Molded SMD Power Inductor

ASPI-6045T

Request Samples | Check Inventory

6.0 x 6.0 x 4.5 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- Shielded construction
- Soft saturation
- High Saturation Current
- Designed for switching frequencies between 100KHz-2MHz

Applications

- DC/DC Switching converters
- Power supplies for Notebooks, workstations, and Servers
- Low Profile applications
- High current, transient load applications
- Applications requiring extended temperature.

Electrical Specifications

Part Number	Inductance	Self-Resonant Frequency	Tolerance	DC Resistance	Saturation Current	Temperature Rise Current
	0.1MHz/1V			Max	Max	Max
Units	µH	MHz	%	Ω	A	A
Symbol	L	SRF	M, N	DCR	Isat	Irms
ASPI-6045T-R47	0.47	155	N	0.008	15.00	6.50
ASPI-6045T-R56	0.56	142	N	0.008	14.00	6.50
ASPI-6045T-R68	0.68	99	N	0.008	11.00	5.70
ASPI-6045T-R82	0.82	140	N	0.010	10.35	5.90
ASPI-6045T-1R0	1.0	100	N	0.014	9.85	5.14
ASPI-6045T-1R2	1.2	100	N	0.013	8.35	5.40
ASPI-6045T-1R3	1.3	100	N	0.013	8.35	5.40
ASPI-6045T-1R5	1.5	65	N	0.016	8.80	4.95
ASPI-6045T-1R8	1.8	74	N	0.016	7.60	4.95
ASPI-6045T-2R2	2.2	52	N	0.018	6.75	4.60
ASPI-6045T-2R3	2.3	60	N	0.027	6.00	3.50
ASPI-6045T-2R7	2.7	38	N	0.020	5.75	4.30
ASPI-6045T-3R0	3	35	N	0.026	5.60	3.80
ASPI-6045T-3R3	3.3	32	N	0.027	5.90	3.70
ASPI-6045T-3R6	3.6	28	N	0.027	5.25	3.70
ASPI-6045T-4R3	4.3	23	M	0.030	4.45	3.50
ASPI-6045T-4R5	4.5	24	M	0.034	4.97	3.30
ASPI-6045T-4R7	4.7	24	M	0.034	4.97	3.30
ASPI-6045T-5R1	5.1	23	M	0.034	4.40	3.30
ASPI-6045T-5R6	5.6	23	M	0.038	4.15	3.15
ASPI-6045T-6R2	6.2	26	M	0.040	4.43	3.00
ASPI-6045T-6R3	6.3	26	M	0.040	4.43	3.00
ASPI-6045T-6R8	6.8	20	M	0.040	3.90	3.00
ASPI-6045T-7R5	7.5	18	M	0.044	3.50	2.90
ASPI-6045T-8R2	8.2	21	M	0.056	3.90	2.60

