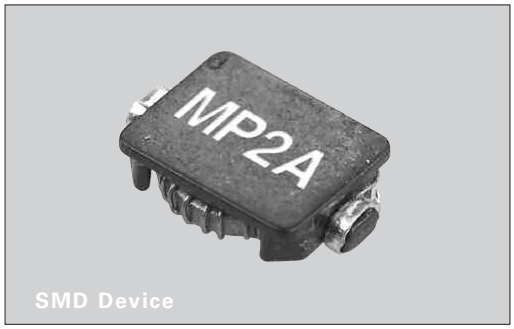
MP2A

MICRO-PAC PLUS™ Low profile toroid power inductors



Product features

- High performance, low profile, surface mount power inductors
- Small footprint and closed magnetic field construction ensure low EMI
- Low DCR and high efficiency
- Frequency range up to 500 kHz
- Molybdenum permalloy (MPP) core material

Applications

- Mobile phones
- Tablets and e-readers
- GPS systems
- Battery power devices
- Notebook and laptop power
- Hand held devices
- Media players

Environmental data

- Storage temperature range (component): -40 °C to +125 °C
- Operating temperature range: -40 °C to +125 °C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 (latest revision) compliant

Pb RoHS

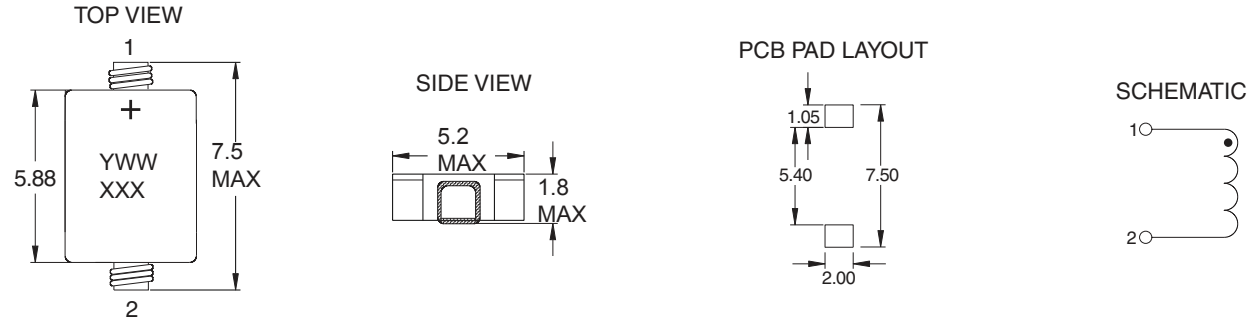
Powering Business Worldwide

Product specifications

Part Number	Inductance µH (rated)	OCL[1] µH±20%	DCR[2] typ. Ω	I RMS[3] (A)	I SAT[4] (A)	Volt[5] µsec
MP2A-R47-R	0.47	0.47	0.024	3.52	5.80	1.20
MP2A-R68-R	0.68	0.68	0.027	3.31	4.83	1.27
MP2A-1R0-R	1.00	1.21	0.067	2.11	3.63	2.00
MP2A-1R5-R	1.50	1.54	0.073	2.02	3.22	2.09
MP2A-2R2-R	2.20	2.30	0.086	1.87	2.64	2.26
MP2A-3R3-R	3.30	3.21	0.098	1.75	2.23	2.42
MP2A-4R7-R	4.70	4.86	0.117	1.60	1.81	2.64
MP2A-6R8-R	6.80	6.85	0.136	1.49	1.53	2.84
MP2A-8R2-R	8.20	8.54	0.167	1.34	1.54	3.15
MP2A-100-R	10.00	10.02	0.179	1.29	1.42	3.26
MP2A-150-R	15.00	15.18	0.217	1.18	1.16	3.59
MP2A-220-R	22.00	21.40	0.311	0.98	0.97	4.30
MP2A-330-R	33.00	32.74	0.476	0.79	0.79	5.32
MP2A-470-R	47.00	46.48	0.727	0.64	0.66	6.57
MP2A-680-R	68.00	68.53	1.108	0.52	0.54	8.11
MP2A-820-R	82.00	81.15	1.463	0.45	0.50	9.32
MP2A-101-R	100.00	99.65	2.015	0.39	0.45	10.94

Notes: (1) Open Circuit Inductance Test Parameters: 100 kHz, .25 Vrms, 0.0 Adc.
(2) DCR limits +20 °C.
(3) RMS current for an approximate ΔT of 40 °C without core loss. It is recommended that the temperature of the part not exceed +125 °C.
(4) Peak current for approximately 30% rolloff at +20 °C.
(5) Applied Volt-Time product (V-µs) across the inductor. This value represents the applied V-µs at 300 kHz necessary to generate a core loss equal to 10% of the total losses for 40 °C temperature rise.

