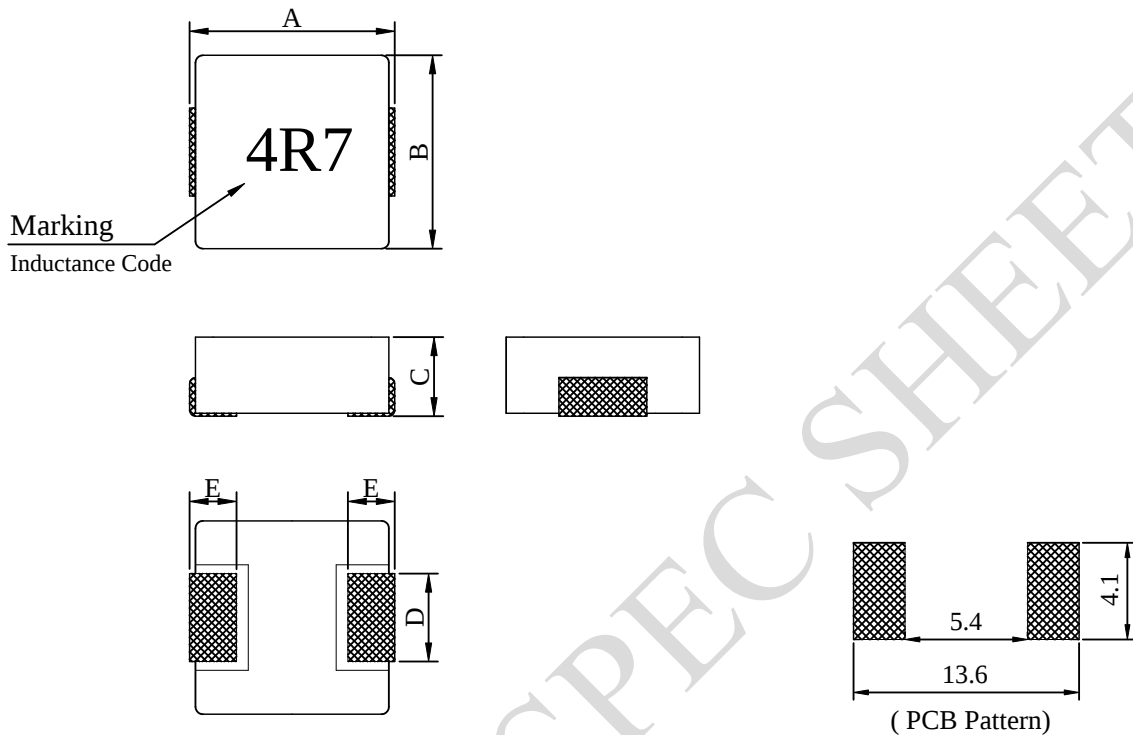


SPECIFICATION FOR APPROVAL

REF. :

PROD. NAME	Shielded SMD Power Inductor	ABC'S DWG NO.		CHE1004□□□□S□-□□□	
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I . Configuration and dimensions :



Unit : mm

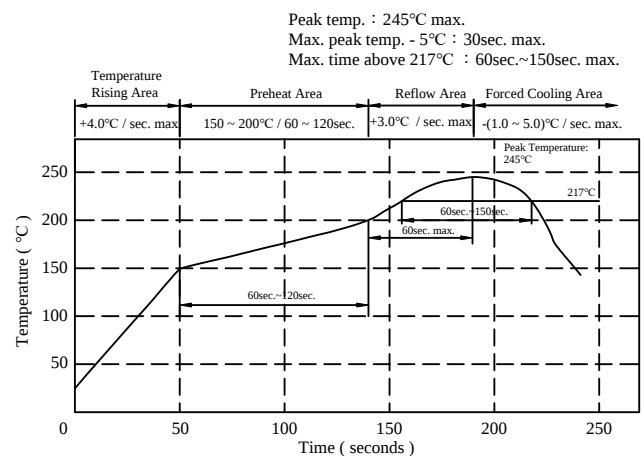
A	B	C	D	E
11.10 ±0.40	10.00 ±0.30	4.00 max.	3.00 ±0.50	2.00 ±0.50

II . Description :

- a . Powder molding construction
- b . Enamelled copper wire : H⁺ class
- c . Product weight : 2.29 g (ref.)
- d . Moisture sensitivity Level 1
- e . Products comply with RoHS' requirements
- f . Halogen free
- g . AEC-Q200 Grade 1

III . General specification :

- a . Operating temp. : -55°C-----+125°C
(Temp. rise included)
- b . Resistance to solder heat : 260°C.10 sec.



