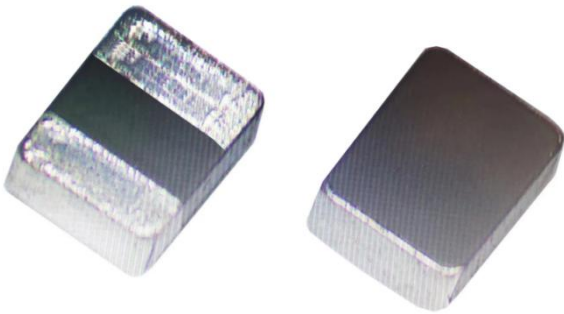


[illegible]

High Current, Power Inductors

MATB-322512-XXX-M-6A Power Choke



Description

- AEC-Q200 qualified
- Halogen Free
- 165°C maximum total temperature operation
- 3.4 x 2.7 x 1.2mm maximum surface mount package
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- RoHS compliant

Applications

- Automotive applications

Environmental Data

- Storage temperature range: -55°C to +165 °C
- Operating temperature range: -55°C to +165°C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 compliant

Description														
MATB-322512-R47-M-6A						0.47μH			±20 %					
Model						Inductance Value			Inductance Tolerance					
Global Part Number														
M	A	T	B	3	2	2	5	1	2	R	4	7	M	6A
Product Series				Dimensions					Inductance	Value	Tolerance		Automotive	

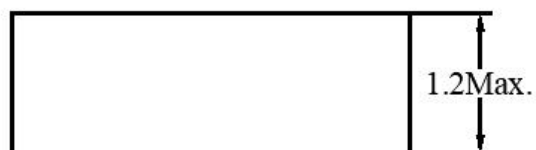
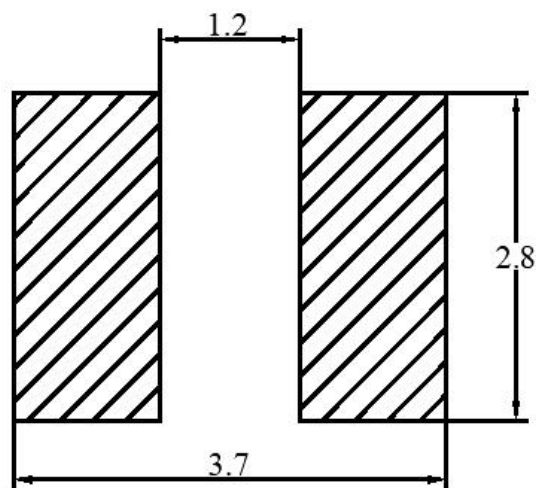
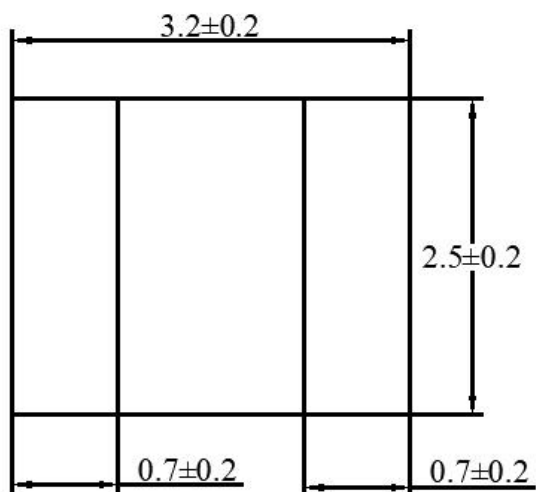


Part No.	Inductance	DC Resistance		Heating Rating Current		Saturation Current	
	L0 (μH)	DCR (mΩ)		Idc (A)		Isat (A)	
	±20 %, 1MHz, 1V	TYP.	MAX.	TYP.	MAX.	TYP.	MAX.
MATB-322512-R47-M-6A	0.47	18.0	22.0	5.1	4.6	8.2	7.0
MATB-322512-1R0-M-6A	1.0	30.0	36.0	3.9	3.6	5.2	4.5
MATB-322512-2R2-M-6A	2.2	62.0	75.0	2.8	2.5	3.8	3.3
MATB-322512-4R7-M-6A	4.7	150.0	180.0	1.8	1.6	2.5	2.2

Notes

1. All test data is referenced to 25°C ambient
2. Operating temperature range - 55°C to + 165°C
3. Idc(A):DC current (A) that will cause an approximate ΔT of 40°C (reference ambient temperature is 25°C)
4. Isat(A):DC current (A) that will cause L0 to drop approximately 30%
5. The part temperature (ambient + temp rise) should not exceed 165 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
6. The rated current as listed is either the saturation current or the heating current depending on which value is lower.

