



深圳市佑驰电子有限公司

Specification for Approval

产品名称: 一体系列电感

规格型号: HCMA-1350-XXX-M11-5A

产品编号: _____

日期: 2020-08-15

- 1、本承认书的内容更改需经过双方确认，任一方单独的修改均视为无效。
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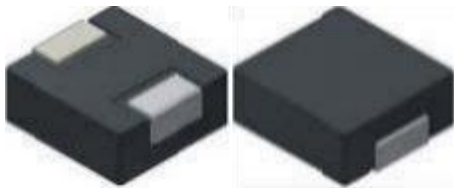
	审核	制作

批准	审核	检验



REVISION					
REV	DESCRIPTION	DATE	DESIGNED	CHECKED	APPROVED
A0	文件建立	2020/08/15	吕秀秀	Bowen	Darren

High Current, Power Inductors
HCMA-1350-XXX-M11-5A Power Choke



Description

- Halogen Free
- 125 °C maximum total temperature operation
- Powder iron core material
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- Frequency range up to 5 MHz
- RoHS compliant

Applications

- Voltage Regulator Module (VRM)
- Multi-phase regulators
- Point-of-load modules
- Smart phone POL modules
- SSD modules
- Notebook regulators
- Battery power systems
- Graphics cards
- Data networking and storage systems

Environmental Data

- Storage temperature range: -55 °C to +125 °C
- Operating temperature range: -55 °C to +125 °C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 D complian

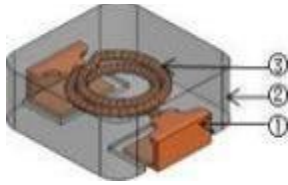
Description												
HCMA-1350-1R0-M11-5A				1.0 μH			±20 %					
Inductance Value						Inductance Tolerance						
Global Part Number												
H	C	M	A	1	3	5	0	1	R	0	M11	5A
Product Series				Dimensions				Inductance Value		Tolerance		Automotive

Part Number	Inductance	DC Resistance		HeatingRatingCurrent	Saturation Current
	L0 (μH)	DCR (mΩ)		Idc (A)	Isat (A)
	±20 %, 1MHz, 0. 1V	Typ	Max	Typ	Typ
HCMA-1350-R10-M11-5A	0.10	0.33	0.38	54.0	100.0
HCMA-1350-R22-M11-5A	0.22	0.54	0.62	48.0	85.0
HCMA-1350-R33-M11-5A	0.33	0.60	0.69	46.0	66.0
HCMA-1350-R47-M11-5A	0.47	0.78	0.90	43.0	64.0
HCMA-1350-R56-M11-5A	0.56	1.15	1.32	36.0	62.0
HCMA-1350-R68-M11-5A	0.68	1.17	1.35	36.0	60.0
HCMA-1350-R82-M11-5A	0.82	1.4	1.6	31.0	45.0
HCMA-1350-1R0-M11-5A	1.0	1.8	2.0	26.0	39.5
HCMA-1350-1R5-M11-5A	1.5	2.7	3.1	23.0	39.0
HCMA-1350-1R8-M11-5A	1.8	3.3	3.8	21.5	35.0
HCMA-1350-2R2-M11-5A	2.2	4.0	4.6	21.0	28.0
HCMA-1350-3R3-M11-5A	3.3	6.0	6.9	16.0	24.0
HCMA-1350-4R7-M11-5A	4.7	8.0	9.2	14.0	20.5
HCMA-1350-5R6-M11-5A	5.6	10.5	12.0	12.0	20.0
HCMA-1350-6R0-M11-5A	6.0	11.0	12.5	12.0	19.5
HCMA-1350-6R8-M11-5A	6.8	12.0	13.5	11.5	16.5
HCMA-1350-7R8-M11-5A	7.8	15.0	17.0	10.0	16.0
HCMA-1350-8R2-M11-5A	8.2	16.0	18.5	9.0	15.0
HCMA-1350-100-M11-5A	10.0	18.5	21.5	8.5	14.0
HCMA-1350-120-M11-5A	12.0	19.5	22.5	8.2	13.5
HCMA-1350-150-M11-5A	15.0	22.5	26.0	7.8	10.0
HCMA-1350-220-M11-5A	22.0	34.5	39.5	6.5	8.2
HCMA-1350-330-M11-5A	33.0	50.0	57.5	5.5	7.5