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IV . Electrical characteristics :

KEY

DWG No.	Inductance (μ H)	Test Freq. (Hz)	RDC ($m\Omega$) max.	Isat (A) typ.	Irms (A) typ.
CHE1004R15MS□-□□□	0.15 $\pm$ 20%	100k / 1V	0.65	75.0	45.0
CHE1004R22MS□-□□□	0.22 $\pm$ 20%	100k / 1V	1.00	50.0	38.0
CHE1004R36MS□-□□□	0.36 $\pm$ 20%	100k / 1V	1.20	45.0	30.0
CHE1004R47MS□-□□□	0.47 $\pm$ 20%	100k / 1V	1.70	40.0	27.0
CHE1004R56MS□-□□□	0.56 $\pm$ 20%	100k / 1V	1.80	33.0	25.0
CHE1004R68MS□-□□□	0.68 $\pm$ 20%	100k / 1V	2.40	30.0	23.0
CHE10041R0MS□-□□□	1.00 $\pm$ 20%	100k / 1V	3.20	27.0	21.0
CHE10041R5MS□-□□□	1.50 $\pm$ 20%	100k / 1V	4.20	22.0	16.0
CHE10042R2MS□-□□□	2.20 $\pm$ 20%	100k / 1V	7.00	17.0	12.0
CHE10043R3MS□-□□□	3.30 $\pm$ 20%	100k / 1V	11.80	16.0	11.0
CHE10044R7MS□-□□□	4.70 $\pm$ 20%	100k / 1V	20.00	15.0	9.0
CHE10046R8MS□-□□□	6.80 $\pm$ 20%	100k / 1V	25.00	12.0	8.5
CHE10048R2MS□-□□□	8.20 $\pm$ 20%	100k / 1V	30.00	9.0	8.0
CHE1004100MS□-□□□	10.00 $\pm$ 20%	100k / 1V	30.00	8.5	7.5
CHE1004150MS□-□□□	15.00 $\pm$ 20%	100k / 1V	45.00	7.0	6.5
CHE1004220MS□-□□□	22.00 $\pm$ 20%	100k / 1V	66.00	5.5	5.0
CHE1004330MS□-□□□	33.00 $\pm$ 20%	100k / 1V	92.00	5.0	4.4

- 1). Electrical specifications at 25°C
- 2). Isat base on $\Delta L/L0A = 30\%$ typ.
- 3). Irms base on temp. rise 40°C typ.
- 4). Rated operating voltage(across inductor) : 30V

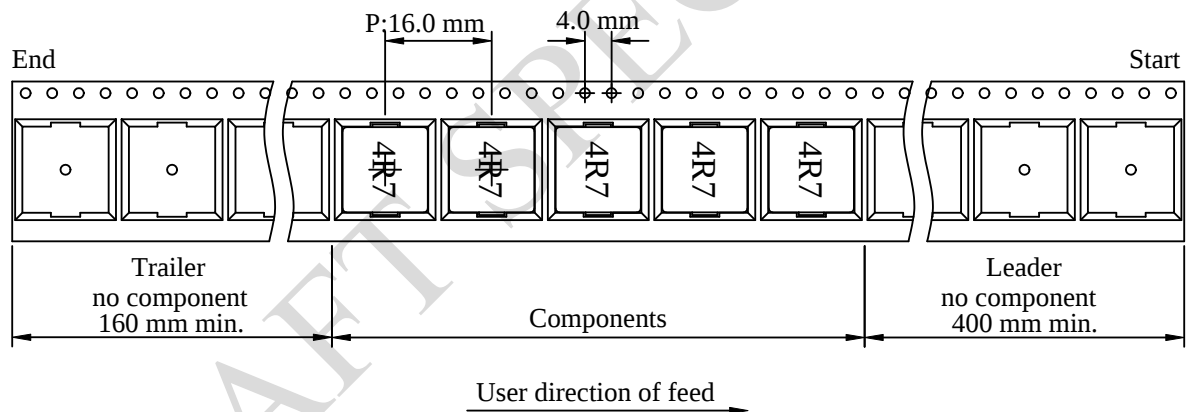
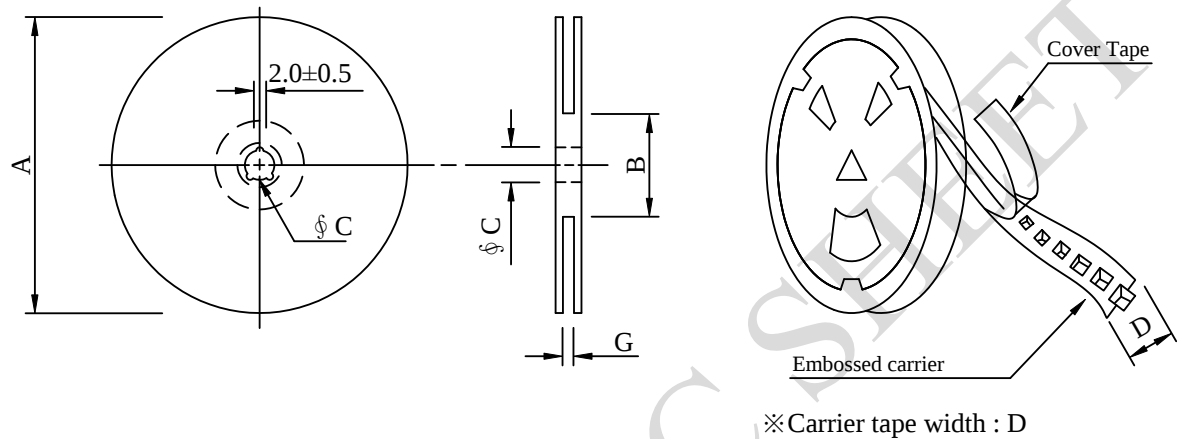
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V . Packaging information :

