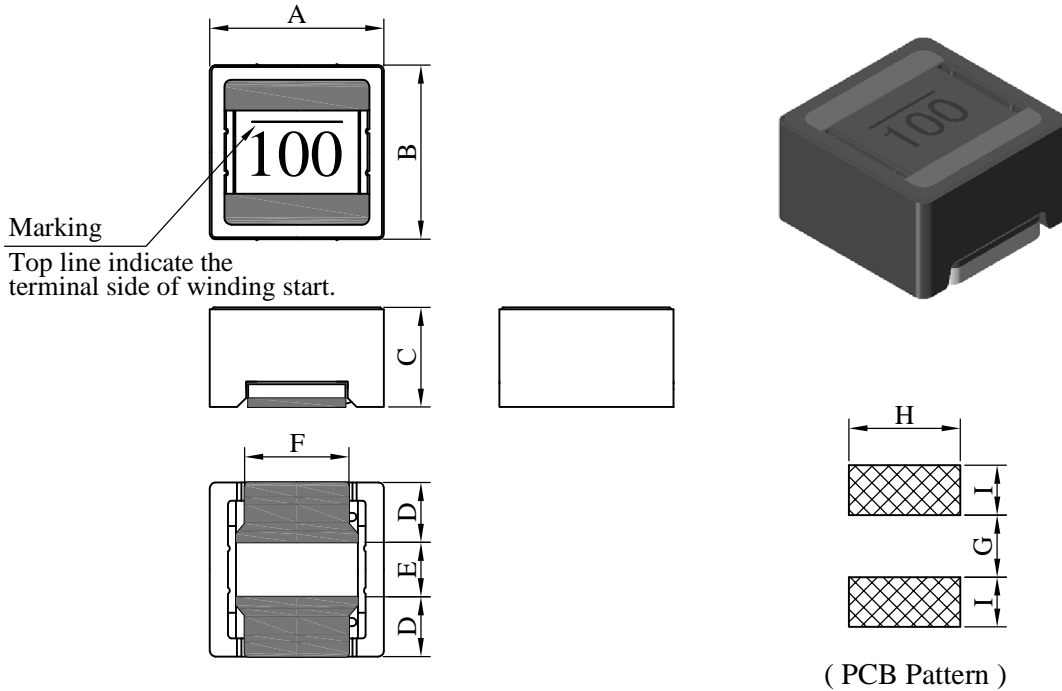


# SPECIFICATION FOR APPROVAL

REF. :

PROD. NAME	Shielded SMD Power Inductor	ABC'S DWG NO.		QS4828□□□□L□-□□□		
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## I . Configuration and dimensions :



Unit : mm

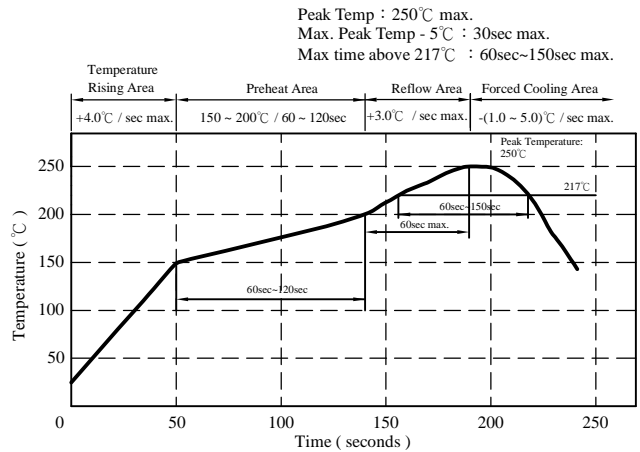
A	B	C	D	E	F	G	H	I
4.80 ±0.2	4.80 ±0.2	2.80 ±0.2	1.60 ±0.2	1.60 ±0.2	2.90 ±0.2	1.17 ref.	4.20 ref.	1.98 ref.