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MSL Level = 1

Part Number	Inductance	Self-Resonant Frequency	Tolerance	DC Resistance	Saturation Current	Temperature Rise Current
	0.1MHz/1V			Max	Max	Max
Units	µH	MHz	%	Ω	A	A
Symbol	L	SRF	M, N	DCR	Isat	Irms
ASPI-6045T-9R1	9.1	17	M	0.056	3.35	2.60
ASPI-6045T-100	10	15	M	0.062	3.20	2.45
ASPI-6045T-120	12	13	M	0.075	2.80	2.20
ASPI-6045T-150	15	12	M	0.088	2.50	2.05
ASPI-6045T-180	18	10	M	0.105	2.20	1.85
ASPI-6045T-220	22	10	M	0.116	2.05	1.80
ASPI-6045T-270	27	9.2	M	0.133	1.90	1.65
ASPI-6045T-300	30	7.8	M	0.172	1.70	1.50
ASPI-6045T-330	33	7.8	M	0.178	1.65	1.45
ASPI-6045T-360	36	7.8	M	0.225	1.62	1.40
ASPI-6045T-390	39	7.8	M	0.234	1.50	1.25
ASPI-6045T-430	43	7.7	M	0.260	1.63	1.20
ASPI-6045T-470	47	6.4	M	0.260	1.40	1.20
ASPI-6045T-510	51	6.4	M	0.269	1.35	1.15
ASPI-6045T-560	56	6.4	M	0.287	1.30	1.10
ASPI-6045T-620	62	6.4	M	0.306	1.25	1.10
ASPI-6045T-680	68	6.4	M	0.376	1.20	1.00
ASPI-6045T-750	75	5	M	0.397	1.15	0.95
ASPI-6045T-820	82	4.9	M	0.443	1.05	0.90
ASPI-6045T-910	91	4.9	M	0.467	1.00	0.85
ASPI-6045T-101	100	4.2	M	0.563	0.95	0.80
ASPI-6045T-121	120	4.2	M	0.629	0.85	0.77
ASPI-6045T-151	150	4.2	M	0.754	0.80	0.70
ASPI-6045T-221	220	3.5	M	1.084	0.70	0.59
ASPI-6045T-331	330	2.8	M	1.651	0.57	0.57
ASPI-6045T-471	470	2.0	M	2.340	0.50	0.42
ASPI-6045T-681	680	1.7	M	3.250	0.42	0.33
ASPI-6045T-102	1000	1.4	M	5.850	0.30	0.30
ASPI-6045T-152	1500	0.8	M	8.450	0.24	0.21

Test Conditions

Isat: DC current at which the inductance drops 30% from its value.
Irms: DC current that causes the temperature rise (ΔT, approximate 40 ˚C) from 20°C ambient

Operating Temperature: -40˚C ~ +125˚C (including self-temperature rise)
Storage Condition: -40˚C ~ +125˚C and R.H. 70% max
Operating Voltage: 50V (across inductor)
ASPI-6045T Series is RoHS Compliant and Pb free
MSL level: 1

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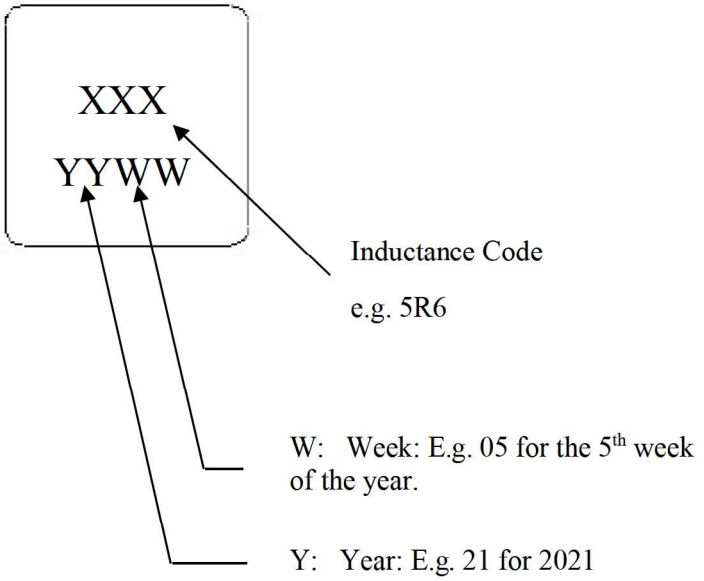
Marking



Marking Method: Ink

Part Identification

ASPI – 6045T - ☐☐ - ☐

Inductance Code	Tolerance	Packaging
See Electrical Specification table	M = ± 20% N = ± 30%	T: Tape and Reel (1.5k pcs / reel)

