

## Type 3630 Series

### Key Features

High current capability  
ferrite core

Available in E12 values

Up to 8.2A

Down to 2.7mm height

Available in 6 different styles

High reliability

Taped and Reeled



The 3630 series is a shielded power inductor offered in six convenient sizes. Careful selection of materials ensure that these Tyco Sigma inductors offer high reliability, long life and repeatability but are very cost competitive. The low profile makes this product very effective in space – conscious applications and designs. With its low resistance and high energy storage capabilities the products are highly suitable for use in DC-DC converter applications, step up or step down converters and flash memory programmers.

### Characteristics Electrical 3630A series

Inductance Code	Inductance (μH)	Tolerance	Q Ref	Test Freq (Hz)		S.R.F (MHz)/Nom	RDC (Ω)Max	IDC (A)Max
				L	Q			
5R0	5.0	±20%	20	1K	7.960M	45.0	0.080	1.70
7R5	7.5	±20%	20	1K	7.960M	40.0	0.100	1.40
100	10.0	±20%	38	1K	2.520M	32.0	0.120	1.20
120	12.0	±20%	38	1K	2.520M	28.0	0.150	1.10
150	15.0	±20%	38	1K	2.520M	25.0	0.170	1.00
180	18.0	±15%	35	1K	2.520M	23.0	0.190	0.90
220	22.0	±15%	30	1K	2.520M	22.0	0.250	0.80
270	27.0	±15%	28	1K	2.520M	18.0	0.270	0.70
330	33.0	±15%	26	1K	2.520M	17.0	0.300	0.65
390	39.0	±15%	26	1K	2.520M	16.0	0.380	0.60
470	47.0	±10%	24	1K	2.520M	14.0	0.460	0.55
560	56.0	±10%	24	1K	2.520M	12.0	0.600	0.50
680	68.0	±10%	22	1K	2.520M	11.0	0.700	0.45
820	82.0	±10%	20	1K	2.520M	10.0	0.800	0.40
101	100.0	±10%	50	1K	0.796M	9.0	0.950	0.37
121	120.0	±10%	50	1K	0.796M	8.5	1.000	0.35
151	150.0	±10%	53	1K	0.796M	7.0	1.300	0.30
181	180.0	±10%	53	1K	0.796M	6.0	1.450	0.28
221	220.0	±10%	55	1K	0.796M	5.5	1.900	0.24
271	270.0	±10%	50	1K	0.796M	5.5	2.150	0.22
331	330.0	±10%	60	1K	0.796M	5.0	2.800	0.19
391	390.0	±10%	55	1K	0.796M	4.5	3.300	0.17
471	470.0	±10%	50	1K	0.796M	4.0	3.600	0.16