## II . Description :

- a . Ferrite drum core construction.
- b . Magnetically shielded.
- c . Enamelled copper wire : H class
- d . Product weight : 0.265 g ( ref. )
- e . Moisture sensitivity Level 1
- f . Products comply with RoHS' requirements
- g . Halogen free

## III . General specification :

- a . Storage temp. : -40°C ----+125°C
- b . Operating temp. : -40°C ----+125°C  
(Temp. rise included)
- c . Resistance to solder heat : 260°C .10 secs.



# SPECIFICATION FOR APPROVAL

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## IV . Electrical characteristics :

DWG. No.	Inductance ( μH )	RDC ( mΩ )		SRF (MHz) typ.	Isat ( A ) typ.	Irms1 ( A ) typ.	Irms2 ( A ) typ.
		typ.	max.				
QS48281R2YL□-□□□	1.2 ±30%	18.5	24.0	155.0	3.00	3.50	5.00
QS48281R8YL□-□□□	1.8 ±30%	22.7	30.0	105.0	2.50	3.00	4.60
QS48282R7YL□-□□□	2.7 ±30%	26.2	34.0	80.0	2.20	2.50	4.00
QS48283R9YL□-□□□	3.9 ±30%	36.3	47.0	60.0	1.80	2.20	3.40
QS48284R7YL□-□□□	4.7 ±30%	41.4	54.0	50.0	1.60	2.10	3.00
QS48286R8YL□-□□□	6.8 ±30%	57.0	74.0	40.0	1.30	1.65	2.60
QS48288R2YL□-□□□	8.2 ±30%	66.8	87.0	35.0	1.25	1.60	2.40
QS4828100ML□-□□□	10.0 ±20%	76.4	100.0	30.0	1.10	1.50	2.30
QS4828120ML□-□□□	12.0 ±20%	100.0	125.0	27.0	0.95	1.35	2.00
QS4828150ML□-□□□	15.0 ±20%	108.8	145.0	25.0	0.92	1.30	1.80
QS4828180ML□-□□□	18.0 ±20%	125.0	160.0	22.0	0.80	1.20	1.70
QS4828220ML□-□□□	22.0 ±20%	145.9	185.0	20.0	0.68	1.10	1.55
QS4828330ML□-□□□	33.0 ±20%	208.2	260.0	15.0	0.60	0.90	1.40
QS4828470ML□-□□□	47.0 ±20%	215.0	270.0	13.0	0.47	0.88	1.20
QS4828560ML□-□□□	56.0 ±20%	260.4	320.0	12.0	0.40	0.85	1.05
QS4828680ML□-□□□	68.0 ±20%	294.3	370.0	11.0	0.38	0.80	0.90
QS4828820ML□-□□□	82.0 ±20%	381.9	480.0	10.0	0.35	0.70	0.85
QS4828101ML□-□□□	100.0 ±20%	495.3	600.0	8.5	0.33	0.65	0.70
QS4828121ML□-□□□	120.0 ±20%	630.0	760.0	8.0	0.30	0.50	0.65
QS4828151ML□-□□□	150.0 ±20%	713.9	860.0	7.0	0.28	0.45	0.60
QS4828181ML□-□□□	180.0 ±20%	899.1	1080.0	6.0	0.26	0.43	0.55
QS4828221ML□-□□□	220.0 ±20%	1000.7	1250.0	5.5	0.24	0.41	0.50
QS4828271ML□-□□□	270.0 ±20%	1418.0	1700.0	5.0	0.21	0.40	0.45
QS4828331ML□-□□□	330.0 ±20%	1552.8	1800.0	4.5	0.20	0.32	0.40
QS4828391ML□-□□□	390.0 ±20%	2057.5	2400.0	4.0	0.17	0.30	0.35
QS4828471ML□-□□□	470.0 ±20%	2312.3	2600.0	3.3	0.16	0.27	0.33
QS4828561ML□-□□□	560.0 ±20%	2605.5	3000.0	3.0	0.15	0.25	0.30

- 1). Electrical specifications at 25°C
- 2). Inductance Test Freq :100kHz /0.1V
- 3). Isat base on  $\Delta L / LOA=35\%$  typ.(Approximately transient current )
- 4). Irms1 base on Temp. rise 20°C typ.
- 5). Irms2 base on Temp. rise 40°C typ.

