

Inductors

Commercial, Molded, Shielded, Miniature



FEATURES

- Flame retardant coating
- Electromagnetic shield
- Small package for a shielded inductor
- Epoxy molded construction provides superior moisture protection
- Precision performance, excellent reliability, sturdy construction



RoHS
COMPLIANT

ELECTRICAL SPECIFICATIONS

Inductance Tolerance: ± 10 % standard. ± 5 % available
Insulation Resistance: 1000 Megohm minimum per MIL-STD-202, Method 302, Test Condition B

Dielectric Withstanding Voltage: 200 VAC per MIL-STD-202, Method 301 (sea level).

Percent Coupling: 3 % maximum per MIL-PRF-15305
Operating Temperature Range: - 55 °C to + 105 °C

STANDARD ELECTRICAL SPECIFICATIONS								
IND. (μH)	TOL.	Q MIN.	TEST FREQ. L & Q (MHz)	SELF- [*] RESONANT FREQ. MIN. (MHz)	DCR MAX. (Ohms)	RATED ^{**} DC CURRENT (mA)	INCREMENTAL ^{***} CURRENT	
0.10	± 10 %	54	25.0	490.0	0.10	670	-	IRON CORE
0.12	± 10 %	52	25.0	430.0	0.11	635	-	
0.15	± 10 %	50	25.0	415.0	0.12	610	-	
0.18	± 10 %	49	25.0	375.0	0.13	585	-	
0.22	± 10 %	47	25.0	330.0	0.15	545	-	
0.27	± 10 %	46	25.0	300.0	0.16	530	-	
0.33	± 10 %	44	25.0	260.0	0.18	495	-	
0.39	± 10 %	42	25.0	230.0	0.19	485	-	
0.47	± 10 %	41	25.0	220.0	0.21	460	-	
0.56	± 10 %	41	25.0	210.0	0.23	440	-	
0.68	± 10 %	39	25.0	180.0	0.24	430	-	
0.82	± 10 %	38	25.0	165.0	0.27	405	-	
1.0	± 10 %	37	25.0	150.0	0.30	385	-	
1.2	± 10 %	40	7.9	130.0	0.73	247	-	IRON CORE
1.5	± 10 %	41	7.9	115.0	0.86	228	-	
1.8	± 10 %	43	7.9	105.0	0.95	217	-	
2.2	± 10 %	45	7.9	95.0	1.1	202	-	
2.7	± 10 %	48	7.9	90.0	1.2	193	-	
3.3	± 10 %	49	7.9	80.0	1.3	185	-	
3.9	± 10 %	50	7.9	75.0	1.5	173	-	
4.7	± 10 %	53	7.9	70.0	2.4	136	-	
5.6	± 10 %	54	7.9	60.0	2.9	124	-	
6.8	± 10 %	55	7.9	55.0	3.2	118	-	
8.2	± 10 %	55	7.9	53.0	3.6	111	-	
10.0	± 10 %	57	7.9	50.0	4.0	106	-	
12.0	± 10 %	36	2.5	35.0	3.0	122	-	
15.0	± 10 %	38	2.5	30.0	3.4	115	-	
18.0	± 10 %	40	2.5	26.0	3.8	108	-	
22.0	± 10 %	40	2.5	24.0	4.9	96	-	
27.0	± 10 %	40	2.5	21.0	5.8	88	-	
33.0	± 10 %	41	2.5	20.0	6.5	83	-	
39.0	± 10 %	42	2.5	19.0	7.9	75	-	
47.0	± 10 %	44	2.5	16.0	9.3	69	-	
56.0	± 10 %	44	2.5	15.0	11.0	64	-	
68.0	± 10 %	45	2.5	13.0	12.0	61	-	
82.0	± 10 %	45	2.5	11.0	13.0	59	-	
100.0	± 10 %	40	2.5	10.5	16.8	51	-	
120.0	± 10 %	31	0.79	13.0	5.8	88	27	FERRITE CORE
150.0	± 10 %	33	0.79	12.0	7.9	75	24	
180.0	± 10 %	33	0.79	11.0	9.4	69	22	
220.0	± 10 %	35	0.79	10.0	11.0	64	20	
270.0	± 10 %	37	0.79	9.0	12.0	61	18	
330.0	± 10 %	40	0.79	8.0	16.0	53	16	
390.0	± 10 %	38	0.79	7.8	21.0	46	14	
470.0	± 10 %	36	0.79	7.5	24.0	43	13	
560.0	± 10 %	36	0.79	7.0	28.0	40	12	

* Measured with full length lead. ** **Rated DC Current:** Based on the maximum temperature rise not to exceed 15 °C at + 90 °C ambient.
 *** **Incremental Current:** The minimum typical current at which the inductance will be decreased by 5 % from its initial zero DC value.



