

ECN/PCN No.: M1220
For Manufacturer

Product Description: Low Profile Shielded SMD Chip Power Inductor	Abracon Part Number / Part Series: ASPI-0840 Series	<input type="checkbox"/> Documentation only <input checked="" type="checkbox"/> ECN <input type="checkbox"/> EOL	<input checked="" type="checkbox"/> Series <input type="checkbox"/> Part Number(s)
Affected Revision: C	New Revision: D	Application:	<input type="checkbox"/> Safety <input checked="" type="checkbox"/> Non-Safety

Prior to Change:
1.0 Key Electrical Specifications

Part Number ASPI-0840- Inductance Code	Inductance	Inductance Tolerance	DCR	DCR Tolerance	Saturation Current	Temperature Rise Current
Units	μH	%	mΩ	%	A	A
Symbol	L	M, N	DCR		Isat	Irms
ASPI-0840-R50	0.5	N	6	±30%	11.00	8.00
ASPI-0840-R90	0.9	N	7		10.00	7.90
ASPI-0840-1R4	1.4	N	9		8.60	7.50
ASPI-0840-2R0	2.0	N	12		7.00	6.80
ASPI-0840-2R2	2.2	N	12		6.80	6.40
ASPI-0840-3R3	3.3	N	15		6.40	5.80
ASPI-0840-3R6	3.6	N	15		6.00	5.40
ASPI-0840-3R9	3.9	N	15		5.60	5.00
ASPI-0840-4R7	4.7	N	20		5.40	4.50
ASPI-0840-6R8	6.8	N	25		4.40	4.00
ASPI-0840-8R6	8.6	N	30		4.20	3.50
ASPI-0840-100	10	M	31		3.80	3.30
ASPI-0840-150	15	M	50		3.00	2.70
ASPI-0840-220	22	M	66		2.40	2.20
ASPI-0840-330	33	M	110		2.00	2.00
ASPI-0840-470	47	M	150		1.60	1.60
ASPI-0840-680	68	M	200		1.30	1.30
ASPI-0840-101	100	M	310		1.00	1.00
ASPI-0840-121	120	M	350		0.95	0.90
ASPI-0840-221	220	M	630		0.75	0.75

1.1 Test Conditions

1. Isat : Based on inductance change ($\Delta L/L_0 : \leq -30\%$)
2. Irms : Based on temperature rise ($\Delta T : 40^\circ\text{C TYP.}$)
3. Test Freq: 100KHz, 1Vrms

1.2 Operating Temperature

-40°C to +85°C

1.3 Storage Temperature and Humidity (In Tape and Reel)

-10°C to +40°C, 30% to 70% RH

2.0 MSL level: 1

3.0 Part Number Identification

ASPI-0840- -

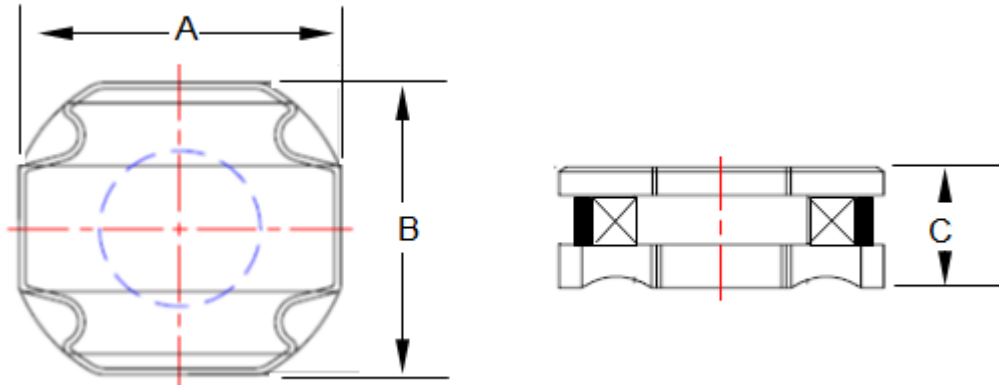
Inductance Code
Please refer to the Electrical Spec Table