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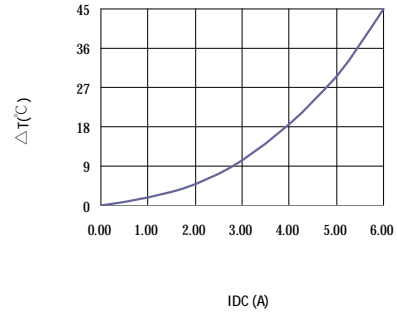
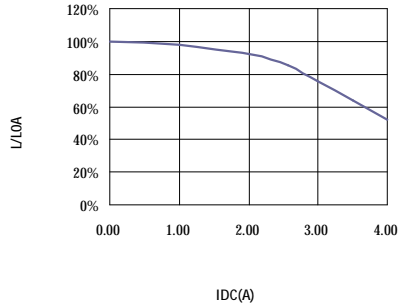
# SPECIFICATION FOR APPROVAL

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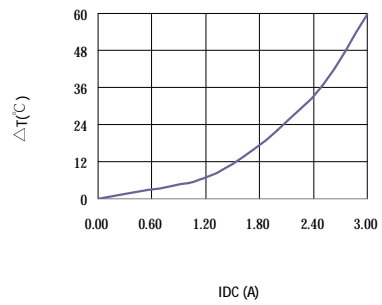
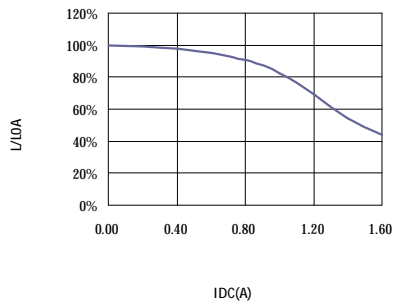
PROD. NAME	Shielded SMD Power Inductor	ABC'S DWG NO.	QS4828□□□□L□-□□□		
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V . Curve :

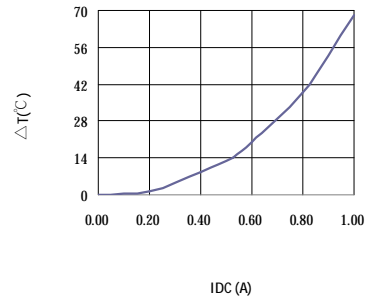
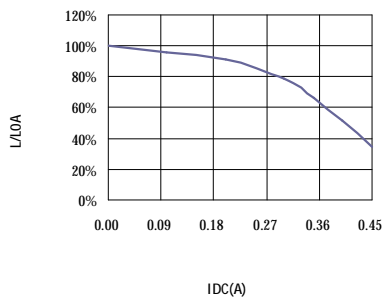
QS48281R2YL□



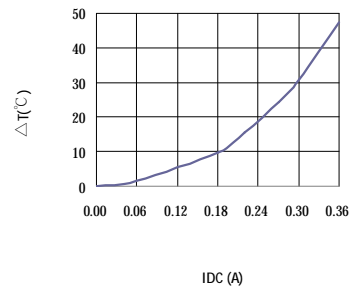
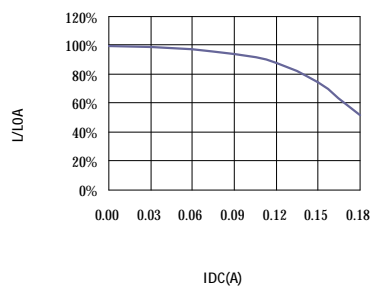
QS4828100ML□