**PRODUCT  
PLANNED  
FOR EOL**

**LTB  
18/08/2023**

## Characteristics Electrical 3630B series

Inductance Code	Inductance ( $\mu$ H)	Tolerance	Q Ref	Test Freq (Hz)		S.R.F (MHz)Nom	RDC ( $\Omega$ )Max	IDC (A)Max
				L	Q			
2R2	2.2	$\pm 20\%$	18	1K	7.960M	75.00	0.040	2.50
3R9	3.9	$\pm 20\%$	20	1K	7.960M	50.00	0.055	2.10
5R6	5.6	$\pm 20\%$	20	1K	7.960M	40.00	0.065	1.95
8R2	8.2	$\pm 20\%$	19	1K	7.960M	32.00	0.080	1.75
100	10.0	$\pm 20\%$	40	1K	2.520M	28.00	0.100	1.50
120	12.0	$\pm 20\%$	40	1K	2.520M	24.00	0.120	1.40
150	15.0	$\pm 20\%$	40	1K	2.520M	22.00	0.140	1.30
180	18.0	$\pm 15\%$	40	1K	2.520M	19.00	0.160	1.20
220	22.0	$\pm 15\%$	38	1K	2.520M	17.00	0.180	1.10
270	27.0	$\pm 15\%$	35	1K	2.520M	15.50	0.200	1.00
330	33.0	$\pm 15\%$	40	1K	2.520M	13.50	0.240	0.92
390	39.0	$\pm 15\%$	35	1K	2.520M	12.00	0.260	0.84
470	47.0	$\pm 15\%$	32	1K	2.520M	10.50	0.280	0.75
560	56.0	$\pm 10\%$	30	1K	2.520M	9.50	0.380	0.68
680	68.0	$\pm 10\%$	28	1K	2.520M	9.00	0.440	0.60
820	82.0	$\pm 10\%$	28	1K	2.520M	8.50	0.550	0.54
101	100.0	$\pm 10\%$	45	1K	0.796M	7.50	0.600	0.50
121	120.0	$\pm 10\%$	42	1K	0.796M	7.00	0.750	0.45
151	150.0	$\pm 10\%$	39	1K	0.796M	6.50	0.900	0.40
181	180.0	$\pm 10\%$	41	1K	0.796M	4.80	1.050	0.35
221	220.0	$\pm 10\%$	38	1K	0.796M	4.50	1.180	0.30
271	270.0	$\pm 10\%$	37	1K	0.796M	4.20	1.400	0.27
331	330.0	$\pm 10\%$	36	1K	0.796M	3.80	1.800	0.24
471	470.0	$\pm 10\%$	34	1K	0.796M	3.50	2.250	0.20
561	560.0	$\pm 10\%$	32	1K	0.796M	3.00	3.000	0.18
681	680.0	$\pm 10\%$	32	1K	0.796M	2.80	3.400	0.17
821	820.0	$\pm 10\%$	35	1K	0.796M	2.50	4.000	0.16
102	1000.0	$\pm 10\%$	35	1K	0.252M	2.20	5.000	0.15

## Characteristics Electrical 3630C series

Inductance Code	Inductance ( $\mu$ H)	Tolerance	Q Ref	Test Freq (Hz)		S.R.F (MHz)Nom	RDC ( $\Omega$ )Max	IDC (A)Max
				L	Q			
1R0	1.0	$\pm 20\%$	25	1K	7.960M	120.00	0.017	4.50
1R5	1.5	$\pm 20\%$	25	1K	7.960M	100.00	0.020	3.60
2R2	2.2	$\pm 20\%$	25	1K	7.960M	90.00	0.027	3.10
3R0	3.0	$\pm 20\%$	25	1K	7.960M	80.00	0.030	2.90
4R7	4.7	$\pm 20\%$	25	1K	7.960M	50.00	0.040	2.50
7R0	7.0	$\pm 20\%$	22	1K	7.960M	32.00	0.055	2.20
100	10.0	$\pm 20\%$	48	1K	2.520M	30.00	0.065	2.00
120	12.0	$\pm 20\%$	45	1K	2.520M	25.00	0.080	1.80
150	15.0	$\pm 20\%$	40	1K	2.520M	20.00	0.085	1.70
180	18.0	$\pm 15\%$	35	1K	2.520M	19.00	0.090	1.60
220	22.0	$\pm 15\%$	42	1K	2.520M	18.00	0.100	1.40
270	27.0	$\pm 15\%$	40	1K	2.520M	17.00	0.120	1.30
330	33.0	$\pm 15\%$	40	1K	2.520M	15.00	0.160	1.20
390	39.0	$\pm 15\%$	40	1K	2.520M	13.00	0.180	1.05
470	47.0	$\pm 15\%$	35	1K	2.520M	12.00	0.190	1.00
560	56.0	$\pm 15\%$	35	1K	2.520M	11.00	0.210	0.90
680	68.0	$\pm 15\%$	35	1K	2.520M	9.00	0.340	0.82
820	82.0	$\pm 15\%$	35	1K	2.520M	8.00	0.380	0.75
101	100.0	$\pm 10\%$	35	1K	0.796M	7.50	0.420	0.68
121	120.0	$\pm 10\%$	30	1K	0.796M	7.20	0.460	0.60

