Inductors, Military, MIL-PRF-15305 Qualified, Type LT, Molded, Axial Leaded

FEATURES

- Wide inductance range in small package
- Flame retardant coating
- Precision performance, excellent reliability, sturdy construction
- Epoxy molded construction provides superior moisture protection

ELECTRICAL SPECIFICATIONS

Inductance Tolerance: ± 10 %, standard

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

Dielectric Strength: Per MIL-STD-202, method 301: 1000 V_{AC}

MECHANICAL SPECIFICATIONS

Terminal Strength: Per MIL-STD-202, method 211, test condition A: 5 pounds pull and twist

Weight: MS75083 = 0.30 g maximum
MS75084 = 0.30 g maximum
MS75085 = 0.30 g maximum
MS18130 = 0.65 g maximum
MS14046 = 0.65 g maximum
MS90538 = 0.65 g maximum
MS75101 = 0.95 g maximum

MATERIAL SPECIFICATIONS

Encapsulant: Epoxy

Standard Terminal: MS75083, MS75084, MS75085, 24 AWG; MS18130, MS14046, MS90538, MS75101, 22 AWG; tinned copper

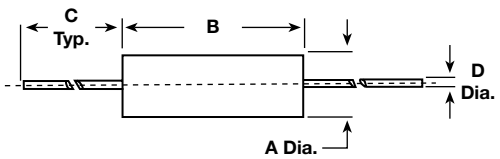
TEST EQUIPMENT (1)

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

Note
(1) Test procedures per MIL-PRF-15305

INDUCTANCE RANGE AND MILITARY STANDARD				
MILITARY STANDARD	INDUCTANCE RANGE MIL. RANGE (µH) (in bold face)		CLASSIFICATION	
	FROM	TO	GRADE	CLASS
MS75083	**0.10**	**1**	1	B
MS75084	**1.2**	**27**	1	A
MS75085	**33**	**1000**	1	A
MS18130	**0.15**	**4.7**	1	B
MS14046	**5.6**	**33**	1	A
MS90538	**36**	**240**	1	A
MS75101	**3.3**	**27**	1	A

DIMENSIONS in inches [millimeters]



MODEL		A (DIA.)	B	C (TYP.)	D (DIA.)
MS75083	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]
MS75084	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]
MS75085	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]
MS83130	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]
MS14046	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]
MS90538	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]
MS75101	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]

