Effective January 2014

MPI2520 High Current, Low Profile, Miniature Power Inductors



Current range from 1.1 to 4.8 amps



Product specifications

Part Number⁵	OCL1 (μH)±20%	l _{rms} ² (Amps)	l _{sat} ³ (Amps)	DCR (mΩ) @ 25°C typical	DCR (mΩ) @ 25°C max	K-Factor⁴					
R0 —1.0mm Height											
MPI2520R0-R47-R	0.47	4.1	4.4	28	34	2887					
MPI2520R0-1R0-R	0.9	3.2	3.2	50	60	1925					
MPI2520R0-1R5-R	1.5	2.4	2.6	80	96	1444					
MPI2520R0-2R2-R	2.2	2.2	2.4	103	124	1283					
MPI2520R0-3R3-R	3.3	1.6	1.6	190	228	1050					
MPI2520R0-4R7-R	4.7	1.4	1.4	240	288	825					
R1 - 1.2mm Height											
MPI2520R1-R47-R	0.47	4.5	4.8	20	24	2310					
MPI2520R1-1R0-R	1.0	3.7	4.0	35	42	1925					
MPI2520R1-1R5-R	1.5	2.9	5.2	55	66	1444					
MPI2520R1-2R2-R	2.2	2.3	2.1	75	90	1255					
MPI2520R1-3R3-R	3.3	1.8	2.4	105	126	962					
MPI2520R1-4R7-R	4.7	0.6	.9	150	180	92t					
MPI2520R1-5R6-R	5.5	1.5	1.5	200	240	67J					
MPI2520R1-6R8-R	68	1.3	1.3	300	360	679					
MPI2520R1-100-R	10.0	1.1	1.2	390	165	525					

ndustance (OCL) Test Parameters 1. Ope. Circuit WHz, 0.1Vrms, 0.0Ac , 25 C

 I_{ms}: DC current for an approximative perature rise of 40°C without ore loss. Derating is necessity fir 10° currents. PCB layout trace thiskness and width, air-flow, and proximity of other heat generating components will affect the temperature is used a trace because of the part of the part of the part. not exceed 125°C under worst case operating conditions verified in the end Recomment MP125-V1 application.

3. Isa: Peak current for approximative 10% rolloff at +2

K-factor Us to to determine $B_{_{\rm PP}}$ for core loss (see graph). $B_{_{\rm PP}}$ (K $_{\rm L}$) A, $B_{_{\rm PP}}$:(Gauss), K: (K-factor from table), L: (In uctance in µH), AI (Peak to peak ripple current in Amps).

Part Number Definition: MPI2520Rx-yyy-R 5.

MPI2520Rx = Product code and size

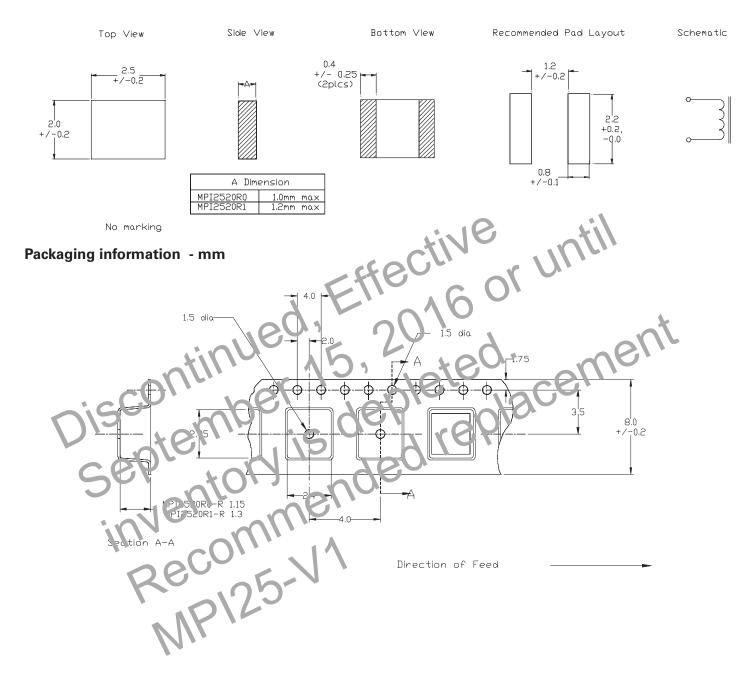
, yyy = Inductance value in μ H, R = decimal point, if no R is present then third character = number of zeros.