## Characteristics Electrical 3630C (continued)

Inductance Code	Inductance ( $\mu$ H)	Tolerance	Q Ref	Test Freq (Hz)		S.R.F (MHz)/Nom	RDC ( $\Omega$ )Max	IDC (A)Max
				L	Q			
151	150.0	$\pm 10\%$	28	1K	0.796M	6.20	0.520	0.55
181	180.0	$\pm 10\%$	28	1K	0.796M	5.80	0.700	0.50
221	220.0	$\pm 10\%$	30	1K	0.796M	5.20	0.800	0.45
271	270.0	$\pm 10\%$	30	1K	0.796M	4.80	1.100	0.40
331	330.0	$\pm 10\%$	30	1K	0.796M	4.50	1.200	0.35
391	390.0	$\pm 10\%$	25	1K	0.796M	4.20	1.400	0.33
471	470.0	$\pm 10\%$	40	1K	0.796M	3.00	1.600	0.30
561	560.0	$\pm 10\%$	40	1K	0.796M	2.70	1.800	0.28
681	680.0	$\pm 10\%$	37	1K	0.796M	2.60	2.300	0.26
821	820.0	$\pm 10\%$	37	1K	0.796M	2.50	2.600	0.24
102	1000.0	$\pm 10\%$	65	1K	0.252M	2.00	3.200	0.22
122	1200.0	$\pm 10\%$	58	1K	0.252M	2.00	3.600	0.20
152	1500.0	$\pm 10\%$	53	1K	0.252M	1.60	5.200	0.17
182	1800.0	$\pm 10\%$	65	1K	0.252M	1.40	5.700	0.16
222	2200.0	$\pm 10\%$	55	1K	0.252M	1.40	6.500	0.14
272	2700.0	$\pm 10\%$	55	1K	0.252M	1.20	8.600	0.12
332	3300.0	$\pm 10\%$	50	1K	0.252M	1.20	10.000	0.10

Electrical specifications @ 25°C

IDC based on Temp. rise 40°C max. and  $\Delta L/LOA=10\%$  max.

## Characteristics Electrical 3630D

Inductance Code	Inductance ( $\mu$ H)	Tolerance	Q Ref	Test Freq (Hz)		RDC ( $\Omega$ )Max	I <sub>rms</sub> (A) Max.	I <sub>sat</sub> (A) Max.
				L	Q			
1R8	1.8	$\pm 20\%$	10	1K	7.960M	0.038	3.00	3.60
2R2	2.2	$\pm 20\%$	11	1K	7.960M	0.045	2.76	3.40
3R0	3.0	$\pm 20\%$	11	1K	7.960M	0.062	2.20	2.60
3R9	3.9	$\pm 20\%$	10	1K	7.960M	0.070	2.10	2.40
4R7	4.7	$\pm 20\%$	10	1K	7.960M	0.078	1.90	2.30
7R5	7.5	$\pm 20\%$	10	1K	7.960M	0.100	1.44	1.70
100	10.0	$\pm 20\%$	18	1K	2.520M	0.145	1.24	1.50
120	12.0	$\pm 20\%$	20	1K	2.520M	0.185	1.10	1.30
150	15.0	$\pm 20\%$	20	1K	2.520M	0.200	1.02	1.20
180	18.0	$\pm 20\%$	20	1K	2.520M	0.270	0.90	1.10
220	22.0	$\pm 20\%$	17	1K	2.520M	0.300	0.80	1.00
270	27.0	$\pm 20\%$	17	1K	2.520M	0.400	0.75	0.90
330	33.0	$\pm 20\%$	17	1K	2.520M	0.450	0.70	0.85
390	39.0	$\pm 20\%$	18	1K	2.520M	0.560	0.65	0.80
470	47.0	$\pm 20\%$	18	1K	2.520M	0.650	0.60	0.72
560	56.0	$\pm 20\%$	15	1K	2.520M	0.680	0.52	0.65
680	68.0	$\pm 20\%$	15	1K	2.520M	0.800	0.48	0.58
820	82.0	$\pm 20\%$	20	1K	2.520M	1.200	0.42	0.52
101	100.0	$\pm 20\%$	23	1K	0.796M	1.400	0.40	0.48
121	120.0	$\pm 20\%$	22	1K	0.796M	1.520	0.35	0.44
151	150.0	$\pm 20\%$	23	1K	0.796M	1.800	0.32	0.40
181	180.0	$\pm 20\%$	20	1K	0.796M	2.200	0.28	0.35
221	220.0	$\pm 20\%$	20	1K	0.796M	2.200	0.26	0.32
271	270.0	$\pm 15\%$	26	1K	0.796M	3.100	0.22	0.28
331	330.0	$\pm 15\%$	26	1K	0.796M	3.600	0.20	0.26
391	390.0	$\pm 15\%$	28	1K	0.796M	4.600	0.18	0.22
471	470.0	$\pm 15\%$	28	1K	0.796M	5.100	0.16	0.20

