

# 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

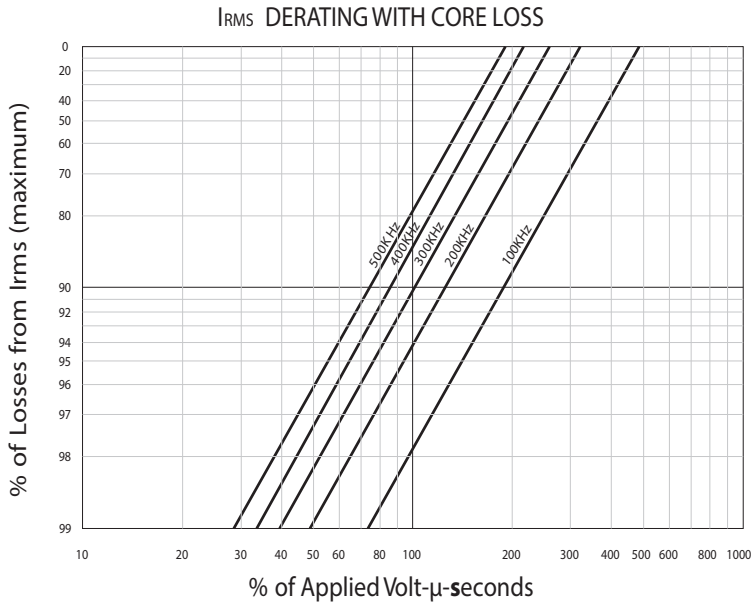
### Environmental data

- 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

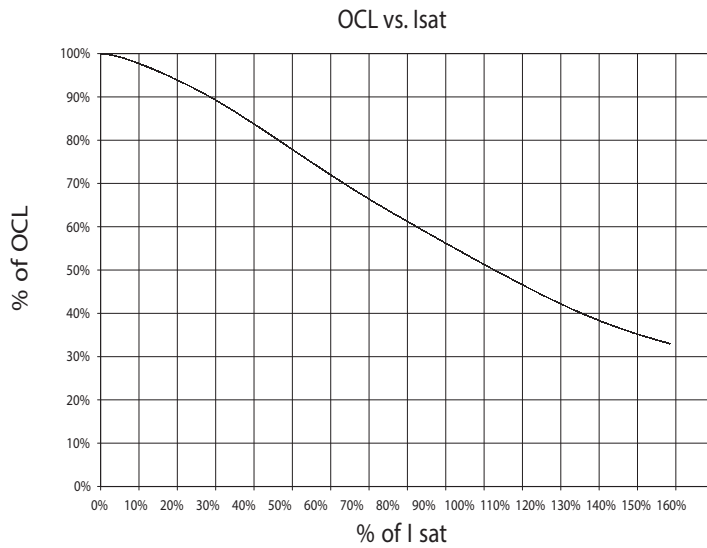




**Core loss**



**Inductance characteristics**



### Solder Reflow Profile

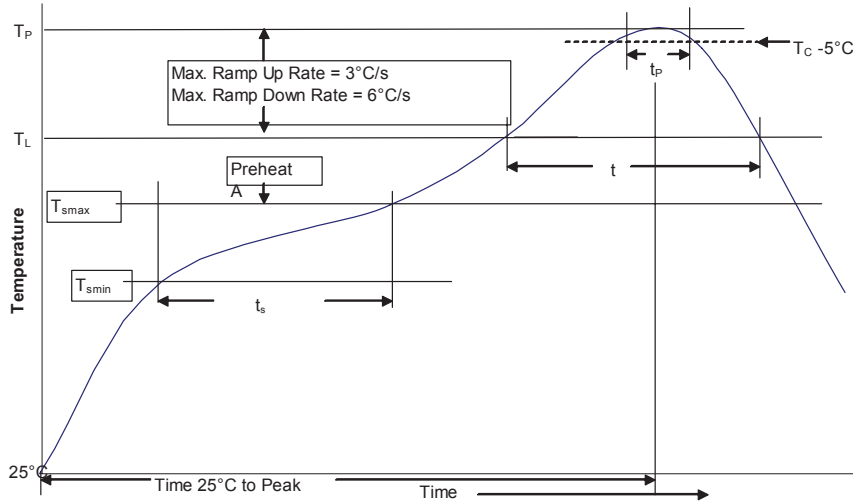


Table 1 - Standard SnPb Solder ( $T_c$ )

Package Thickness	Volume $<350$ mm <sup>3</sup>	Volume $\geq 350$ mm <sup>3</sup>
$<2.5$ mm	235°C	220°C
$\geq 2.5$ mm	220°C	220°C

Table 2 - Lead (Pb) Free Solder ( $T_c$ )

Package Thickness	Volume $<350$ mm <sup>3</sup>	Volume $350 - 2000$ mm <sup>3</sup>	Volume $>2000$ mm <sup>3</sup>
$<1.6$ mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
$>2.5$ mm	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 ( $T_L$ )	183°C	217°C
Time at liquidous ( $t_L$ )	60-150 Seconds	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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