Tolerance
N: $\pm 30\%^*$
M: $\pm 20\%^*$

Packaging
T: Tape and Reel (1kpcs / reel)

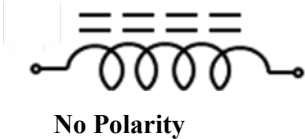
*N for L = 0.5 ~ 8.6 μ H
 *M for L = 10 ~ 220 μ H

4.0 Mechanical and Material Information



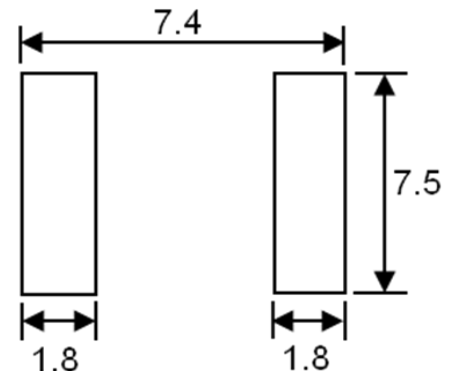
A	B	C
8.0 \pm 0.2	8.0 \pm 0.2	4.0 \pm 0.3

6.1 Circuit Schematic



Dimension: mm

6.2 Recommended Land Pattern



6.3 Material

No	Part Name	Material
1	Ferrite core	Ni-Zn Ferrite
2	Terminals	Ag/Ni/Sn
3	Coil	Cu/P180 Grd 1
4	Adhesive	Silicon Base Resin
	Magnetic Powder	Ni-Zn Ferrite

After Change:

2.0 Key Electrical Specifications

Part Number ASPI-0840- Inductance Code	Inductance	Inductance Tolerance	DCR	DCR Tolerance	Saturation Current	Temperature Rise Current
Units	μH	%	$\text{m}\Omega$	%	A	A
Symbol	L	M, N	DCR		Isat (Max)	Irms (Max)
ASPI-0840-1R0	1.0	N	7	30%	10.15	7.15
ASPI-0840-1R5	1.5	N	10		8.15	5.65
ASPI-0840-2R2	2.2	M	12		8.00	6.48
ASPI-0840-3R3	3.3	M	17		6.50	5.40
ASPI-0840-4R7	4.7	M	19		5.90	4.80
ASPI-0840-6R8	6.8	M	24		4.95	4.59
ASPI-0840-100	10	M	40		4.30	3.50
ASPI-0840-150	15	M	61		2.95	2.95
ASPI-0840-220	22	M	66		2.50	2.50
ASPI-0840-330	33	M	110		2.07	2.07
ASPI-0840-470	47	M	195		1.75	1.75
ASPI-0840-680	68	M	196		1.45	1.45
ASPI-0840-101	100	M	290		1.15	1.15
ASPI-0840-221	220	M	600		0.85	0.80
ASPI-0840-331	330	M	890		0.68	0.68
ASPI-0840-471	470	M	1500		0.55	0.5
ASPI-0840-681	680	M	2040	0.48	0.48	

1.1 Test Conditions

Test Freq: 100KHz, 0.25Vrms

 Isat: The current when the inductance becomes 35% lower than its initial value ($T_a=25^\circ\text{C}$).