Electrical specifications @ 25°C

I<sub>rms</sub> based on Temp. rise 40°C max.I<sub>sat</sub> based on  $\Delta L/LOA=10\%$  max

### Characteristics Electrical 3630F

Inductance Code	Inductance (μH)	Tolerance	Q Ref	Test Freq (MHz) Q	S.R.F. (MHz) Typ.	R.D.C. (Ω) Max.	I <sub>rms</sub> (A) Typ.	I <sub>sat</sub> (A) Typ.
100	10.0	±20%	56	2.52M	19.00	0.040	4.00	8.20
150	15.0	±20%	53	2.52M	17.50	0.052	3.60	7.20
220	22.0	±20%	51	2.52M	16.00	0.070	3.00	6.20
330	33.0	±20%	44	2.52M	10.00	0.100	2.50	5.00
470	47.0	±20%	40	2.52M	8.00	0.130	2.00	4.20
680	68.0	±20%	37	2.52M	6.00	0.200	1.60	3.40
101	100.0	±20%	40	0.796M	4.60	0.320	1.30	2.60
151	150.0	±20%	39	0.796M	4.30	0.500	1.05	2.30
221	220.0	±20%	29	0.796M	3.50	0.600	1.00	1.90
331	330.0	±20%	30	0.796M	3.00	0.920	0.80	1.40
471	470.0	±20%	27	0.796M	2.40	1.150	0.64	1.30
681	680.0	±20%	19	0.796M	2.10	1.700	0.54	1.10
102	1000.0	±10%	46	0.252M	1.50	2.450	0.45	0.90

Electrical specifications @ 25°C

Inductance test condition 100kHz

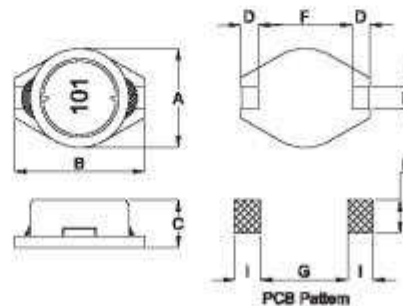
I<sub>rms</sub> based on Temp. rise 40°C typ.

I<sub>sat</sub> based on ΔL/L0A=10% typ.

### Environmental Characteristics – A,B,C,D,F series

Storage Temp:	-40°C to +125°C
Operating Temp:	-40°C to +125°C
Rated current	Based on Temp. rise and ΔL/L0A=10% max. (F = 10% typ.)
Temp Rise:	40°C max. (F = 40°C typ.)
Resistance to Solder heat	A & D = 250°C 10s
	B, C & F = 245°C 10s

