PSB0503 , PSB5028 , PSB6013 , PSB6025 , PSB8040 & PSB8058

SMD Power Inductors Shielded

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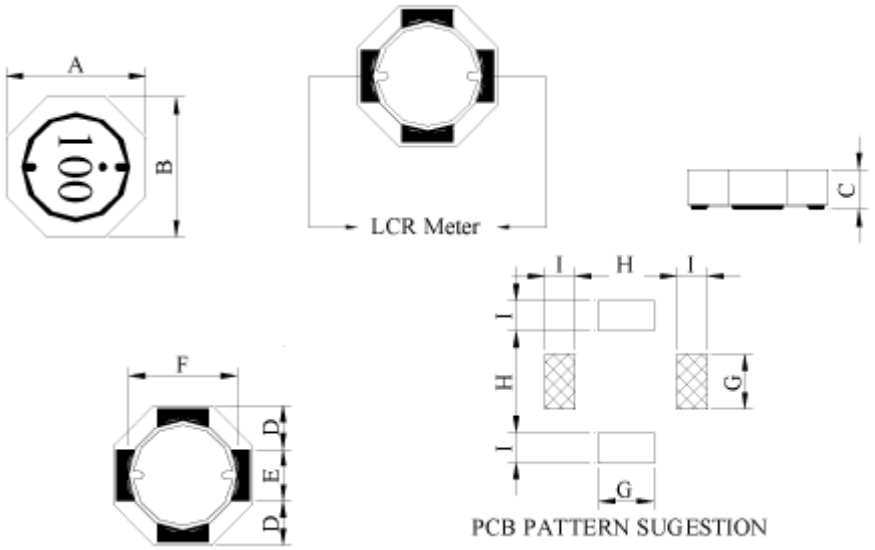
1. Configuration & Dimensions

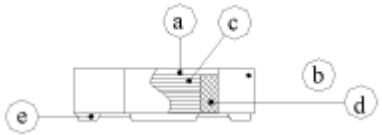


Series	Dimensions [mm]								
	A	B	C	D(typ.)	E(typ.)	F(typ.)	G(ref.)	H(ref.)	I(ref.)
PSB0503	5.20±0.20	5.20±0.20	2.80±0.20	1.70	1.80	3.90	2.00	3.70	1.10
PSB5028	5.20±0.20	5.20±0.20	2.80±0.20	1.70	1.80	3.90	2.00	3.70	1.10
PSB6013	6.20±0.30	6.50±0.30	1.40±0.20	2.15	2.20	4.90	2.40	4.90	1.10
PSB6025	6.20±0.30	6.50±0.30	2.50±0.30	2.15	2.20	4.90	2.40	4.90	1.10
PSB8040	8.00±0.30	8.00±0.30	3.80±0.30	2.40	3.20	6.40	3.40	6.20	1.40
PSB8058	8.00±0.30	8.00±0.30	5.80±0.30	2.40	3.20	6.40	3.40	6.20	1.40

2. Schematic Diagram

3. Materials

a.- Core : Ferrite DR core
b.- Core : Ferrite RI core
c.- Wire : Enamelled copper wire (class F)
d.- Terminal : Ag / Ni / Sn
e.- Adhesive : Epoxy resin
f.- Remark : Lead content 200ppm max. include ferrite



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4. General Specification

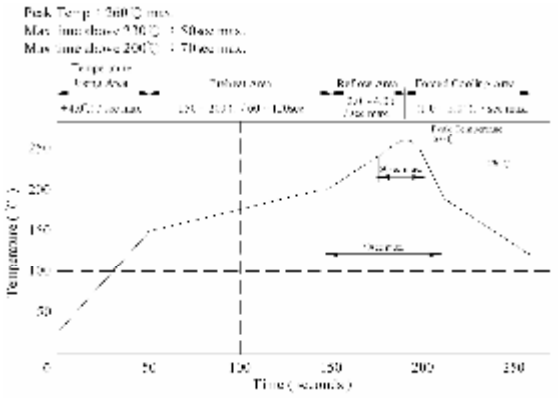
a.- Temp. rise { 30°C typ. (PSB6025)
40°C typ. (PSB0503, PSB5028, PSB6013, PSB8040, PSB8058)

b.- Rated current : Base on temp. rise & ΔL/L0A = 35% typ.

