C ambient	-55 °C to +105 °C
	270 μ H to 1800 μ H = 35 °C at + 90 °C ambient	-55 °C to +125 °C
IM-6	0.1 μ H to 2.7 μ H = 35 °C at + 90 °C ambient	-55 °C to +125 °C
	3.3 μ H to 1000 μ H = 15 °C at + 90 °C ambient	-55 °C to +105 °C
IM-8, IM-9, IM-10	= 15 °C at + 90 °C ambient	-55 °C to +105 °C

ORDERING INFORMATION

IM-2 MODEL	10 μ H INDUCTANCE VALUE	± 10 % INDUCTANCE TOLERANCE	ER PACKAGE CODE	e2 JEDEC® LEAD (Pb)-FREE STANDARD
---------------	-----------------------------------	---------------------------------------	-----------------------	---

GLOBAL PART NUMBER

I	M	0	2	E	R	1	0	0	K
MODEL				PACKAGE CODE		INDUCTANCE VALUE			INDUCTANCE TOLERANCE



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.