• Dimensions-mm

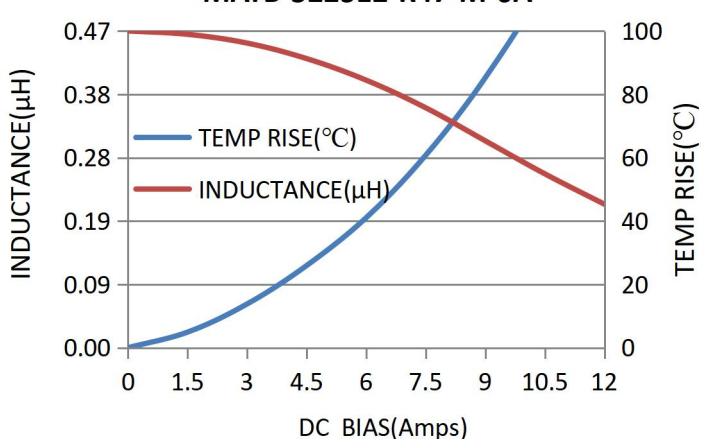
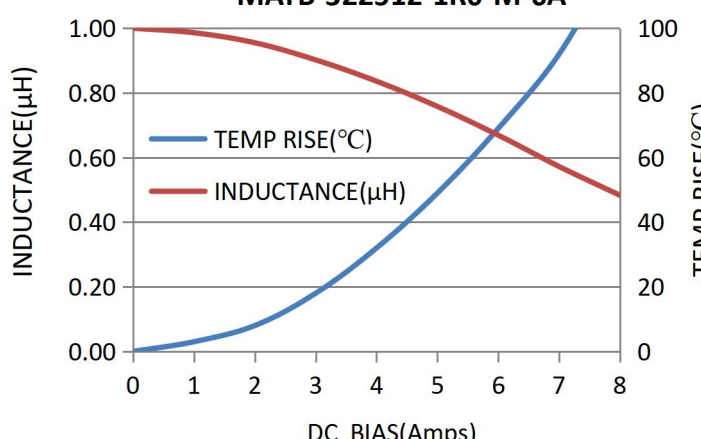
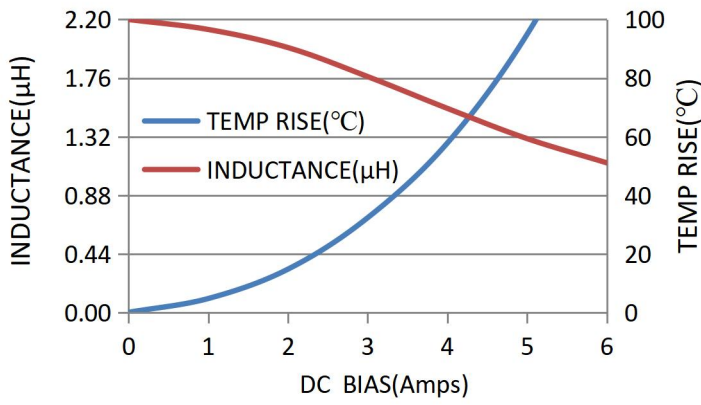
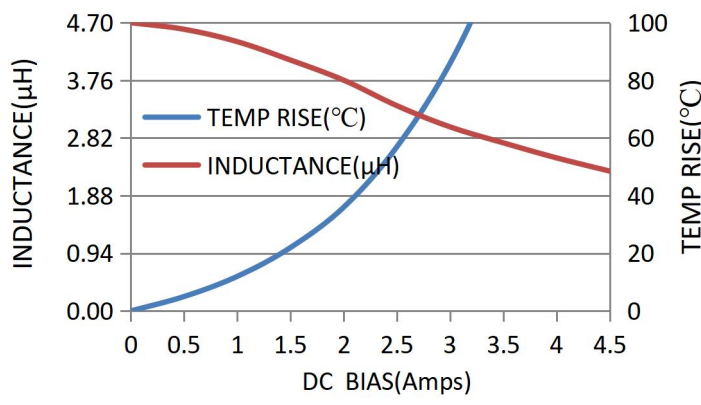