MECHANICAL SPECIFICATIONS

Terminal Strength: 3 pounds pull per MIL-STD-202, Method 211, Test Condition A except 180° rotation for a total of 540 °C

Weight: IMS-2 = 0.30 grams maximum

MATERIAL SPECIFICATIONS

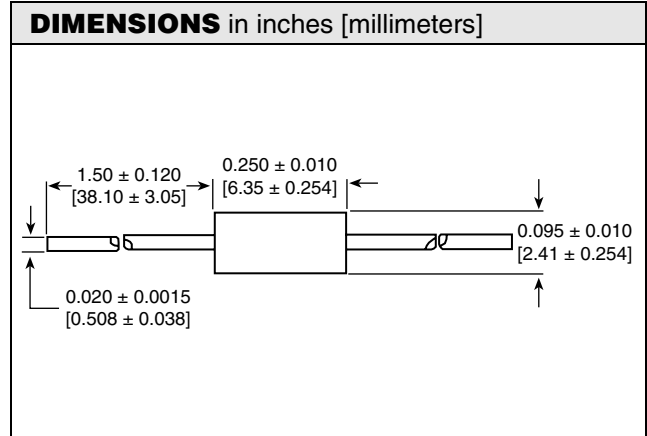
Encapsulant: Epoxy

Standard Terminal: #24 AWG tinned copper

TEST EQUIPMENT*

- H/P 4342A Q-Meter
- Measurements Corporation Megacycle Meter, Model 59
- Wheatstone Bridge

* Test procedures per MIL-PRF-15305



INDUCTANCE RANGE AND MILITARY STANDARD			
INDUCTANCE RANGE		MATERIAL	
FROM	TO	CORE	SHIELD
0.10 μH	100 μH	Powdered Iron	Powdered Iron
120 μH	560 μH	Ferrite	Ferrite

ENVIRONMENTAL PERFORMANCE		
TEST	CONDITIONS	SPECIFICATIONS
Barometric Pressure	Test Condition C	MIL-STD-202, Method 105
Thermal Shock	Test Condition 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	Test Condition A	MIL-STD-202, Method 210
Resistance to Solvents	-	MIL-STD-202, Method 215

ORDERING INFORMATION				
IMS-2	10 μH	± 10 %	ER	e2
MODEL	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE	JEDEC LEAD (Pb)-FREE STANDARD

GLOBAL PART NUMBER INFORMATION			
I M S 0 2	E R	1 0 0	K
MODEL	PACKING CODE	INDUCTANCE VALUE	TOL.



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Leaded Magnetics Packaging Methods

TAPE AND REEL in inches [millimeters]													
Reel Pack													
MODEL	PREVIOUS CODE*	GLOBAL CODE LEAD BEARING	GLOBAL CODE LEAD (Pb)-FREE	REEL SIZE	CARRIER TAPE WIDTH (W)	COMPONENT PITCH (P)	UNITS/ REEL	PREVIOUS CODE*	GLOBAL CODE LEAD BEARING	GLOBAL CODE LEAD (Pb)-FREE	UNITS/ REEL		
IM-1	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	4000	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400						
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000						
IM-2	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	4000	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400						
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000						
IM-4	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	2500	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400						
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000						
IM-6	R36	RU	ER	12	2.06 [52.39]	0.4 [10.16]	2000	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.06 [52.39]	0.4 [10.16]	400						
IM-8	RB5	RA	EZ	12	2.06 [52.39]	0.4 [10.16]	1000	B08	BH	EB	100		
	RJ2	SJ	ET	7.5	2.06 [52.39]	0.4 [10.16]	400						
IM-9	RB5	RA	EZ	12	2.06 [52.39]	0.4 [10.16]	800	B08	BH	EB	80		
	RJ2	SJ	ET	7.5	2.06 [52.39]	0.4 [10.16]	400						
	RJ5	SS	EW	12	2.06 [52.39]	0.4 [10.16]	1000						
IM-10	RB5	RA	EZ	12	2.06 [52.39]	0.4 [10.16]	800	B08	BH	EB	70		
	RJ2	SJ	ET	7.5	2.06 [52.39]	0.4 [10.16]	400						
IM-6-38	RB5	RA	EZ	12	2.06 [52.39]	0.4 [10.16]	1000	B08	BH	EB	200		
	RJ2	SJ	ET	7.5	2.06 [52.39]	0.4 [10.16]	400						
IM-6RFCS-40	R36	RU	ER	12	2.06 [52.39]	0.4 [10.16]	1000	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.06 [52.39]	0.4 [10.16]	400						
IM-10-22	RB5	RR	EZ	12	2.06 [52.39]	0.4 [10.16]	500	B08	BH	EB	100		
IM-10-28	R07	NA	EY	12	2.88 [73.15]	0.4 [10.16]	250	B08	BH	EB	70		
IM-10-31	-	-	-	-	-	-	-	B08	BH	EB	50		
IM-10-37	RB5	RA	EZ	12	2.06 [52.39]	0.4 [10.16]	500	B08	BH	EB	40		
IM-10-46	-	-	-	-	-	-	-	B08	BH	EB	25		
IM-10RFCL-12	RB5	RA	EZ	12	2.19 [55.63]	0.4 [10.16]	250	B08	BH	EB	50		
IMS-2WWD-40	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	4000	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400						
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000						
IMS-2SWWD-3	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	4000	B08	BH	EB	100		
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400						
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000						
IMS-2	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	4000	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400						
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000						
IMS-5	R36	RU	ER	12	2.50 [63.50]	0.2 [5.08]	2500	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.50 [63.50]	0.2 [5.08]	400						
	RJ4	ST	EV	7.5	2.50 [63.50]	0.2 [5.08]	1000						
IMS-5WD-40	R36	RU	ER	12	2.50 [63.50]	0.2 [5.08]	2500	B08	BH	EB	200		
	RJ1	SH	ES	7.5	2.50 [63.50]	0.2 [5.08]	400						
	RJ4	ST	EV	7.5	2.50 [63.50]	0.2 [5.08]	1000						