c.- Storage temp. : -40°C ~ +125°C

d.- Operating temp. : -40°C ~ +105°C

e.- Resistance to solder heat : 260°C. 10 secs



5. Electrical Characteristics

PSB0503 (1.2µH – 100µH)

DWG No.	Inductance (mH)	Q ref.	Test Freq.		RDC (mΩ)		SRF (MHz) typ.	Irms (mA) typ.	Isat (mA) typ.
			L (KHz)	Q (MHz)	typ.	max.			
PSB0503 – 1R2N	1.2±30%	10.0	100	7.96	16.8	22.0	200	3500	3400
PSB0503 – 2R2N	2.2±30%	10.0	100	7.96	21.0	27.0	130	3200	2500
PSB0503 – 3R3N	3.3±30%	10.0	100	7.96	24.0	32.0	90	2800	2100
PSB0503 – 4R7N	4.7±30%	9.0	100	7.96	32.0	45.0	50	2200	1850
PSB0503 – 6R8N	6.8±30%	10.0	100	7.96	42.0	56.0	55	2000	1550
PSB0503 – 100N	10.0±30%	18.0	100	2.52	63.0	85.0	25	1800	1400
PSB0503 – 150N	15.0±30%	18.0	100	2.52	108.0	140.0	23	1100	1000
PSB0503 – 220N	22.0±30%	15.0	100	2.52	162.0	210.0	18	950	850
PSB0503 – 330N	33.0±30%	15.0	100	2.52	203.0	260.0	16	800	680
PSB0503 – 470N	47.0±30%	13.0	100	2.52	285.0	360.0	13	700	620
PSB0503 – 680N	68.0±30%	13.0	100	2.52	450.0	550.0	10	560	460
PSB0503 – 101N	100.0±30%	15.0	100	0.796	625.0	800.0	8	470	420

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PSB5028 (4.7µH – 220µH)

DWG No.	Inductance (mH)	Q ref.	Test Freq.		RDC (mΩ)		SRF (MHz) typ.	Irms (mA) typ.	Isat (mA) typ.
			L (KHz)	Q (MHz)	typ.	max.			
PSB5028 – 4R7N	4.7±30%	8.0	100	7.96	24.0	35.0	70	2500	1500
PSB5028 – 6R8N	6.8±30%	7.2	100	7.96	28.0	38.0	45	2200	1200
PSB5028 – 100N	10.0±30%	10.5	100	2.52	46.5	60.0	35	1800	950
PSB5028 – 150N	15.0±30%	20.0	100	2.52	63.0	82.0	30	1500	800
PSB5028 – 220N	22.0±30%	17.0	100	2.52	105.0	132.0	20	1150	680
PSB5028 – 330N	33.0±30%	18.0	100	2.52	150.0	195.0	15	960	600
PSB5028 – 470N	47.0±30%	13.0	100	2.52	195.0	250.0	14	830	450
PSB5028 – 680N	68.0±30%	12.0	100	2.52	260.0	340.0	10	750	330
PSB5028 – 101N	100.0±30%	35.0	100	0.796	425.0	550.0	10	520	300
PSB5028 – 151N	150.0±30%	45.0	100	0.796	600.0	750.0	8	480	280
PSB5028 – 221N	220.0±30%	40.0	100	0.796	870.0	1085.0	6	360	240

PSB6013 (1µH – 68µH)