Notes

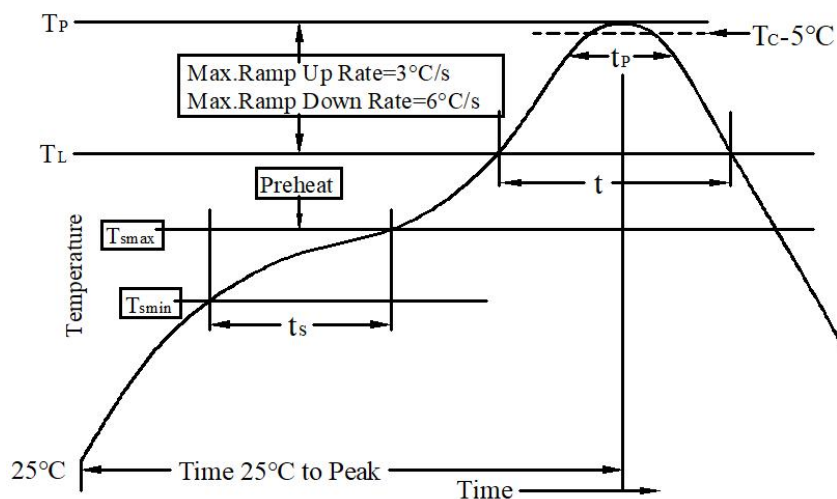
1. Tolerances are ± 0.1 millimeters unless stated otherwise
2. Dimensions of recommended PCB layout are reference only.
3. Do not route traces nor place vias underneath the inductor. Proper layout is required.

• NO Marking

Performance Graphs

Test Instruments	Test Condition
Wayne kerr 3260B/G LCR Meter Wayne kerr 3265B Bias Current Source	Temperature: $26 \pm 3^{\circ}\text{C}$ Humidity: < 70% RH Frequency: 1MHz, 1.0V
MATB-322512-R47-M-6A 	MATB-322512-1R0-M-6A 
MATB-322512-2R2-M-6A 	MATB-322512-4R7-M-6A 

• Solder Reflow Profile


Table 1-Standard SnPb Solder(T_c)

Package Thickness	Volume mm^3 <350	Volume mm^3 <350
<2.5mm	235°C	220°C
$\geq 2.5mm$	220°C	220°C

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

Package Thickness	Volume mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >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