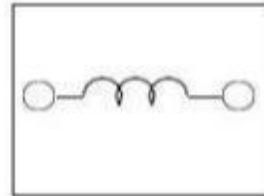
Notes

- All test data is referenced to 25 °C ambient
- Operating temperature range - 55 °C to + 125 °C
- Idc(A) :DC current (A) that will cause an approximate ΔT of40 °C(reference ambient temperature is25°C)
- Isat(A) : DC current (A) that will cause L0 to dropapproximately30 %
- The part temperature (ambient + temp rise) should not exceed 125 °C underworst 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 applicat

1.6 MATERIAL LIST



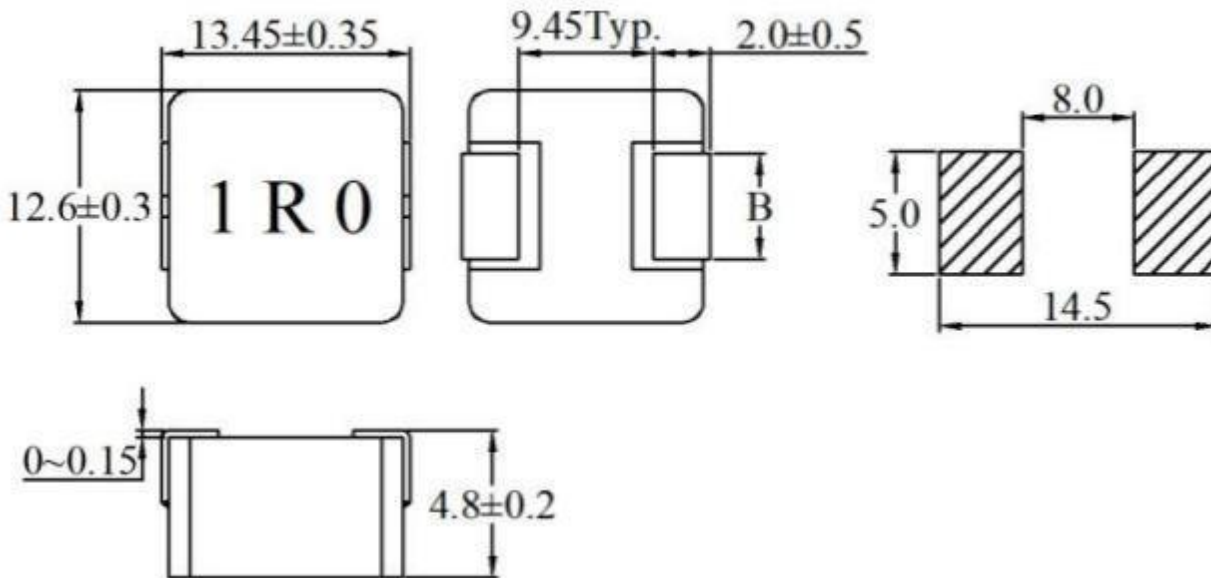
1.7 SCHEMATICS



NO.	Part Name	Material	
1	Electrode	Copper wire+Solder	0.1~2.2 μ H
		Cu+Sn plating C1100R, Sn:Min.8 μ m	3.3~33.0 μ H
2	Core	Metal composite core	
3	Coil	Copper wire, 220°C	
4	Epoxy(six side)	Min.0.02mm	