- "-R" suffix = RoHS compliant

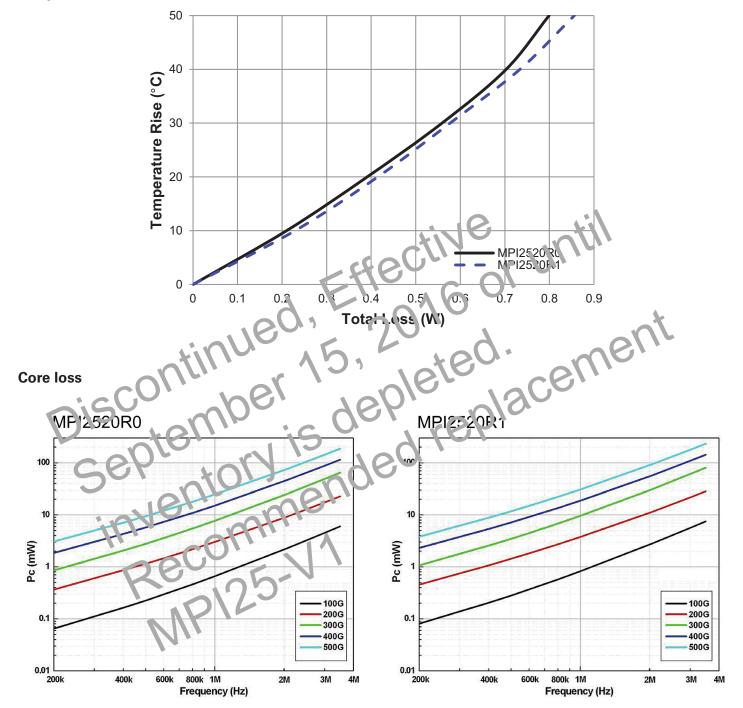
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Dimensions - mm