DWG No.	Inductance (mH)	Q ref.	Test Freq.		RDC (mΩ)		SRF (MHz) typ.	Irms (mA) typ.	Isat (mA) typ.
			L (KHz)	Q (MHz)	typ.	max.			
PSB6013 – 1R0N	1.0±30%	12	100	7.96	28	36	100	3200	2900
PSB6013 – 1R5N	1.5±30%	10	100	7.96	32	40	90	3000	2400
PSB6013 – 2R2N	2.2±30%	10	100	7.96	40	50	80	2500	2100
PSB6013 – 3R3N	3.3±30%	10	100	7.96	45	60	70	2350	1750
PSB6013 – 4R2N	4.2±30%	10	100	7.96	58	75	55	2100	1500
PSB6013 – 6R4N	6.4±30%	10	100	7.96	85	110	45	1700	1300
PSB6013 – 100N	10.0±30%	14	100	2.52	132	165	35	1400	1000
PSB6013 – 150N	15.0±30%	12	100	2.52	180	235	26	1100	800
PSB6013 – 220N	22.0±30%	12	100	2.52	260	325	22	950	720
PSB6013 – 330N	33.0±30%	10	100	2.52	400	500	18	780	580
PSB6013 – 470N	47.0±30%	10	100	2.52	540	675	14	660	500
PSB6013 – 680N	68.0±30%	10	100	2.52	720	900	10	600	400

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PSB6025 (1.2µH – 220µH)

DWG No.	Inductance (mH)	Q ref.	Test Freq.		RDC (mΩ)		SRF (MHz) typ.	Irms (mA) typ.	Isat (mA) typ.
			L (KHz)	Q (MHz)	typ.	max.			
PSB6025 – 1R2N	1.2±30%	8	100	7.96	14.5	19	120	4000	3200
PSB6025 – 2R2N	2.2±30%	8	100	7.96	18.5	24	65	3400	2350
PSB6025 – 3R3N	3.3±30%	8	100	7.96	21.0	27	50	3200	2000
PSB6025 – 4R7N	4.7±30%	8	100	7.96	27.0	35	42	2700	1550
PSB6025 – 6R8N	6.8±30%	8	100	7.96	32.0	42	36	2400	1300
PSB6025 – 8R2N	8.2±30%	8	100	7.96	40.0	52	30	2200	1250
PSB6025 – 100N	10.0±30%	12	100	2.52	44.0	57	25	2000	1050
PSB6025 – 150N	15.0±30%	12	100	2.52	66.0	86	22	1800	920
PSB6025 – 220N	22.0±30%	12	100	2.52	100.0	130	18	1600	700
PSB6025 – 330N	33.0±30%	12	100	2.52	140.0	180	12	1200	640
PSB6025 – 470N	47.0±30%	12	100	2.52	190.0	250	10	1000	480
PSB6025 – 680N	68.0±30%	10	100	2.52	280.0	365	8	800	400
PSB6025 – 101N	100.0±30%	24	100	0.796	385.0	500	7	700	350
PSB6025 – 151N	150.0±30%	30	100	0.796	590.0	770	5	540	280
PSB6025 – 221N	220.0±30%	20	100	0.796	950.0	1250	4	420	240

PSB8040 (3.3µH – 150µH)

DWG No.	Inductance (mH)	Q ref.	Test Freq.		RDC (mΩ)		SRF (MHz) typ.	Irms (A) typ.	Isat (A) typ.
			L (KHz)	Q (MHz)	typ.	max.			
PSB8040 – 3R3N	3.3±30%	12	100	7.96	13.8	18.0	40.0	6.00	5.00
PSB8040 – 4R2N	4.2±30%	12	100	7.96	16.5	22.0	32.0	5.30	4.60
PSB8040 – 6R2N	6.2±30%	10	100	7.96	25.0	32.0	28.0	4.20	4.00
PSB8040 – 100N	10.0±30%	22	100	2.52	33.0	42.0	20.0	3.70	2.90
PSB8040 – 150N	15.0±30%	20	100	2.52	55.0	70.0	18.0	2.80	2.50
PSB8040 – 220N	22.0±30%	22	100	2.52	88.0	110.0	15.0	2.20	2.05
PSB8040 – 330N	33.0±30%	22	100	2.52	115.0	150.0	12.0	1.90	1.75
PSB8040 – 470N	47.0±30%	20	100	2.52	150.0	190.0	10.0	1.55	1.45
PSB8040 – 680N	68.0±30%	18	100	2.52	205.0	260.0	8.0	1.35	1.10
PSB8040 – 101N	100.0±30%	25	100	0.796	325.0	410.0	6.0	1.05	0.92
PSB8040 – 151N	150.0±30%	18	100	0.796	445.0	560.0	5.0	0.90	0.77