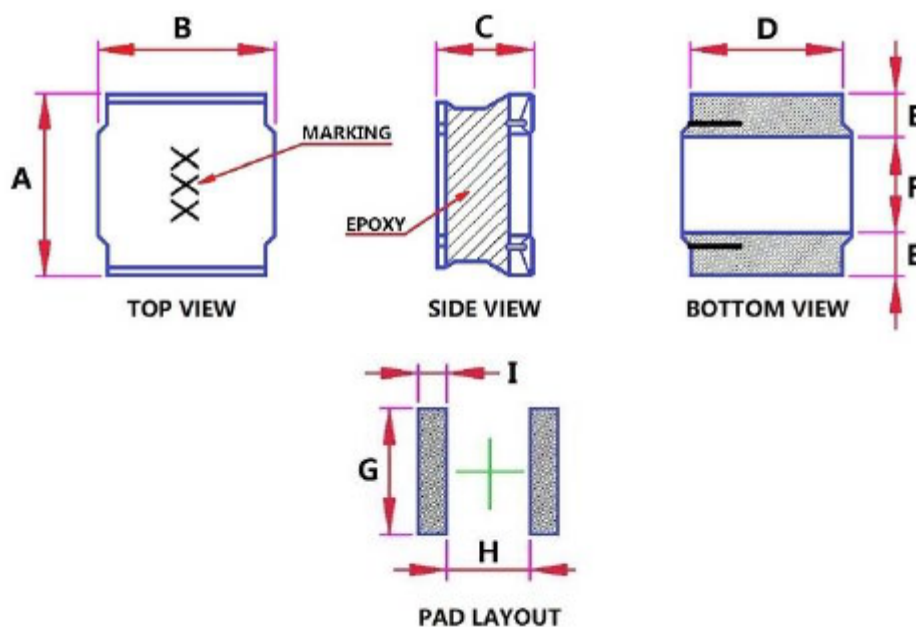
 Irms: The current when temperature of coil increases up to max. $\Delta T=40^\circ\text{C}$ ($T_a=25^\circ\text{C}$).

1.2 Operating Temperature
 -40°C to $+125^\circ\text{C}$
1.3 Storage Temperature and Humidity (In Tape and Reel)
 $<35^\circ\text{C}$ and $<35-65\%$.

5.0 Part Number Identification

 ASPI-0840--

Inductance Code	Tolerance	Packaging
Please refer to the Electrical Spec Table	N: $\pm 30\%$ M: $\pm 20\%$	T: Tape and Reel (1kpcs / reel)

6.0 Mechanical and Material Information


A	B	C	D	E	F	G	H	I
8.0 \pm 0.3	8.0 \pm 0.3	4.20 MAX	6.30	2.45	3.10	6.60	2.80	2.75

Dimension: mm

Cause/Reason for Change:

Moving the series to a new production line. 5 Parts added to series, narrower tolerance on some parts , updated operating and storage temperature, and slightly better current ratings. There is a partial EOL along with this ECN. (Refer to Partial ECN-EOL #M1220 ASPI-0840 Series: <https://abracon.com/downloads/ECN-PCN/Partial-ECN-EOL-M1220-ASPI-0840-Series.pdf>.)

The following parts have been EOL'd:

ASPI-0840-R50N
 ASPI-0840-R90N
 ASPI-0840-1R4N
 ASPI-0840-2R0N
 ASPI-0840-3R6N
 ASPI-0840-3R9N
 ASPI-0840-8R6N
 ASPI-0840-121M

Change Plan

Effective Date:

2/11/2021

Additional Remarks:
Change Declaration:

The change does not affect form fit or function of the series. 5 Parts added to series, narrower tolerance on some parts , updated operating and storage temperature, and slightly better current ratings.

There is a Partial EoL along with this ECN.

(Refer to Partial ECN-EOL #M1220 ASPI-0840 Series: <https://abracon.com/downloads/ECN-PCN/Partial-ECN-EOL-M1220-ASPI-0840-Series.pdf>.)

The following parts have been EOL'd:

ASPI-0840-R50N
 ASPI-0840-R90N
 ASPI-0840-1R4N
 ASPI-0840-2R0N
 ASPI-0840-3R6N
 ASPI-0840-3R9N
 ASPI-0840-8R6N
 ASPI-0840-121M

Issued Date:

2/11/2021

Issued By:

Ahmed Alamin

Issued Department:

Engineering

Approval:

Syed Raza
Engineering VP

Approval:

Reuben Quintanilla
Quality Director

Approval:

Ying Huang
Purchasing Director

For Abracon EOL only

Last Time Buy (if applicable):
Alternate Part Number / Part Series:
Additional Approval:
Additional Approval:
Additional Approval:

Customer Approval (If Applicable)**Qualification Status:** Approved Not accepted*Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.***Customer Part Number:****Customer Project:****Company Name:****Company Representative:****Representative Signature:****Customer Remarks:**