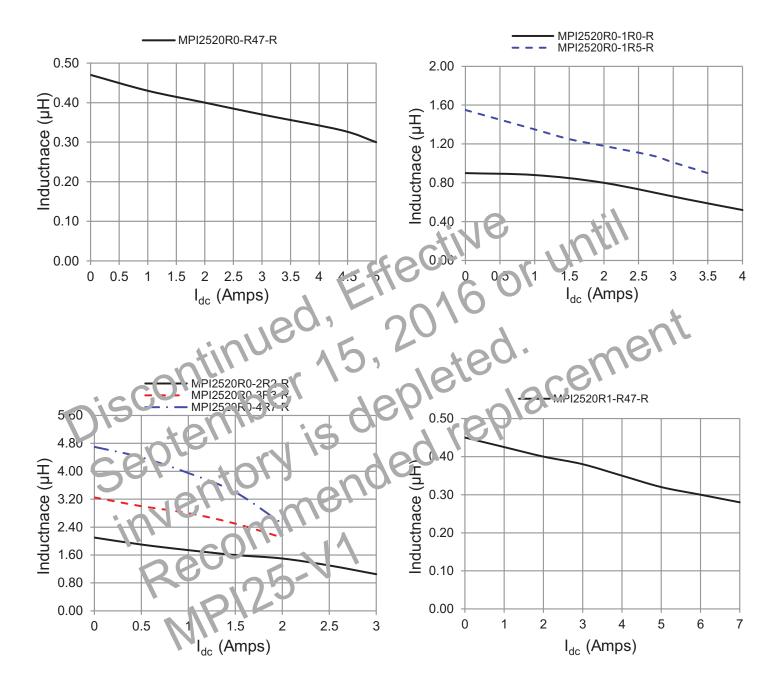


Temperature rise vs. total loss

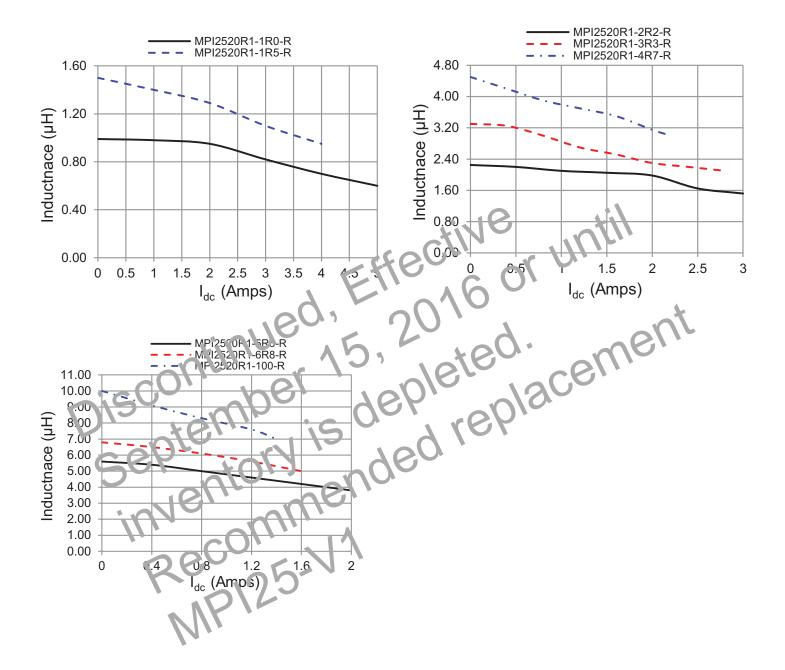


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Inductance characteristics



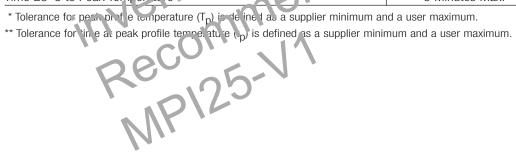
Inductance characteristics



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Solder reflow profile

Tp		Table 1 - Sta	andard SnF	b Solder (T _c)						
TL Preheat		Package Thickness <2.5mm ≥2.5mm	Volume mm ³ <350 235°C 220°C	Volume mm³ ≥350 220°C 220°C						
		Table 2 - Lead (Pb) Free Solder (T _c)								
T _{smin} T _{smin} t _s		Package Thickness <1.6mm	Volume mm ³ <350 260°C	Volume mm ³ 350 - 2000 260°C	Volume mm ³ >2000 260°C					
	tive	1.6 – 2.5mn >2.5mm		250°C 250°C 245°C	245°C 245°C 245°C					
25° Time 25°C to Peak Time										
Profile Feature		Standard SnPb Solder		Lead (Pb) Free Solder						
Preheat and Soak • Temperature min. (cmin)		100°C		150°C						
• Ten nera ure max. (T _{smax})		50°C		200°C						
• Fin e T _{smin} to T _{smax} , (t _s)		60 120 Seconds		60-120 Seconds						
Average ramp ur hate T _{smax} to Tp		3°C/ Second Mar.		3°C/ Second Max.						
Liquidous temperature (TL) Timu at liquidous (tL)		103 CO 00-1:0 Seconds		217°C 60-150 Seconds						
Peak package body tombe at re (Tp)*	Table	Table 1		Table 2						
Time $(t_p)^{**}$ with n 5 °C of the specified class if cation temperature (T_c)	20 Seco	20 Seconds**		30 Seconds**						
Average ramp - cown rate (Tp to Ts m. x)	6°C/ Seco	6°C/ Second Max.		6°C/ Second Max.						
Time 25°C to Peak Temper ture	6 Minute	6 Minutes Max.		8 Minutes Max.						
* Tolerance for nect prof. e. congrature (T.) is defined as a supplier minimum	and a usor maximur	n								



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