### Dimensions A, B, C, D, F series



Series	A	B	C	D	E	F	G(ref)	H(Ref)	I(Ref)
3630A	8.0±0.3	10.5±0.3	3.7±0.3	2.1±0.2	2.0±0.2	6.0±0.3	5.7	2.2	2.4
3630B	8.0±0.3	10.5±0.3	4.5±0.3	2.1±0.2	2.0±0.2	6.0±0.3	5.7	2.2	2.4
3630C	10.0±0.3	12.7±0.3	4.9±0.3	2.4±0.2	2.2±0.2	7.6±0.3	7.3	2.8	3.0
3630D	10.10±0.3	12.7±0.3	2.7±0.3	2.4±0.2	2.2 ref	7.6±0.3	7.3	2.8	3.0
3630F	14.0±0.5	18.2±0.5	6.8±0.3	2.5±0.2	2.6±0.2	13.0±0.3	12.7	2.9	3.2

### Characteristics Electrical 3630E

Inductance Code	Inductance (μH) ±20%	Q Min	Test Freq (Hz)		S.R.F. (MHz)Nom	RDC (Ω)Max	I <sub>rms</sub> (A) Max.	I <sub>sat</sub> (A) Typ.
			L/0.1V	Q				
1R0	1.0	10	100k	200k	250.00	0.040	3.000	1.200
1R5	1.5	20	100k	500k	125.00	0.045	2.800	0.920
2R2	2.2	25	100k	500k	120.00	0.050	1.800	0.800
3R3	3.3	40	100k	200k	120.00	0.055	1.600	0.620
4R7	4.7	40	100k	200k	105.00	0.060	1.400	0.500
6R8	6.8	40	100k	200k	50.00	0.065	1.200	0.400
100	10.0	40	100k	200k	38.00	0.075	1.000	0.320
150	15.0	40	100k	100k	33.00	0.090	0.800	0.260
220	22.0	40	100k	100k	25.00	0.110	0.700	0.240
330	33.0	40	100k	100k	20.00	0.190	0.600	0.160
470	47.0	40	100k	100k	20.00	0.230	0.500	0.140
680	68.0	40	100k	100k	15.00	0.290	0.400	0.120
101	100.0	40	100k	100k	10.00	0.480	0.300	0.100
151	150.0	40	100k	100k	9.00	0.590	0.260	0.080
221	220.0	40	100k	100k	6.00	0.770	0.220	0.070
331	330.0	40	100k	100k	5.00	1.400	0.200	0.050
471	470.0	40	100k	100k	4.00	1.800	0.190	0.045
681	680.0	40	100k	100k	3.00	2.200	0.180	0.040
102	1000.0	40	100k	100k	2.00	3.400	0.150	0.028
152	1500.0	50	100k	100k	2.00	4.200	0.120	0.024
222	2200.0	50	100k	100k	2.00	8.500	0.100	0.020
332	3300.0	50	100k	100k	1.00	11.000	0.080	0.018
472	4700.0	50	100k	100k	1.00	13.900	0.060	0.014
682	6800.0	50	100k	100k	1.00	25.000	0.040	0.012
103	10000.0	50	100k	100k	0.80	32.800	0.020	0.010

Electrical specification at 25°C

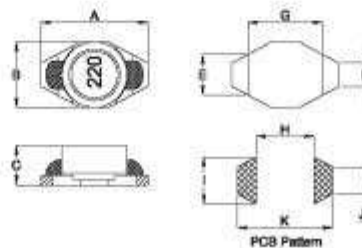
I<sub>rms</sub> based on Temp. rise 30°C max.

I<sub>sat</sub> based on ΔL/LOA=10% typ.