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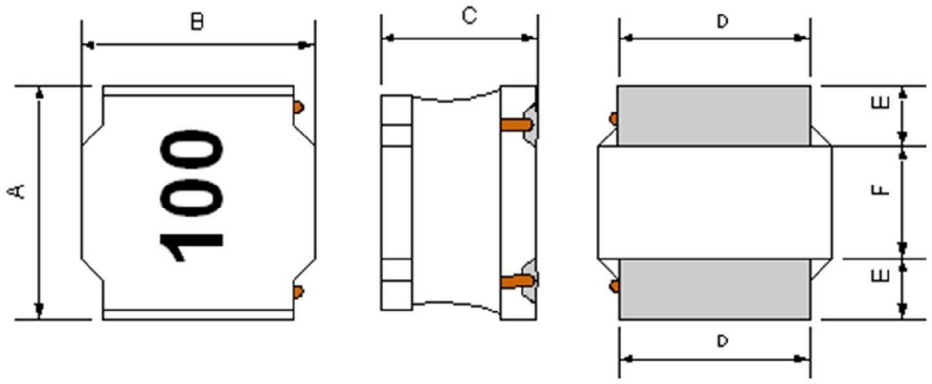
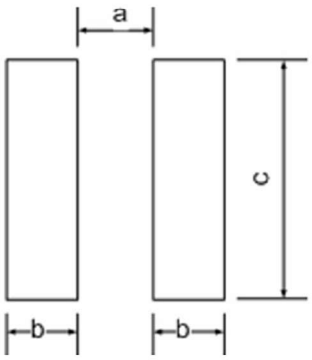
Mechanical Dimensions



Series	A	B	C	D	E	F
ASPI-6045T	6.0 ± 0.3	6.0 ± 0.3	4.5 MAX	4.9 ± 0.3	1.55 ± 0.3	2.9 ± 0.3

Recommended Land Pattern



a	b	c
2.8 Typ..	1.7 Typ.	5.7 Typ.

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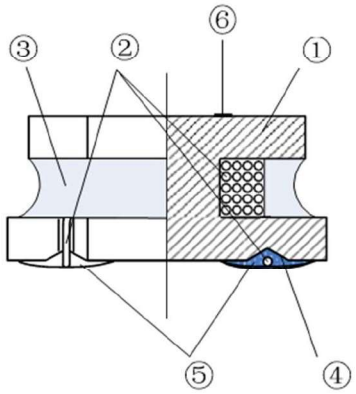
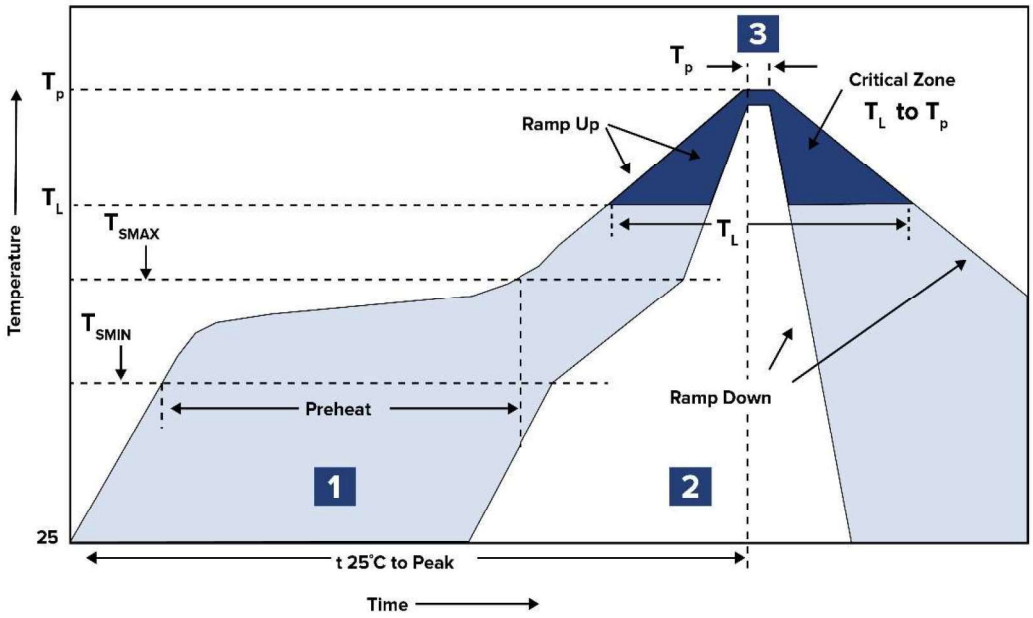
Materials