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PSB8058 (3.9µH – 100µH)

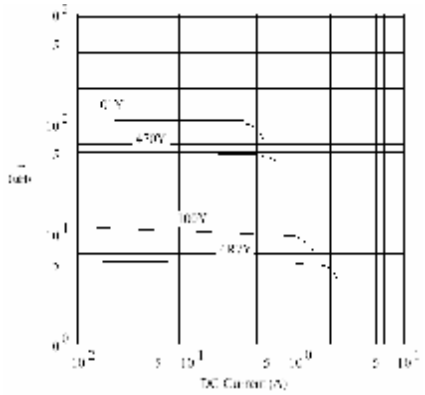
DWG No.	Inductance (mH)	Q ref.	Test Freq.		RDC (mΩ)		SRF (MHz) typ.	Irms (A) typ.	Isat (A) typ.
			L (KHz)	Q (MHz)	typ.	max.			
PSB8058 – 3R9N	3.9±30%	8	100	7.96	12.0	16.0	45.0	6.50	4.50
PSB8058 – 5R2N	5.2±30%	8	100	7.96	14.0	17.5	35.0	5.80	3.90
PSB8058 – 6R8N	6.8±30%	8	100	7.96	16.0	20.0	30.0	5.50	4.00
PSB8058 – 100N	10.0±30%	20	100	2.52	18.6	25.0	18.0	4.60	3.00
PSB8058 – 220N	22.0±30%	20	100	2.52	42.0	52.0	14.0	3.40	1.80
PSB8058 – 330N	33.0±30%	16	100	2.52	58.0	72.0	10.0	2.70	1.60
PSB8058 – 470N	47.0±30%	12	100	2.52	80.0	100.0	7.0	2.30	1.50
PSB8058 – 680N	68.0±30%	16	100	2.52	100.0	130.0	6.0	2.00	1.20
PSB8058 – 101N	100.0±30%	22	100	0.796	124.0	160.0	5.0	1.70	0.90

[Inductance tested at 0.1V] [Irms base on temp. rise: 40°C, 30°C (PSB6025)] [Isat base on ΔL/L0A=35%]