### Environmental Characteristics – E series

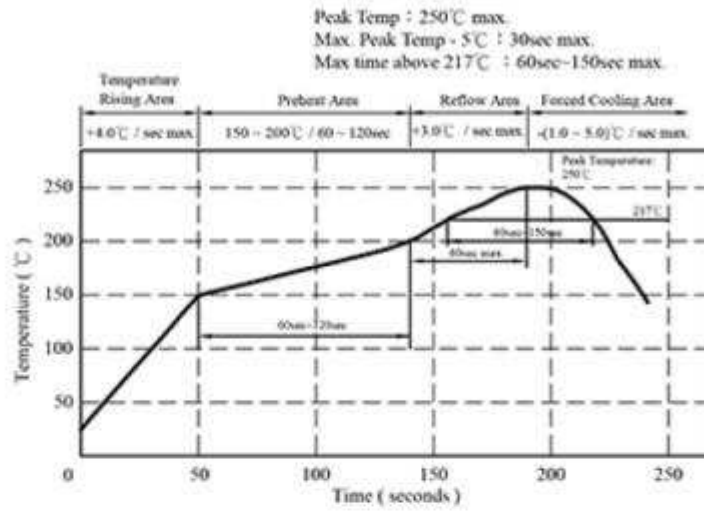
Storage Temp:	-55°C to +125°C
Operating Temp:	-55°C to +125°C
Rated Current:	Based on Temp. rise and ΔL/LOA=10% typ.
Temp Rise:	30°C max.
Resistance to Solder heat:	250°C 10s

### Dimensions E series

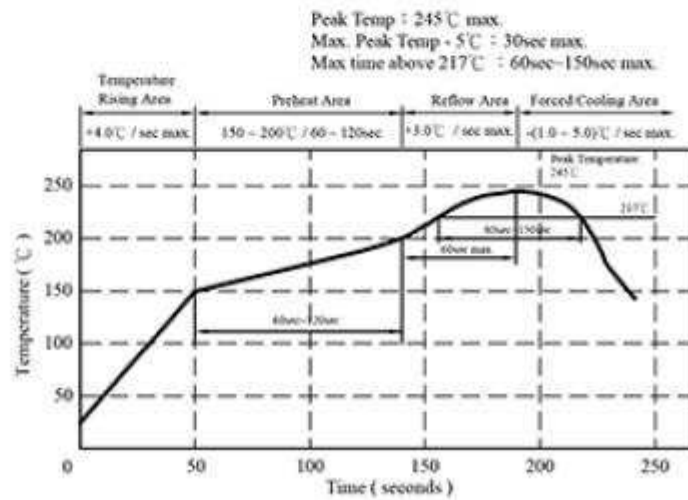


Series	A	B max	C	E ref	F ref	G ref	H ref	I ref	J ref	K ref
3630E	±0.20	4.40	±0.15	2.50	1.24	4.45	4.10	1.60	3.00	7.00

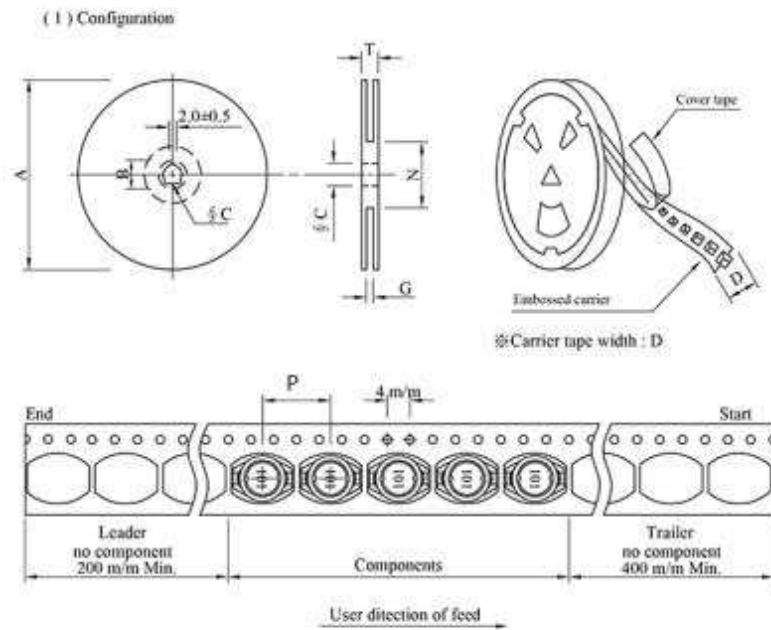
Recommended Reflow Solder Profile A, D, E series