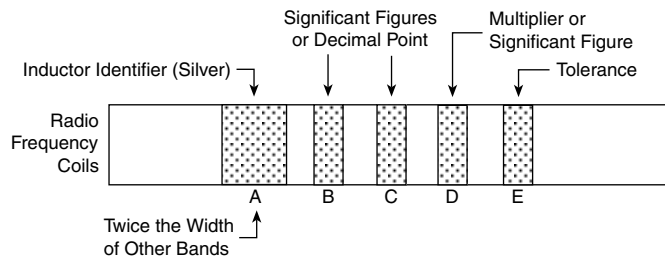


TAPE AND REEL in inches [millimeters]											
MODEL	PREVIOUS CODE*	GLOBAL CODE LEAD BEARING	GLOBAL CODE LEAD (Pb)-FREE	REEL SIZE	CARRIER TAPE WIDTH (W)	COMPONENT PITCH (P)	UNITS/ REEL	PREVIOUS CODE*	GLOBAL CODE LEAD BEARING	GLOBAL CODE LEAD (Pb)-FREE	UNITS/ REEL
IMS-5SWD-65	R36	RU	ER	12	2.50 [63.50]	0.2 [5.08]	2500	B08	BH	EB	200
	RJ1	SH	ES	7.5	2.50 [63.50]	0.2 [5.08]	400				
	RJ4	ST	EV	7.5	2.50 [63.50]	0.2 [5.08]	1000				
IR-2	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	4000	B08	BH	EB	200
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400				
	RJ4	ST	EV	12	2.06 [52.39]	0.2 [5.08]	1000				
IR-4	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	2500	B08	BH	EB	200
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400				
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000				
IRF-1	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	4000	B08	BH	EB	200
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400				
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000				
IRF-3	R36	RU	ER	12	2.06 [52.39]	0.2 [5.08]	2500	B08	BH	EB	200
	RJ1	SH	ES	7.5	2.06 [52.39]	0.2 [5.08]	400				
	RJ4	ST	EV	7.5	2.06 [52.39]	0.2 [5.08]	1000				
IRF-24	-	-	ER	12	2.06 [52.39]	0.2 [5.08]	5000	-	-	-	-
IRF-36	-	-	ER	12	2.06 [52.39]	0.2 [5.08]	5000	-	-	-	-
IRF-46	-	-	ER	12	2.06 [52.39]	0.2 [5.08]	3000	-	-	-	-
IHD-1	R16	RR	ER	12	2.06 [52.39]	0.4 [10.16]	800	B08	BH	EB	50
IHD-3	RA3	AC	ER	12	2.87 [72.90]	0.6 [15.24]	200	B08	BH	EB	190
IHD-2	-	-	-	-	-	-	-	-	-	EB	150
IHD-4	-	-	-	-	-	-	-	-	-	EB	60
IHA-101	-	-	-	-	-	-	-	B01	BA	EB	210
IHA-102	-	-	-	-	-	-	-	B01	BA	EB	210
IHA-103	-	-	-	-	-	-	-	B01	BA	EB	200
IHA-104	-	-	-	-	-	-	-	B01	BA	EB	160
IHA-105	-	-	-	-	-	-	-	B01	BA	EB	160
IHA-201	-	-	-	-	-	-	-	B01	BA	EB	200
IHA-202	-	-	-	-	-	-	-	B01	BA	EB	180
IHA-203	-	-	-	-	-	-	-	B01	BA	EB	160
IHA-204	-	-	-	-	-	-	-	B01	BA	EB	120
IHA-205	-	-	-	-	-	-	-	B01	BA	EB	75
IHA-301	-	-	-	-	-	-	-	B01	BA	EB	210
IHA-302	-	-	-	-	-	-	-	B01	BA	EB	240
IHA-303	-	-	-	-	-	-	-	B01	BA	EB	160
IHA-304	-	-	-	-	-	-	-	B01	BA	EB	160
IHA-305	-	-	-	-	-	-	-	B01	BA	EB	160
IHA-501	-	-	-	-	-	-	-	B01	BA	EB	210
IHA-502	-	-	-	-	-	-	-	B01	BA	EB	200
IHA-503	-	-	-	-	-	-	-	B01	BA	EB	75
IHA-504	-	-	-	-	-	-	-	B01	BA	EB	75
IHA-505	-	-	-	-	-	-	-	B01	BA	EB	75
IH-3 5, 27, 50 & 100 μ H	-	-	-	-	-	-	-	B15	BQ	EB	150
IH-3 10 μ H	-	-	-	-	-	-	-	B15	BQ	EB	200
IH-3 50 μ H	-	-	-	-	-	-	-	B15	BQ	EB	50
IH-3 250 μ H	-	-	-	-	-	-	-	B15	BQ	EB	75
IH-4 0 μ H	-	-	-	-	-	-	-	B15	BQ	EB	160
IH-5 5 & 10 μ H	-	-	-	-	-	-	-	B15	BQ	EB	200
IH-5 27 μ H	-	-	-	-	-	-	-	B15	BQ	EB	150
IH-5 50, 68, 100 & 150 μ H	-	-	-	-	-	-	-	B15	BQ	EB	50
IH-10 5 & 10 μ H	-	-	-	-	-	-	-	B15	BQ	EB	150