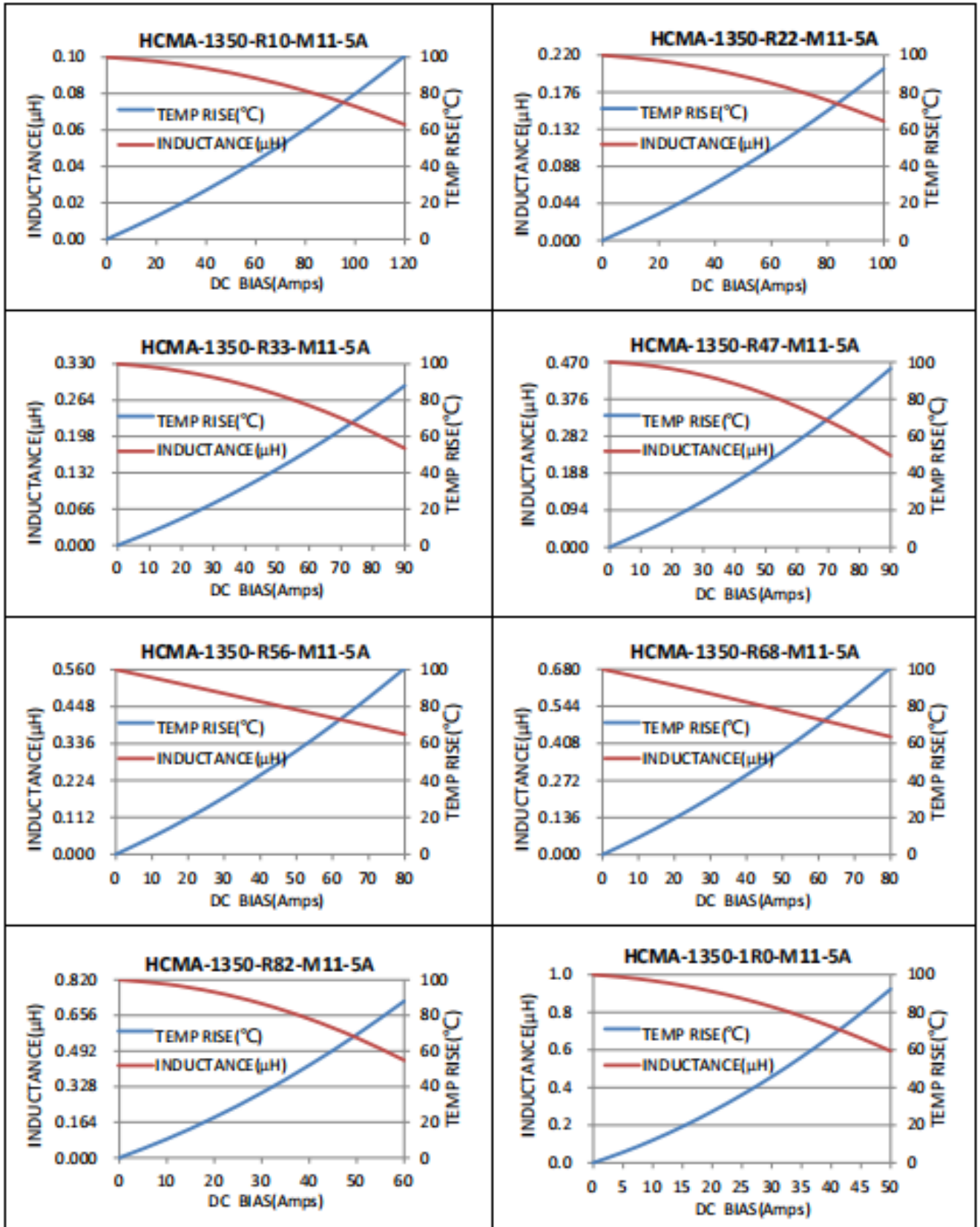
1.8 MECHANICAL PARAMETERS-mm

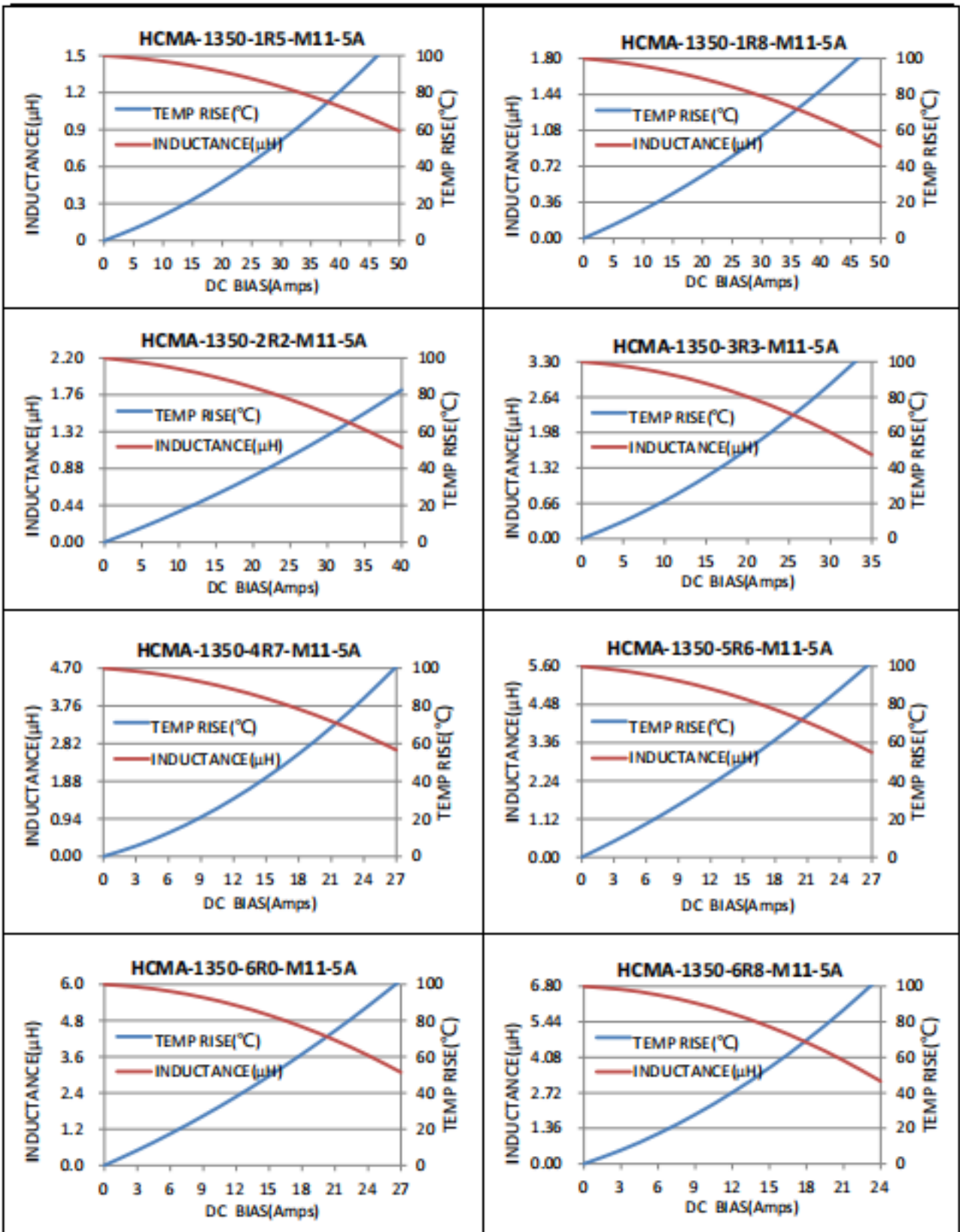
1.9 RECOMMENDED PCB LAYOUT-mm

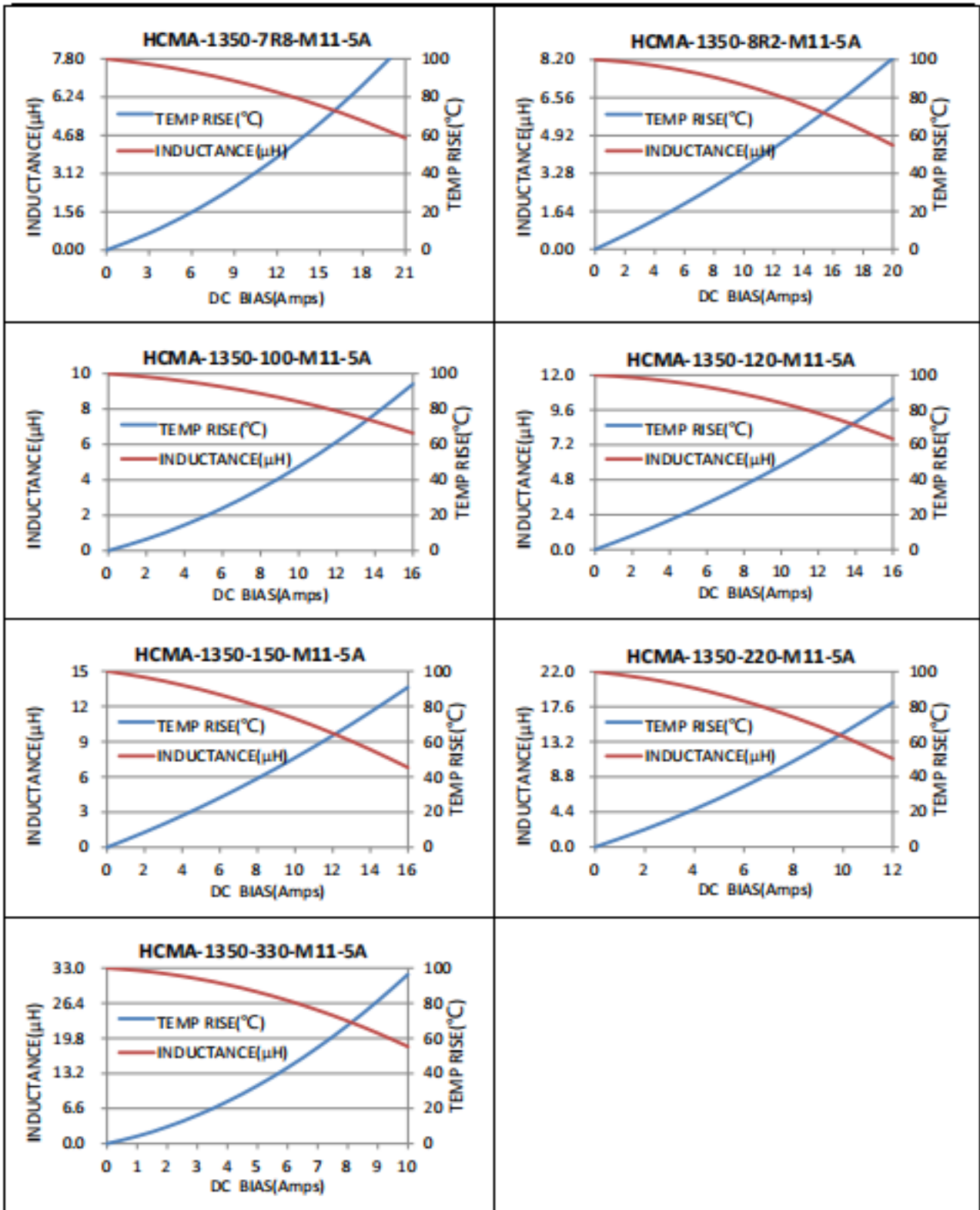


	Dimensions	
Code	0.10~2.2 μ H	3.3~33.0 μ H
B	3.68 ±0.3	4.8 ±0.3

2. INDUCTANCE & TEMPERATURE RISE VS IDC







3.REFLOW PROFILE