Dimensions- mm

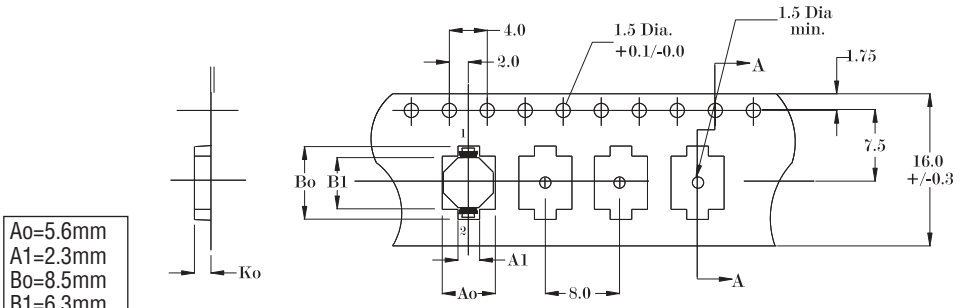


yww = Date Code
xxx = Inductance value per family chart

Do not route traces or vias underneath the inductor

Packaging information- mm

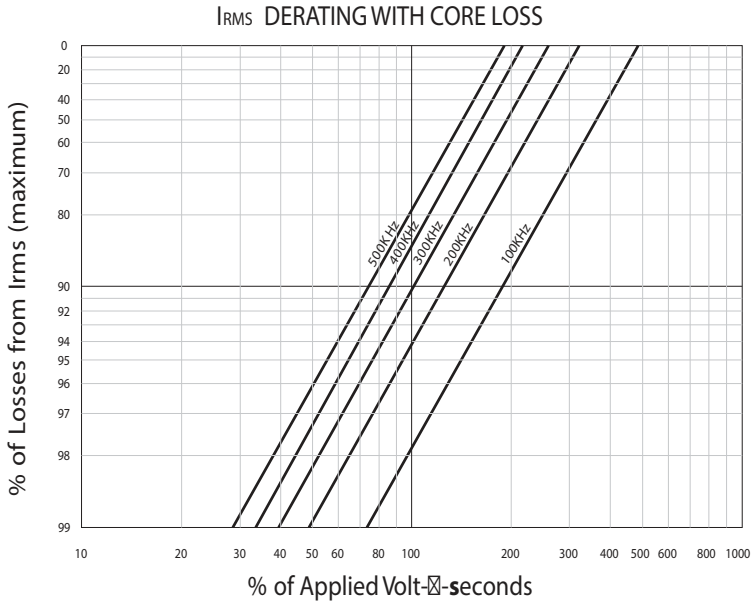
Parts packaged on 13" Diameter reel,
3,900 parts per reel.



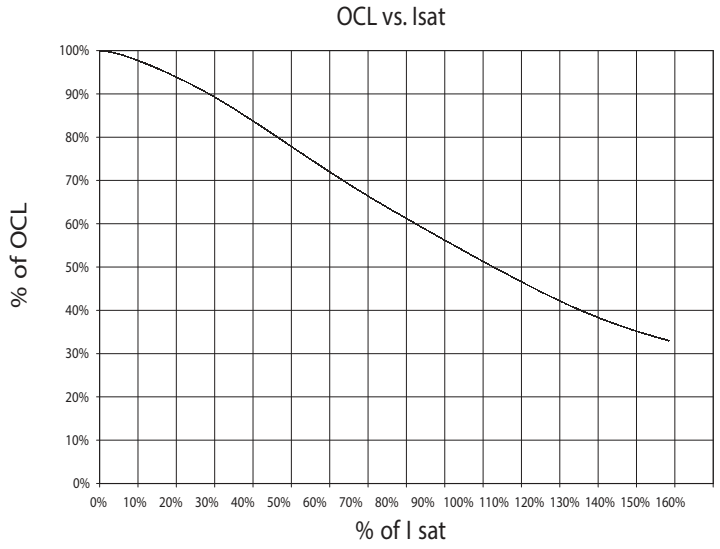
Ao=5.6mm
A1=2.3mm
Bo=8.5mm
B1=6.3mm
Ko=2.1mm

ACTUAL SIZE
MICRO-PAC PLUS

Core loss



Inductance characteristics



Solder Reflow Profile

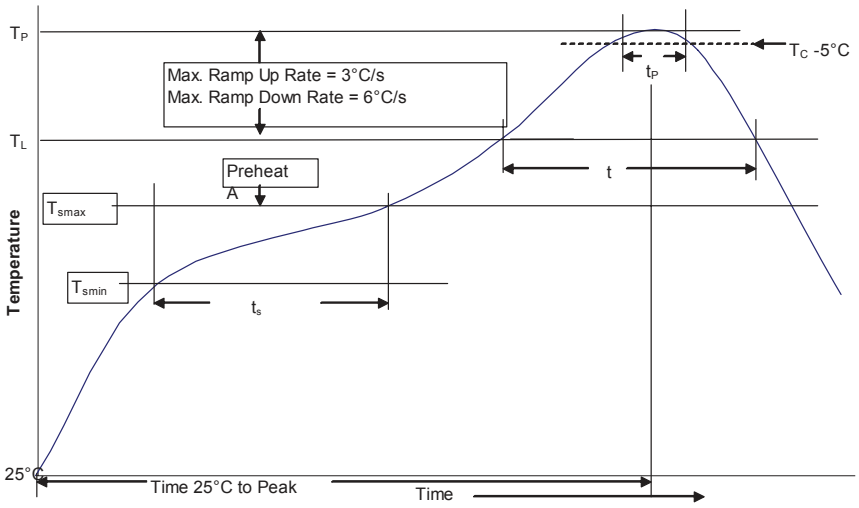


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm³ <350	Volume mm³ ≥350
<2.5mm	235°C	220°C
≥2.5mm	220°C	220°C

Table 2 - Lead (Pb) Free Solder (T_C)

Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Reference JDEC J-STD-020

Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

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