TAPE AND REEL in inches [millimeters]											
MODEL	PREVIOUS CODE*	GLOBAL CODE LEAD BEARING	GLOBAL CODE LEAD (Pb)-FREE	REEL SIZE	CARRIER TAPE WIDTH (W)	COMPONENT PITCH (P)	UNITS/ REEL	PREVIOUS CODE*	GLOBAL CODE LEAD BEARING	GLOBAL CODE LEAD (Pb)-FREE	UNITS/ REEL
IH-10 27 μ H	-	-		-	-	-	-	B15	BQ	EB	50
IH-10 50, 68 & 100 μ H	-	-		-	-	-	-	B15	BQ	EB	75
IH-15 5 μ H	-	-		-	-	-	-	B15	BQ	EB	50
IH-15 10 & 27 μ H	-	-		-	-	-	-	B15	BQ	EB	75
IH-15 50 μ H	-	-		-	-	-	-	B15	BQ	EB	60
IHM-2	-	-		-	-	-	-	P12	PM	EB	20
IHB-1	-	-		-	-	-	-	B40	BV	EB	48
IHB-2	-	-		-	-	-	-	B40	BV	EB	30
IHB-3	-	-		-	-	-	-	B40	BV	EB	20
IHB-4	-	-		-	-	-	-	B40	BV	EB	16
IHB-5	-	-		-	-	-	-	B40	BV	EB	16
IHB-6	-	-		-	-	-	-	B40	BV	EB	16
IHV-15-500	-	-		-	-	-	-	B48	BZ	EB	10
IHV-20-200	-	-		-	-	-	-	B48	BZ	EB	10
IHV-28-60	-	-		-	-	-	-	B48	BZ	EB	14
IHV-30-150	-	-		-	-	-	-	B48	BZ	EB	5
IHV-40-39	-	-		-	-	-	-	B48	BZ	EB	10
IHV-45-92	-	-		-	-	-	-	B48	BZ	EB	5
IHV-50-50	-	-		-	-	-	-	B48	BZ	EB	5
IHV-60-24	-	-		-	-	-	-	B48	BZ	EB	5
PC	-	-		-	-	-	-	F09	FJ	EB	40
VIV	-	-		-	-	-	-	F09	FJ	EB	40
VIH	-	-		-	-	-	-	F09	FJ	EB	40
WVL	-	-		-	-	-	-	F09	FJ	EB	40
TJ3-1U	-	-		-	-	-	-	T07	TG	EB	100
TJ3-2U	-	-		-	-	-	-	T07	TG	EB	100
TJ4-1U	-	-		-	-	-	-	T07	TG	EB	100
TJ4-2U	-	-		-	-	-	-	T07	TG	EB	30
TJ5-1U	-	-		-	-	-	-	T07	TG	EB	100
TJ5-2U	-	-		-	-	-	-	T07	TG	EB	30
TJ6-1U	-	-		-	-	-	-	T07	TG	EB	20
TJ6-2U	-	-		-	-	-	-	T07	TG	EB	36
TJ7-1U	-	-		-	-	-	-	T07	TG	EB	20
TJ7-2U	-	-		-	-	-	-	T07	TG	EB	12
TJ8-1U	-	-		-	-	-	-	T07	TG	EB	15
TJ8-2U	-	-		-	-	-	-	T07	TG	EB	8
TJ9-1U	-	-		-	-	-	-	T07	TG	EB	9
TJ9-2U	-	-		-	-	-	-	T07	TG	EB	3
TE-3	-	-		-	-	-	-	P09	PJ	EB	5
TE-4	-	-		-	-	-	-	P09	PJ	EB	2
TE-5	-	-		-	-	-	-	P09	PJ	EB	2
TD-3	-	-		-	-	-	-	P09	PJ	EB	5
TD-4	-	-		-	-	-	-	P09	PJ	EB	2
TD-5	-	-		-	-	-	-	P09	PJ	EB	2
TC	-	-		-	-	-	-	B09	BJ	EB	36
TA	-	-		-	-	-	-	B42	BX	EB	45
PT-10	-	-		-	-	-	-	C03	CC	EB	32
PT-20	-	-		-	-	-	-	B09	BJ	EB	32
PT-50	-	-		-	-	-	-	B09	BJ	EB	45