	Components	Material
1	**Ferrite Core**	Ni-Zn Ferrite
2	**Wire**	Polyurethane enameled copper wire
3	**Magnetic Glue**	Epoxy Resin and magnetic powder
4, 5	**Electrodes**	Ag/Ni/Sn or FeNiCu + Sn Alloy
6	**Marking**	Nitrocellulose

Reflow Profile



Zone	Description	Temperature	Times
1	Preheat	T_{SMIN} ~ T_{SMAX} = 150°C ~ 200°C	60 ~ 120 sec.
2	Reflow	T_L = 217°C	60 ~ 90 sec.
3	Peak heat	T_P = 260°C±5°C	10 sec. MAX

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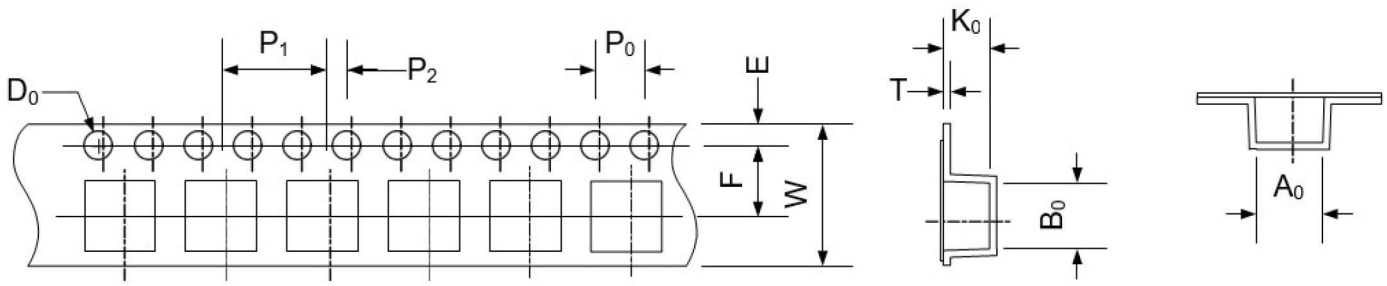
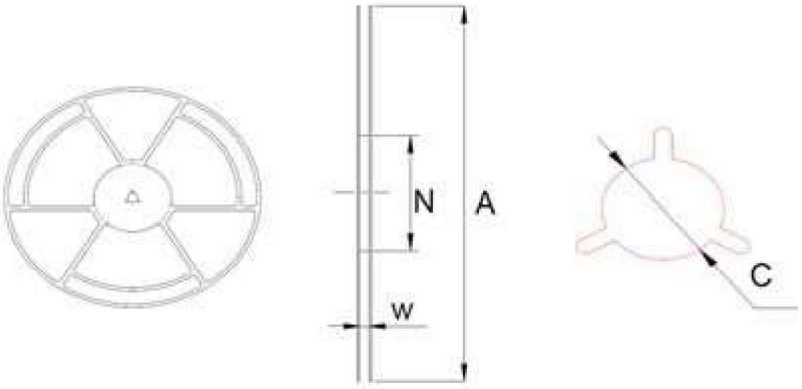
Packaging

Packing (Tape & Reel: 1500 pcs/reel)



A_0	B_0	W	E	F	P_0	P_1	P_2	D_0	T	K_0
6.4±0.1	6.4±0.1	16.0±0.3	1.75±0.1	7.5±0.1	4.0±0.1	8.0.1	2.0±0.1	1.5+0.1/-0.0	0.4±0.03	4.7±0.1



A	N	W	C
330±0.1	100±0.5	22.4 +0.2/-0.0	Ø13 +0.2/-0.0

Dimension: mm

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