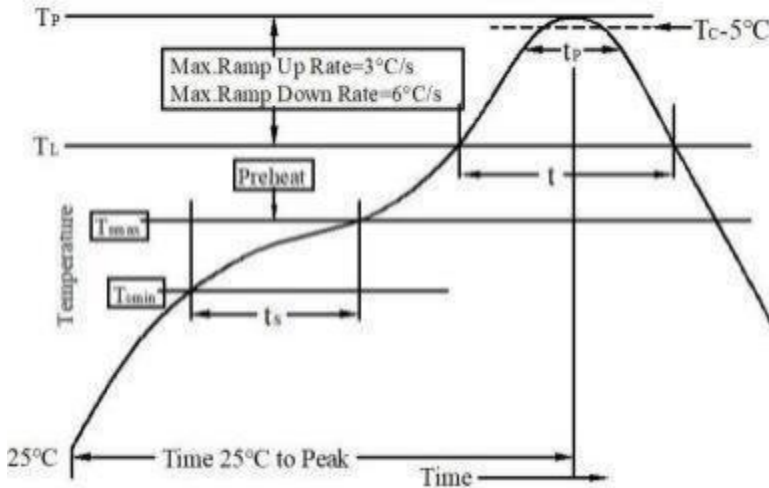


Table 1-Standard SnPb Solder(T_c)

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

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

Package Thickness	Volume mm^3	Volume mm^3	Volume mm^3
$< 1.6\text{mm}$	< 350	350-2000	> 2000
$< 1.6\text{mm}$	260°C	260°C	260°C