PT-100	-	-		-	-	-	-	B09	BJ	EB	50
PT-200	-	-		-	-	-	-	B09	BJ	EB	50
PL-11-xx	-	-		-	-	-	-	C03	CC	EB	10
PL-22-xx	-	-		-	-	-	-	C03	CC	EB	10

MILITARY PART ORDERING EXAMPLES	
TRANSFORMERS AND INDUCTORS	
MIL-T-27E (Basic [TF]) (Established Reliability - None) $\frac{M27}{1} \frac{215}{2} \frac{05}{3} =$ Dale TE- 1.0 2 % Type 3Q0TR mH	1. Military Specification 2. Specification Sheet Number 3. Specification Sheet Dash Number Indicating Value and Electrical Ratings
MIL-C-15305E (Basic [LT]) (Established Reliability MIL-C-39010) $\frac{LT}{1} \frac{4}{2} \frac{K}{3} =$ Dale IM-2 (0.10 μ H to 1.00 μ H) 10 % Type	NOTE: Parts will be color banded. Value per Military Standard dash number. 1. Style 2. Grade and Class 3. Family K = Coil, Radio Frequency, Fixed

MILITARY COLOR CODES - RF COILS			
COLOR	BAND B & C SIGNIFICANT FIGURES or DECIMAL POINT	BAND D MULTIPLIER* or SIGNIFICANT FIGURE	BAND E INDUCTANCE TOLERANCE
Black	0	1	-
Brown	1	10	± 1 %
Red	2	100	± 2 %
Orange	3	1000	± 3 %
Yellow	4	10 000	± 4 %
Green	5	-	-
Blue	6	-	-
Violet	7	-	-
Gray	8	-	-
White	9	-	-
None**	-	-	± 20 %
Silver	-	-	± 10 %
Gold	Decimal Point	-	± 5 %



Band "A" is twice the width of the other bands and is silver in color to identify part as an inductor. ***
For Inductance Values Less Than 10 either Band "B" or Band "C" will be gold and will represent the decimal point. The other two bands ("B" and "D" or "C" and "D") will represent significant figures.
For Inductance Values of 10 or More Band "B" and Band "C" represent significant figures and Band "D" is the Multiplier.
For small units, dots may be used in place of bands.

* The multiplier is the factor by which two significant figures are multiplied to yield the nominal inductance value.
 ** Indicates body color.
 *** Coated inductors are marked with four color bands, the first being a double wide significant figure or decimal point in lieu of the double wide silver inductor identifier.