QS4828101ML□



QS4828561ML□



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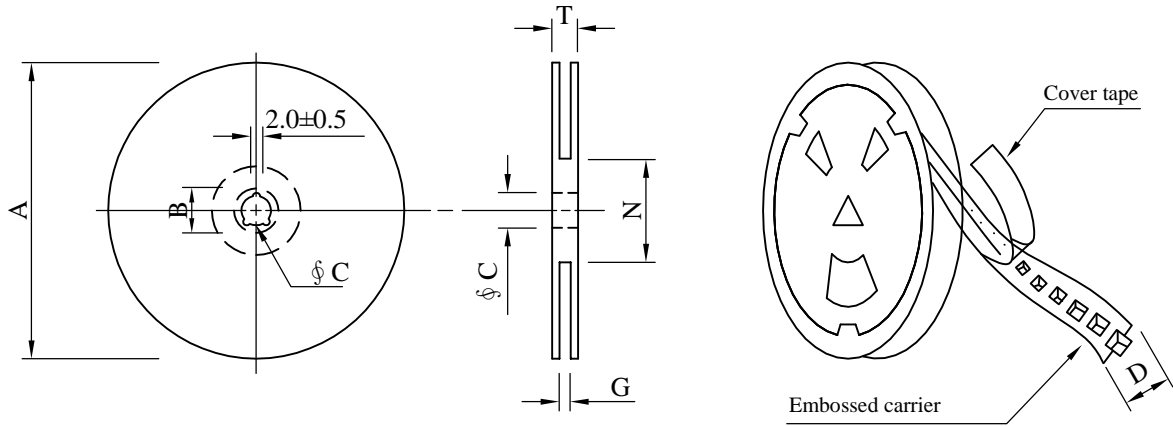
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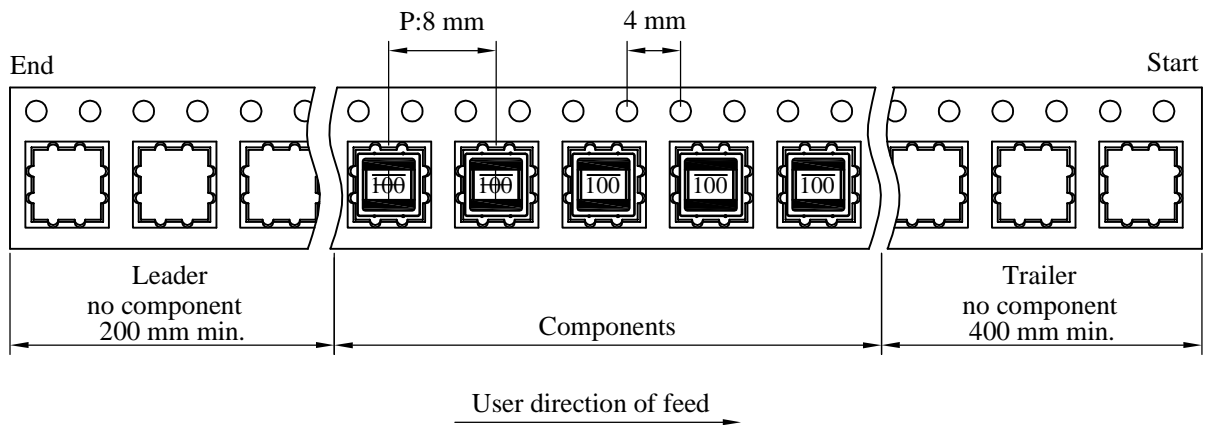
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## VI . Packaging information :

### ( 1 ) Configuration



※Carrier tape width : D



### ( 2 ) Dimensions

Unit:mm

Style	A	B	C	D	G	N	T
07 - 12	178	21±0.8	13	12	14 <sup>+0</sup>	50 <sup>-0</sup>	16.5
13 - 12	330	21±0.8	13±0.5	12	14 <sup>+0</sup>	50 <sup>-0</sup>	18.4