1.6-2.5mm	260°C	250°C	245°C
$> 2.5\text{mm}$	250°C	245°C	245°C

Reference JDEC J-STD-020

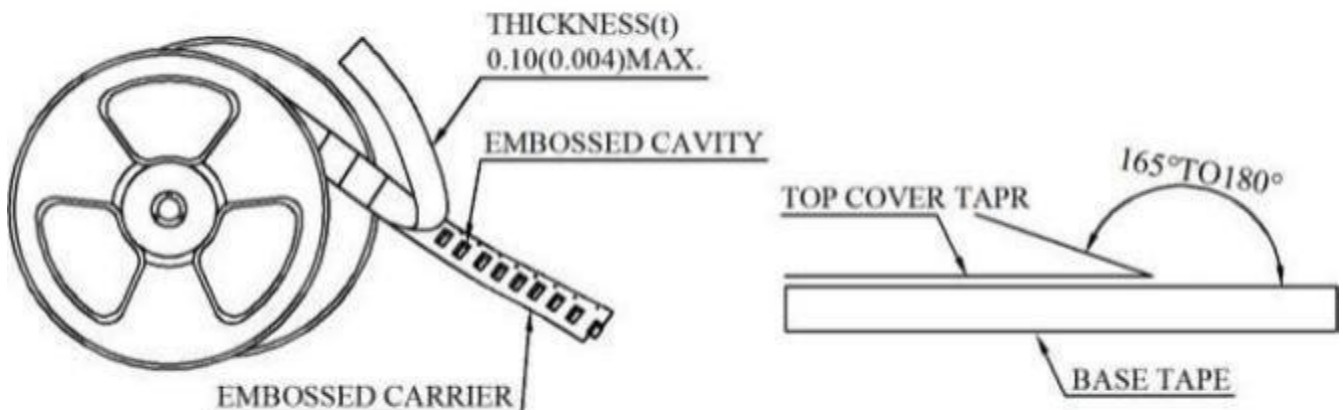
Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak		
• Temperature min. (T_{min})	100°C	150°C
• Temperature max. (T_{max})	150°C	200°C
• Time (T_{min} to T_{max})(t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{max} to T_p	$3^\circ\text{C}/\text{Second Max.}$	$3^\circ\text{C}/\text{Second Max.}$
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_{max})	$6^\circ\text{C}/\text{Second Max.}$	$6^\circ\text{C}/\text{Second Max.}$
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.