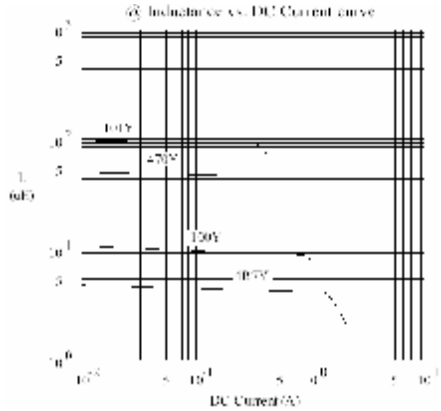
6. Curve

Inductance VS. DC Current Curve

PSB0503

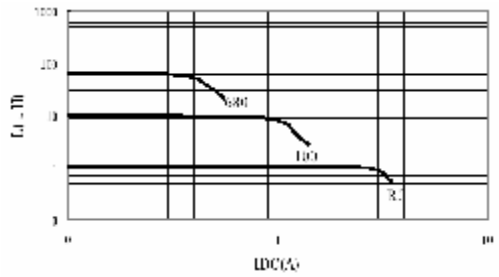


PSB5028

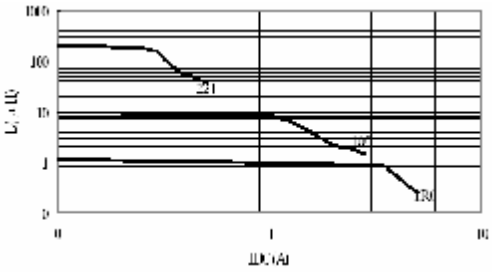


Inductance VS. IDC

PSB6013



PSB6025



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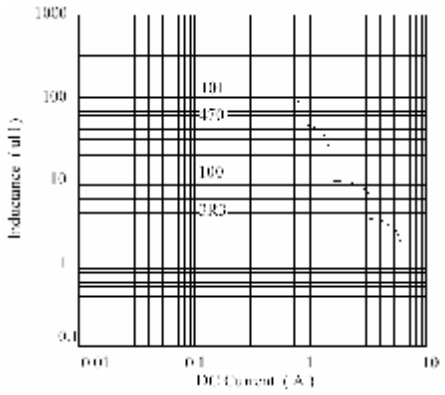
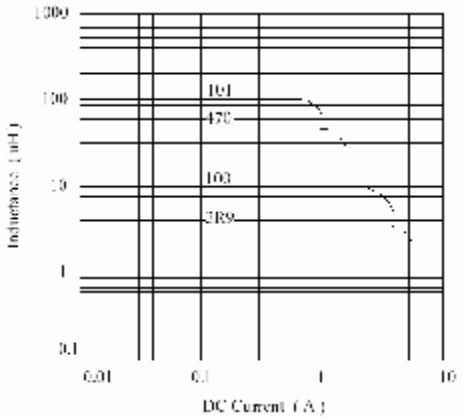
Inductance VS. DC Current Curve