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

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	IND. (µH)	TOL. (%)	MILITARY STANDARD	MILITARY TYPE	Q MIN.	TEST FREQ. L AND Q (MHz)	SRF MIN. (MHz) (1)	DCR MAX. (Ω)	RATED DC CURRENT (mA) (2)	
MS75083				LT4K						PHENOLIC CORE
	0.10	± 10	- 1	339	40	25.0	680.0	0.08	1350	
	0.12	± 10	- 2	340	40	25.0	640.0	0.09	1270	
	0.15	± 10	- 3	341	38	25.0	600.0	0.10	1200	
	0.18	± 10	- 4	342	35	25.0	550.0	0.12	1105	
	0.22	± 10	- 5	343	33	25.0	510.0	0.14	1025	
	0.27	± 10	- 6	344	33	25.0	430.0	0.16	960	
	0.33	± 10	- 7	345	30	25.0	410.0	0.22	815	
	0.39	± 10	- 8	346	30	25.0	365.0	0.30	700	
	0.47	± 10	- 9	347	30	25.0	330.0	0.35	650	
	0.56	± 10	- 10	348	30	25.0	300.0	0.50	545	
	0.68	± 10	- 11	349	28	25.0	275.0	0.60	495	
	0.82	± 10	- 12	350	28	25.0	250.0	0.85	415	
	1.0	± 10	- 13	351	25	25.0	230.0	1.0	385	
MS75084				LT10K						IRON CORE
	1.2	± 10	- 1	061	25	7.9	150.0	0.18	590	
	1.5	± 10	- 2	062	28	7.9	140.0	0.22	535	
	1.8	± 10	- 3	063	30	7.9	125.0	0.30	455	
	2.2	± 10	- 4	064	30	7.9	115.0	0.40	395	
	2.7	± 10	- 5	065	37	7.9	100.0	0.55	355	
	3.3	± 10	- 6	066	45	7.9	90.0	0.85	270	
	3.9	± 10	- 7	067	45	7.9	80.0	1.0	250	
	4.7	± 10	- 8	068	45	7.9	75.0	1.2	230	
	5.6	± 10	- 9	069	50	7.9	65.0	1.8	185	
	6.8	± 10	- 10	070	50	7.9	60.0	2.0	175	
	8.2	± 10	- 11	071	55	7.9	55.0	2.7	155	
	10.0	± 10	- 12	072	55	7.9	50.0	3.7	130	
	12.0	± 10	- 13	073	45	2.5	40.0	2.7	155	
	15.0	± 10	- 14	074	40	2.5	35.0	2.8	150	
	18.0	± 10	- 15	075	50	2.5	30.0	3.1	145	
	22.0	± 10	- 16	076	50	2.5	25.0	3.3	140	
	27.0	± 10	- 17	077	50	2.5	20.0	3.5	135	
MS75085				LT10K						FERRITE CORE
	33.0	± 10	- 1	078	45	2.5	24.0	3.4	130	
	39.0	± 10	- 2	079	45	2.5	22.0	3.6	125	
	47.0	± 10	- 3	080	45	2.5	20.0	4.5	110	
	56.0	± 10	- 4	081	45	2.5	18.0	5.7	100	
	68.0	± 10	- 5	082	50	2.5	15.0	6.7	92	
	82.0	± 10	- 6	083	50	2.5	14.0	7.3	88	
	100.0	± 10	- 7	084	50	2.5	13.0	8.0	84	
	120.0	± 10	- 8	085	30	0.79	12.0	13.0	66	
	150.0	± 10	- 9	086	30	0.79	11.0	15.0	61	
	180.0	± 10	- 10	087	30	0.79	10.0	17.0	57	
	220.0	± 10	- 11	088	30	0.79	9.0	21.0	52	
	270.0	± 10	- 12	089	30	0.79	8.0	25.0	47	
	330.0	± 10	- 13	090	30	0.79	7.0	28.0	45	
	390.0	± 10	- 14	091	30	0.79	6.5	35.0	40	
	470.0	± 10	- 15	092	30	0.79	6.0	42.0	36	
	560.0	± 10	- 16	093	30	0.79	5.0	46.0	35	
	680.0	± 10	- 17	094	30	0.79	4.0	60.0	30	
	820.0	± 10	- 18	095	30	0.79	3.8	65.0	29	
	1000.0	± 10	- 19	096	30	0.79	3.4	72.0	28	
MS18130				LT4K						PHENOLIC CORE
	0.15	± 20	- 1	074	50	25.0	525.0	0.03	2450	
	0.22	± 20	- 2	075	50	25.0	450.0	0.055	1810	
	0.33	± 20	- 3	076	45	25.0	360.0	0.09	1400	
	0.47	± 20	- 4	077	45	25.0	310.0	0.12	1225	
	0.56	± 10	- 5	078	50	25.0	280.0	0.135	1150	
	0.68	± 10	- 6	079	50	25.0	250.0	0.15	1100	
	0.82	± 10	- 7	080	50	25.0	220.0	0.22	900	
	1.0	± 10	- 8	081	50	25.0	200.0	0.29	785	
	1.2	± 10	- 9	082	33	7.9	180.0	0.42	650	
	1.5	± 10	- 10	083	33	7.9	160.0	0.50	600	
	1.8	± 10	- 11	084	33	7.9	150.0	0.65	525	
	2.2	± 10	- 12	085	33	7.9	135.0	0.95	435	
	2.7	± 10	- 13	086	33	7.9	120.0	1.20	385	
	3.3	± 10	- 14	087	33	7.9	110.0	2.0	300	
	3.9	± 10	- 15	088	33	7.9	100.0	2.30	280	
	4.7	± 10	- 16	089	33	7.9	90.0	2.60	260	