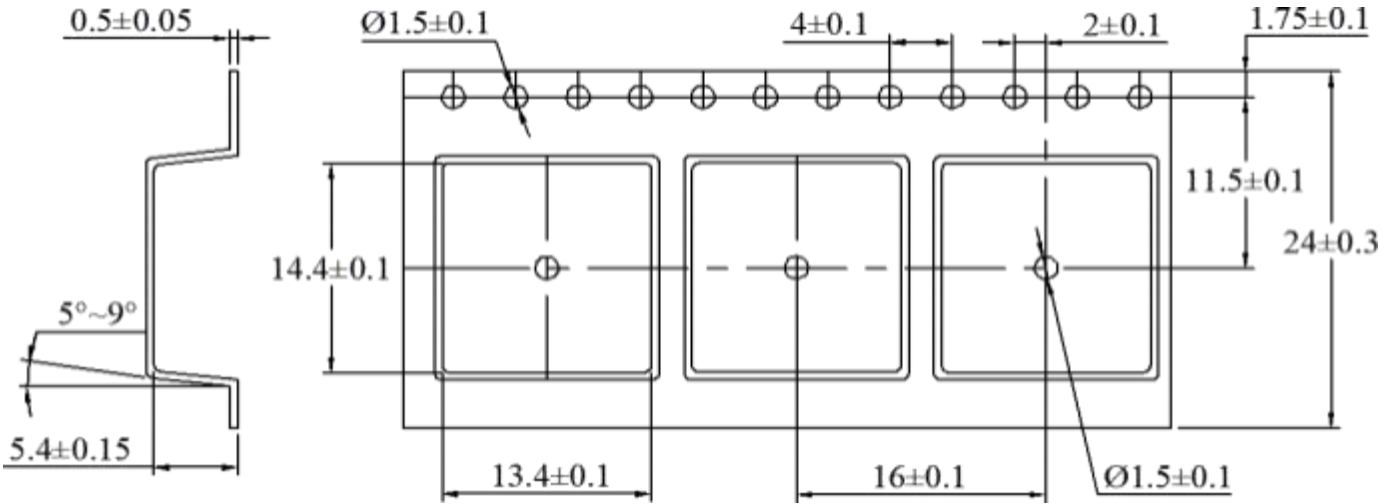
4.PACKAGE INFORMATION-mm

Peel-off Force

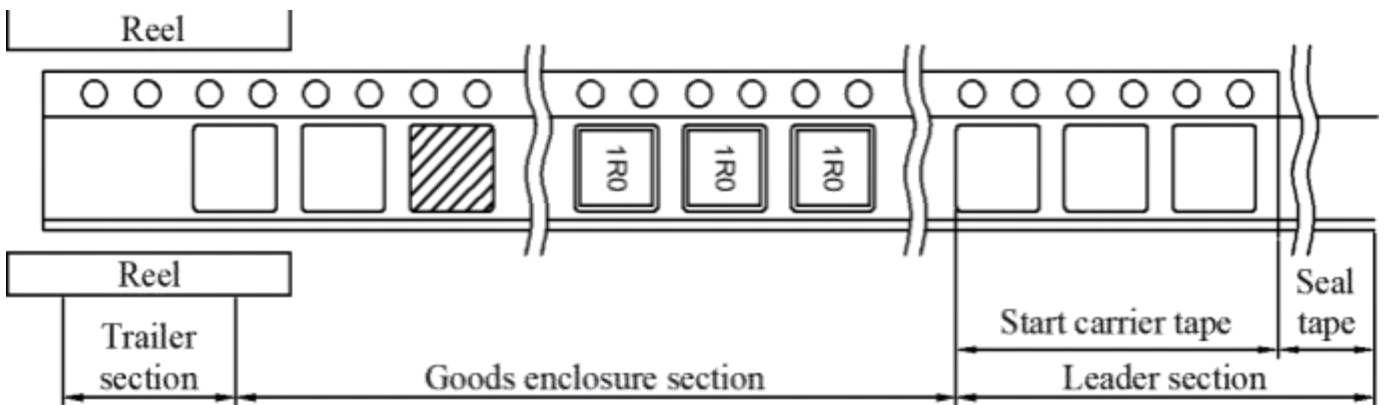


The force for peeling off cover tape is 10 to 130 grams in the arrow direction

4.1 Tape Packaging Dimensions-mm