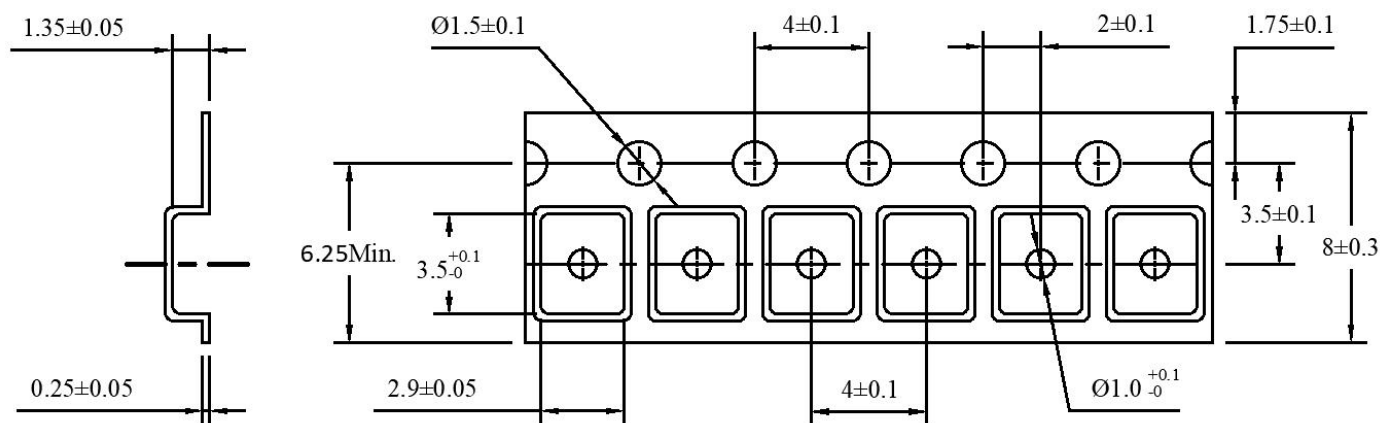
Reference JDEC J-STD-020

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)	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.

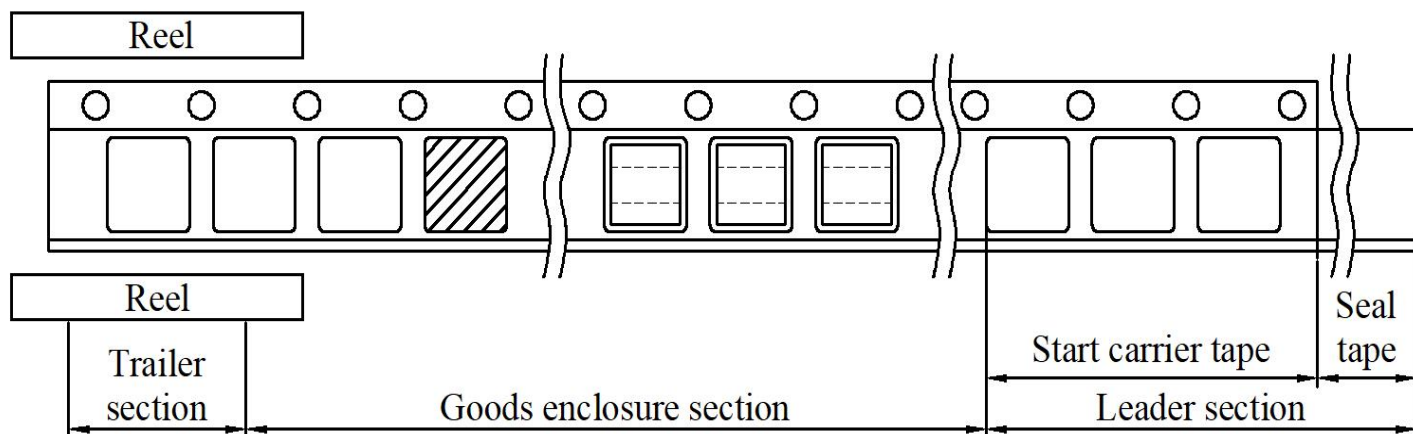
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