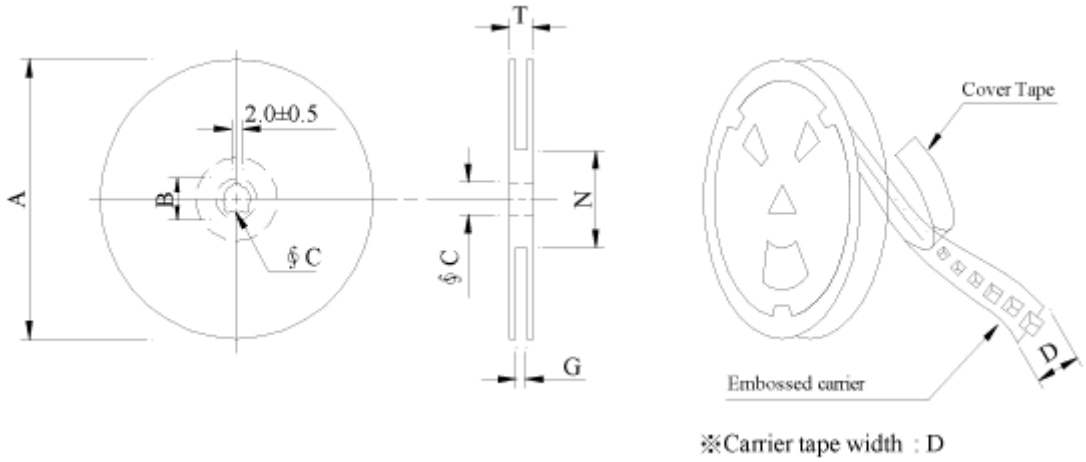
PSB8040



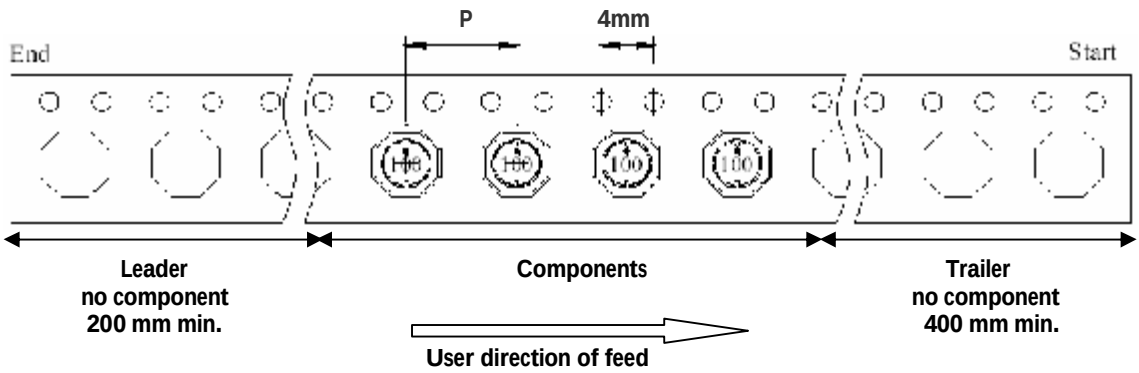
PSB8058



7. Packaging Information



※Carrier tape width : D



Leader
no component
200 mm min.

Components

Trailer
no component
400 mm min.

User direction of feed

(PSB0503, PSB5028, PSB6013, PSB6025 à P = 8mm) (PSB8040, PSB8058 à P = 20mm)

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PSB0503, PSB5028, PSB6013 & PSB6025

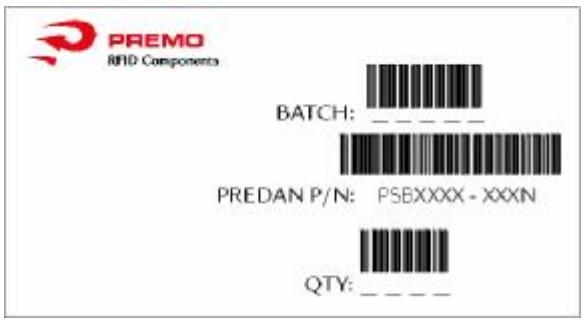
Style	Dimensions [mm]							
	A	B	C	D	G	N	T	
							PSB0503,PSB5028,PSB6025	PSB6013
07 – 12	178	21±0.8	13	12	14^{+0}	50^{-0}	16.5	18.4

PSB8040 & PSB8058

Style	Dimensions [mm]						
	A	B	C	D	G	N	T
13 – 16	330	21±0.8	13±0.5	16	18^{+0}	50^{-0}	22.4

Series	Inner : Reel			Outer : Carton		
	Q'TY(pcs)	G.W.(gw)	Style	Q'TY(pcs)	G.W.(Kg)	Size(cm)
PSB0503	600	185	07 – 12	24,000	8.4	42 x 41 x 24
PSB5028	600	185	07 – 12	32,000	8.4	42 x 41 x 24
PSB6013	1,000	230	07 - 12	40,000	8.5	42 x 41 x 24
PSB6025	600	125	07 – 12	24,000	7.5	42 x 41 x 24
PSB8040	1,200	1,600	13 – 16	7,200	12.1	40 x 40 x 24
PSB8058	800	1,350	13 - 16	4,800	10.5	40 x 40 x 24

8. Labelling



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9. Reliability Test

Test item	Specification	Test condition
Solderability	More than 90% of the terminal electrode shall be covered with fresh solder	Preheat : 150±25% for 60 seconds Solder : Sn96.5 / Ag3 / Cu0.5 or equivalent Solder temp. : 235±5°C Flux : Rosin Dip time : 4±1 seconds
Thermal shock test (Temp. cycle)	Inductance shall not change more than ±30%	Room temp. 15 minutes → -25±2°C 30 minutes Room temp. 15 minutes → 85±2°C 30 minutes Total : 50 cycles
Humidity Resistance test		Temperature : 40±2°C Humidity : 90 ~ 95% Applied current : Per specifications Time : 500 hours
High temp. Resistance test		Temperature : 105±2°C Applied current : Per specifications Time : 500 hours

10. Edition Control

Edition	Date	Change description	Made by
1st	31/08/06	Update Specification	Pablo Pozo

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