### ( 3 ) Q'TY & G.W. Per package

Code	Inner : Reel			Outer : Carton		
	Q'TY (pcs)	G.W. (g)	Style	Q'TY (pcs)	G.W. (kg)	Size (cm)
B	500	240	07 - 12	20,000	10.9	42 x 41 x 24
C	2,000	900	13 - 12	16,000	8.5	38 x 37 x 22

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# SPECIFICATION FOR APPROVAL

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## VIII . Reliability test :

Item	Reference documents	Test Condition	Test Specification
1.High Temperature Exposure	MIL-STD-202 Method 108	1.Temperature: 125±2℃ 2.Time:96±2 hours.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%.
2.Temperature Cycling	JESD22-A 104	1.Temperature: -40℃ ~ +125℃ 2.Number of cycle:100 cycles 3.Dwell time:30 minutes	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%.
3.Biased Humidity Test	MIL-STD-202 Method 103	1.Temperature : 85±2 ℃ 2.Humidity: 85% RH. 3.Time:96±2 Hours	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%.
4.Operational Life	JESD22-A 108	1.Temperature: 125℃ (Temp. rise included) 2.Time:96±2 hours. 3.Apply rated current.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%.
5.External Visual	JESD22-B 101 & MIL-STD-883 Method 2009	Inspect product constructions, marking and workmanship.	1.No pollution on the surface of products. 2.Clear marking. 3.No crack.
6.Physical Dimensions	JESD22-B 100	Verify physical dimensions to the applicable product detail specification.	Per product specification standard
7.Resistance to solvents	MIL-STD-202 Method 215	Immerse into solvent for 3±0.5 minutes & brush 10 times for 3 cycles.	1.No body change in appearance. 2.No marking blurred. 3.Inductance shall not change more than ±20%.
8.Vibration Test	MIL-STD-202 Method 204	1.Frequency and Amplitued : 10-2000-10 Hz, 1.5 mm. 2.Direction:X, Y, Z 3.Test duration:2 hours for each direction, 6 hours in total.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%.
9.Resistance To Soldering Heat Test	MIL-STD-202 Method 210 & J-STD020D.1	1.Highest temperature : 250±5℃ . 2.Time ( temp. ≥ 217℃ ) : 60~150 Seconds. 3.IR reflow times : 3 times.	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%.
10.Saturation Current	JIS C 6436 & User SPEC.	1.Applied rated current for 5 seconds. 2.Apply saturation current.	Inductance shall not drop more than 35% typ.
11.Over load	JIS C 6436 & User SPEC.	1.Applied one and half rated current for a period of 5 minutes. 2.Apply rated current.	No electrical or mechanical damage
12.Temperature Rise Current	JIS C 6436 & User SPEC.	1.Applied rated current for 10 minutes. 2.Temperature measure by digital surface thermometer. 3.Apply Irms current.	Surface temperature rise is less than 40℃ typ.
13.Solderability Test	J-STD-002 & JESD22-B 102	1.Baking in pre-testing : 150±5℃ / 16Hours±30 min. 2.Peak temperature : 240±5℃ 3.Time ( temp. ≥ 217℃ ) : 60~150 seconds. 4.IR reflow times : 1 time.	More than 95% soldering coverage min on terminations.
14.Electrical Characteriazation	MIL-STD-202 Method 304 & User SPEC.	1.Operating temperature : -40℃~125℃ 2.Room temperature : 25℃ .	1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%.
15.Drop	CNS-C6354 & GB/T 2423.8	1.Products shall be mounted on SPEC. PCB and dropped down from a height of 1m 2.Drop total time : 6 times (Every side of sample drop 2 times)	1. Adhesion on PCB shall be enough. 2. Product appearance shall not break. 3. No electrical damage.
16.Terminal Strength Test	IEC 60068-2-21	1.Apply push force to samples mounted on PCB. 2.Force of 1.8 kg for 60±1 seconds.	After test, inductors shall be no mechanical damage.

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ABC-ATEC ELECTRONICS GROUP