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

Tape Packaging Dimensions-mm

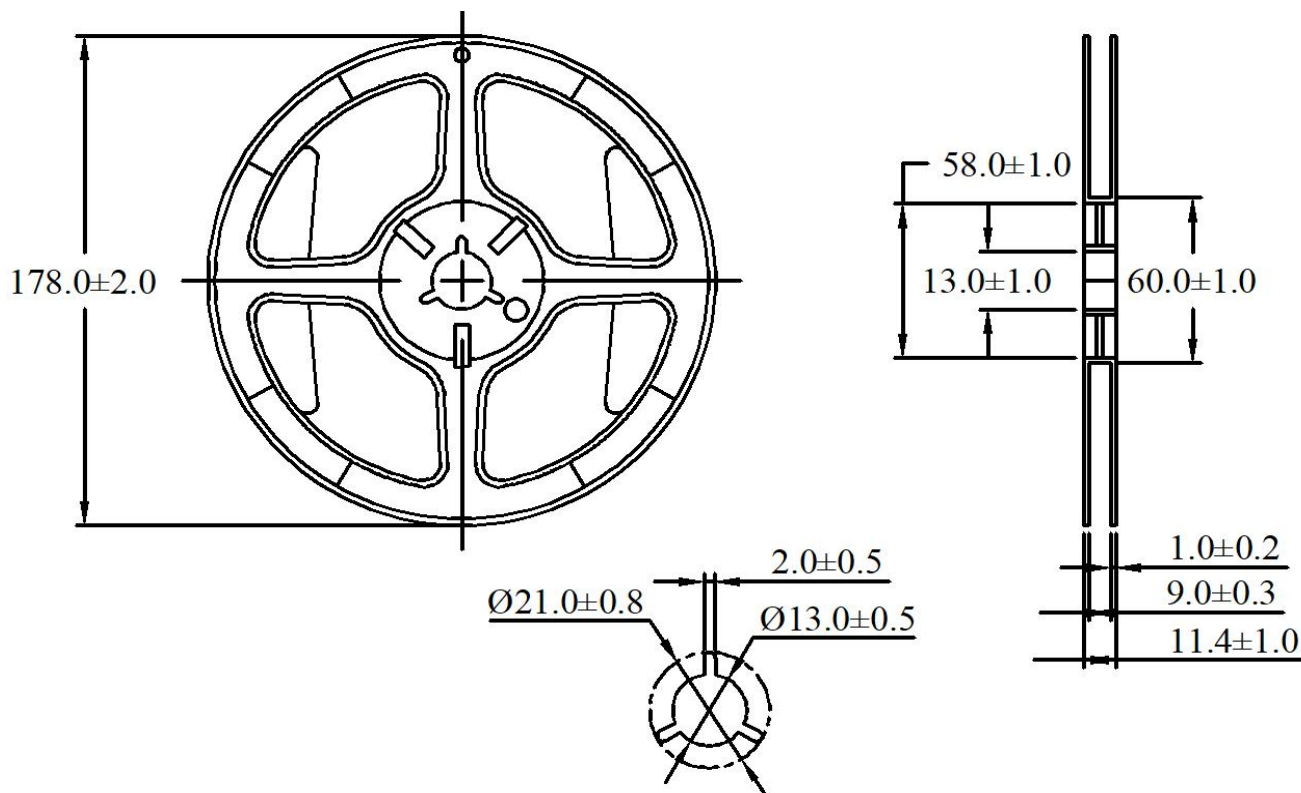


Taping dimension and tape direction,Leader ,Trailer,section dimension



Leader section	Min.400mm
Carrier tape start size	Min.100mm
Trailer section size	Min.160mm

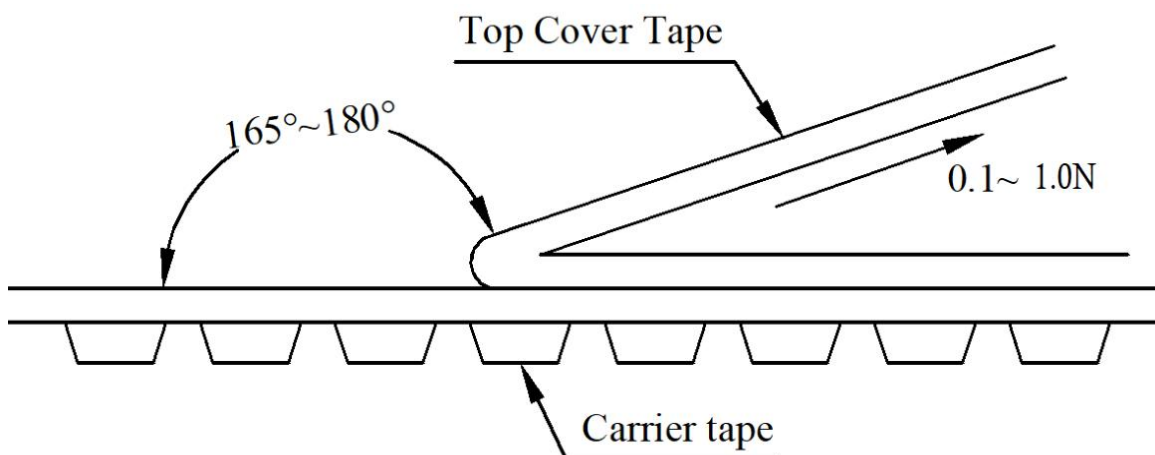
Reel Dimensions-mm



• Peel force of top cover tape

The peel speed shall be about 300mm/minute

The peel force of top cover tape shall be between 0.1 to 1.0 N



• Numbers of taping

3000pieces/reel