Recommended Reflow Solder Profile B, C, F Series



Packaging:



Series	A	B	C	D	G	N	T	P	Reel Quantity
3630A	330	21±0.8	13±0.5	16	18	50	22.4	12	1000
3630B	330	21±0.8	13±0.5	16	18	50	22.4	12	1000
3630C	330	21±0.8	13±0.5	24	26	60	30.4	16	600
3630D	330	21±0.8	13±0.5	24	26	60	30.4	16	1000
3630E	178	21±0.8	13	12	14	50	16.5	8	600
3630F	330	21±0.8	13±0.5	32	34	100	38.4	20	250

Reliability Tests

Item	Reference Documents	Test Condition	Test Specification
High Temperature Exposure	MIL-STD-202 Method 108	Temperature: 125±2°C Time: 96±2 hours	No mechanical or electrical damage Inductance shall not change by more than ±20%
Temperature Cycling	JESD22-A 104	Temperature: -40°C ~ +125°C Number of Cycles: 100 Dwell Time: 30 minutes	No mechanical or electrical damage Inductance shall not change by more than ±20%
Biased Humidity Test	MIL-STD-202 Method 103	Temperature: 85±2°C Humidity: 85% RH Time: 96±2 hours	No mechanical or electrical damage Inductance shall not change by more than ±20%
Operational Life	JESD22-A 108	Temperature: 125°C (temperature rise included) Time: 96±2 hours Rated Current	No mechanical or electrical damage Inductance shall not change by more than ±20%
External Visual	JESD22-B 101 and MIL-STD-883 Method 2009	Inspect product construction, marking and workmanship.	No pollution on surface of product Clear Marking No Cracks

## Reliability Tests (continued)

Item	Reference Documents	Test Condition	Test Specification
Physical Dimensions	JESD22-B 100	Verify physical dimensions to applicable product specification	Per product specification standard
Resistance to Solvents	MIL-STD-202 Method 215	Immerse into solvent for 3±0.5 minutes and brush 10 times for 3 cycles	No change in body appearance No blurring of marking Inductance shall not change by more than ±20%
Vibration Test	MIL-STD-202 Method 204	Frequency and amplitude: 10 – 20000 – 10 Hz, 1.5mm Direction: X, Y, Z Test duration: 2 hours for each direction. 6 hours in total	No mechanical or electrical damage Inductance shall not change by more than ±20%
Resistance to soldering Heat	MIL-STD-202 Method 210 & J-STD020D.1	Highest Temperature: 250±5°C (A,D,E) 245±5°C (B,C,F) Time (temp ≥217°C): 60 – 150 seconds IR reflow times: 3	No mechanical or electrical damage Inductance shall not change by more than ±20%
Saturation Current	JIS C 6436 & user Spec.	Apply rated current for 5 seconds Saturation current	Inductance shall not drop by more than 10%
Overload	JIS C 6436 & user Spec.	Apply 1.5 x rated current for 5 minutes Rated current	No electrical or mechanical damage
Temperature Rise Current	JIS C 6436 & user Spec.	Apply rated current for 10 minutes Measure temperature using digital surface thermometer I <sub>rms</sub> current	Surface temperature rise less than 40°C (E series 30°C)
Solderability Test	J-STD002 & JESD22-B 102	Bake: 150±5°C / 16±0.5 hours Peak Temp: 240±5°C Time (temp ≥217°C): 60 – 150 seconds IR reflow times: 1	More than 95% coverage on all terminations
Electrical Characterisation	MIL-STD-202 Method 304 & User Spec.	Operating temp: As spec. Room temp: 25°C	No mechanical or electrical damage Inductance shall not change by more than ±20%
Terminal Strength	IEC 60068-2-21	Apply push force of 1.8kg / 60±1s	No mechanical or electrical damage

## How To Order

3630	A	5R0	M
Common Part	Style	Inductance Code	Tolerance
3630	A,B,C,D,E,F	See above tables	K = ±10% L = ±15% M = ±20%

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