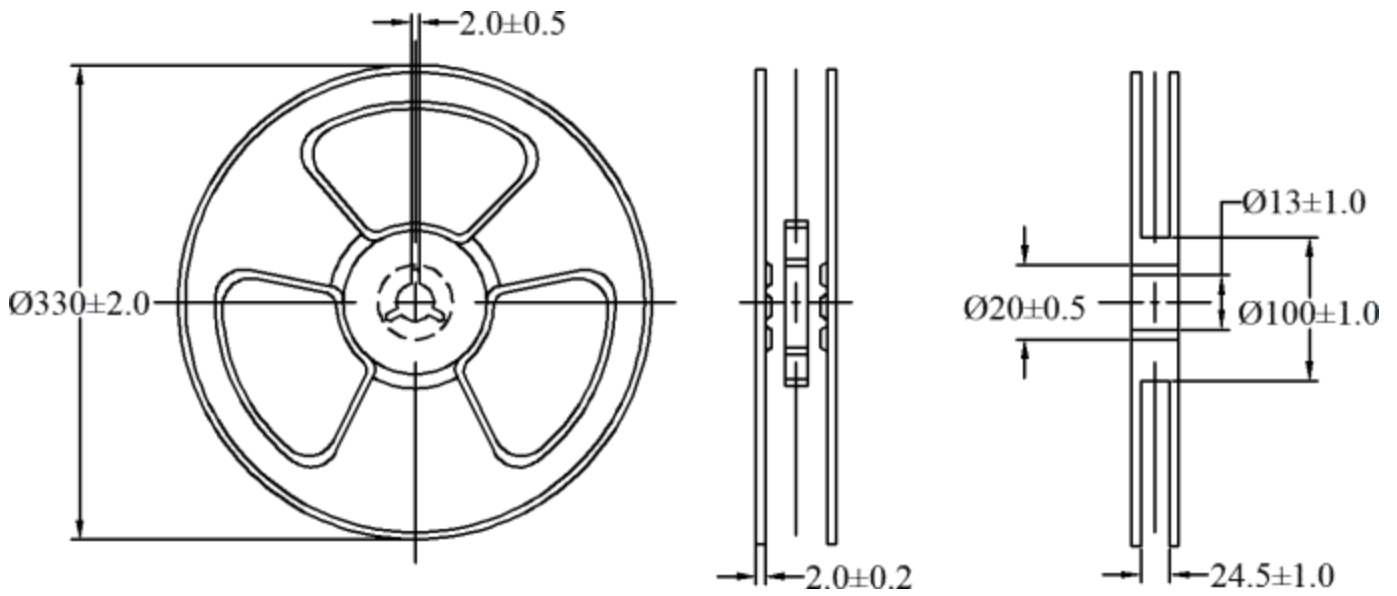


Taping dimension and tape direction, Leader ,Trailer, section dimension



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

4.2 Reel Dimensions-mm



4.3 Taping Quantity

500pieces/Reel