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	IND. (µH)	TOL. (%)	MILITARY STANDARD	MILITARY TYPE	Q MIN.	TEST FREQ. L AND Q (MHz)	SRF MIN. (MHz) (1)	DCR MAX. (Ω)	RATED DC CURRENT (mA) (2)	
				LT10K						
MS14046	5.6	± 10	-1	128	45	7.9	60.0	0.32	495	IRON CORE
	6.8	± 10	-2	129	50	7.9	55.0	0.50	395	
	8.2	± 10	-3	130	50	7.9	50.0	0.60	360	
	10.0	± 10	-4	131	55	7.9	45.0	0.90	290	
	12.0	± 10	-5	132	65	2.5	42.0	1.10	265	
	15.0	± 10	-6	133	65	2.5	40.0	1.40	240	
	18.0	± 10	-7	134	75	2.5	34.0	2.25	185	
	22.0	± 10	-8	135	75	2.5	30.0	2.50	175	
	27.0	± 10	-9	136	60	2.5	25.0	2.60	170	
	33.0	± 10	-10	137	65	2.5	19.0	3.00	165	
				LT10K						
MS90538	36.0	± 5	-1	001	60	2.5	15.5	2.50	180	IRON CORE
	39.0	± 5	-2	002	60	2.5	14.5	2.60	176	
	43.0	± 5	-3	003	60	2.5	13.7	2.70	172	
	47.0	± 5	-4	004	55	2.5	13.0	2.75	170	
	51.0	± 5	-5	005	55	2.5	12.7	2.85	167	
	56.0	± 5	-6	006	55	2.5	12.0	3.00	164	
	62.0	± 5	-7	007	55	2.5	11.5	3.15	160	
	68.0	± 5	-8	008	55	2.5	11.0	3.30	156	
	75.0	± 5	-9	009	55	2.5	10.5	3.70	147	
	82.0	± 5	-10	010	50	2.5	10.3	3.90	143	
	91.0	± 5	-11	011	50	2.5	10.0	4.30	136	
	100.0	± 5	-12	012	50	2.5	9.5	4.50	133	
	110.0	± 5	-13	013	60	0.79	8.9	4.90	128	
	120.0	± 5	-14	014	65	0.79	8.7	5.20	124	
	130.0	± 5	-15	015	65	0.79	8.5	5.45	121	
	150.0	± 5	-16	016	65	0.79	8.0	6.05	114	
	160.0	± 5	-17	017	65	0.79	7.5	6.40	111	
	180.0	± 5	-18	018	65	0.79	7.0	6.75	108	
	200.0	± 5	-19	019	65	0.79	6.5	7.10	106	
	220.0	± 5	-20	020	65	0.79	6.2	7.45	103	
	240.0	± 5	-21	021	65	0.79	5.9	7.80	101	
				LT10K		LT10K				
MS75101	3.3	± 10	-01	169	30	7.9	70.0	0.140	990	IRON CORE
	3.9	± 10	-02	170	30	7.9	65.0	0.155	870	
	4.7	± 10	-03	171	30	7.9	60.0	0.210	745	
	5.6	± 10	-04	172	30	7.9	50.0	0.280	645	
	6.8	± 10	-05	173	30	7.9	50.0	0.375	560	
	8.2	± 10	-06	174	30	7.9	48.0	0.440	540	
	10.0	± 10	-07	175	30	7.9	42.0	0.605	440	
	12.0	± 10	-08	176	50	2.5	36.0	1.05	370	
	15.0	± 10	-09	177	55	2.5	30.0	1.20	310	
	18.0	± 10	-10	178	60	2.5	30.0	1.95	255	
	22.0	± 10	-11	179	60	2.5	24.0	2.20	240	
	27.0	± 10	-12	180	65	2.5	22.0	2.75	205	

Notes

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

MAXIMUM TEMPERATURE RISE

		OPERATING TEMPERATURE RANGE
MS75083	0.10 µH to 1.0 µH = 35 °C at + 90 °C ambient	- 55 °C to + 125 °C
MS75084	1.2 µH to 27 µH = 15 °C at + 90 °C ambient	- 55 °C to + 105 °C
MS75085	33 µH to 1000 µH = 15 °C at + 90 °C ambient	- 55 °C to + 105 °C
MS18130	0.15 µH to 4.7 µH = 35 °C at + 90 °C ambient	- 55 °C to + 125 °C
MS14046	5.6 µH to 33 µH = 15 °C at + 90 °C ambient	- 55 °C to + 105 °C
MS90538	36 µH to 240 µH = 15 °C at + 90 °C ambient	- 55 °C to + 105 °C
MS75101	3.3 µH to 27 µH = 15 °C at + 90 °C ambient	- 55 °C to + 105 °C

DESCRIPTION - MILITARY PART NUMBER

MS75084	-12		LT	10	K	072
MILITARY STANDARD	INDUCTANCE VALUE	OR	TYPE	GRADE AND CLASS	FAMILY	ID NUMBER

GLOBAL PART NUMBER

M	S	7	5	0	4	8	-	1	2	R	U
PRODUCT FAMILY							INDUCTANCE VALUE			PACKAGE CODE	

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 and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. 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.