



**THE DATASHEET OF  
MS90538-5RU**



## 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

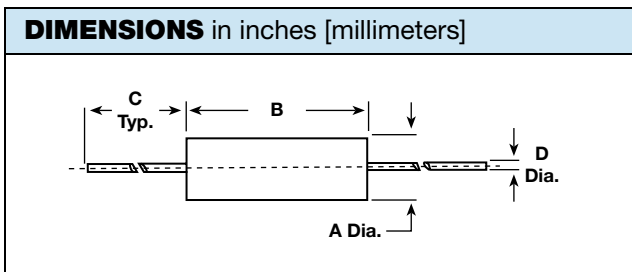
**Dielectric Strength:** Per MIL-STD-202, method 301: 1000 V<sub>AC</sub>

### 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

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



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]

### 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

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

# MS7508x, MS18130, MS14046, MS90538, MS75101



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

STANDARD ELECTRICAL SPECIFICATIONS										
MODEL	IND. (μH)	TOL. (%)	MILITARY STANDARD	MILITARY TYPE	Q MIN.	TEST FREQ. L AND Q (MHz)	SRF MIN. (MHz) <sup>(1)</sup>	DCR MAX. (Ω)	RATED DC CURRENT (mA) <sup>(2)</sup>	
MS75083	0.10	± 10	- 1	LT4K 339	40	25.0	680.0	0.08	1350	PHENOLIC CORE
	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	1.2	± 10	- 1	LT10K 061	25	7.9	150.0	0.18	
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	33.0	± 10	- 1	LT10K 078	45	2.5	24.0	3.4	130	FERRITE CORE
	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	0.15	± 20	- 1	LT4K 074	50	25.0	525.0	0.03	2450	PHENOLIC CORE
	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	



# MS7508x, MS18130, MS14046, MS90538, MS75101

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

STANDARD ELECTRICAL SPECIFICATIONS										
MODEL	IND. (μH)	TOL. (%)	MILITARY STANDARD	MILITARY TYPE	Q MIN.	TEST FREQ. L AND Q (MHz)	SRF MIN. (MHz) <sup>(1)</sup>	DCR MAX. (Ω)	RATED DC CURRENT (mA) <sup>(2)</sup>	
MS14046	5.6	± 10	-1	LT10K 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	
	MS90538	36.0	± 5	-1	LT10K 001	60	2.5	15.5	2.50	
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	
MS75101	3.3	± 10	-01	LT10K 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

# MS7508x, MS18130, MS14046, MS90538, MS75101



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

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. 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.**

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View MS90538-5RU on WIN SOURCE](#)

 [Vishay Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management