(1) Configuration



(2) Dimensions

Unit:mm

Style	A	B	C	D	G
13 - 24	330±1.0	100±1.0	13.2±0.5	24	24.5±0.2

(3) Q'TY & G.W. Per package

Code	Inner : Reel			Outer : Carton		
	Q'TY (pcs)	G.W. (g)	Style	Q'TY (pcs)	G.W. (kg)	Size (cm)
B	500	1,450	13 - 24	2,000	6.70	35.6 x 35.8 x 18.7

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VI . Drawing number expression :

C	H	E	1	0	0	4	□	□	□	□	□	□	—	□	□	□
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Reference code 1

Appendix code 2 : Package

Appendix code 1 : Classification

Tolerance code

Electrical code

Dimension code

Type code

Automotive

Appendix code 1 : Product Classification

Appendix code 2 : Package Information

Code	Inner package	Cover tape	Carrier tape	Bag	Package Q'TY	Remark
B	T /R (Reel package)	NA	NA	NA	500 pcs	

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VII . Reliability test :

Item	Reference documents	AEC-Q200 Test Condition	Specification
1.Humidity Resistance	MIL-STD-202 Method 103	1.Temperature: 40±2°C. 2.Relative Humidity: 90%. 3.Duration: 1000 +4/-0 hours.(ORT: 96 hrs)	1.Appearance: No damage. 2.Inductance shall not change more than ±10%.
2.Temperature Shock	JESD22 Method JA-104	1.Temperature : Rated operating temperature (e.g. -55±2°C~+125±2°C) Kept for 30min. 2.maximum Transition time : 5 min. maximum 1000 Cycles.	1.Appearance: No damage. 2.Electrical Test : within ±10% of initial.
3.High Temperature Resistance	EIL-STD-202 Method 108	1.Temperature : Rated operating temperature (e.g. +125±2°C) 2.Duration : 1000 +4/-0 hours.	1.Appearance: No damage. 2.Inductance shall not change more than ±10%.
4.Low Temperature Resistance	IEC68-2-1	1.Temperature : Rated operating temperature (e.g. -40±2°C). 2.Duration : 1000 +4/-0 hours.	1.Appearance: No damage. 2.Inductance shall not change more than ±10%.
5.Dropping	IEC68-2-32	Drop component 10 times on a concrete floor from a height of 100cm.	1.No visible mechanical damage. 2.Inductance shall not change more than ±10%
6.Solderability test	J-STD-002	1.Preheating : 160°C,60sec. 2.Solder temperature : 245±5°C. 3.Duration : 5 sec.	90% or more of electrode area shall be coated by new solder.
7.Solderability Heat test	MIL-STD-202 Method 210	1.Solder temperature : 245+0/-5°C. 2.Duration : 5 sec. 3.Allowed reflow time : 2 times.	1.Appearance: No damage. 2.Inductance shall not change more than ±10%.
8.Flexure Strength	AEC-Q200-005	1.Flexure: 2mm. 2.Pressurizing Speed: 0.5mm/sec. 3.Keep time: 30±1sec.	No visible mechanical damage.
9.Vibration test	MIL-STD-202 Method 204	1.Oscillation Frequency : 10Hz to 55Hz to 10Hz in 60 seconds as a period. 2.Total amplitude : 1.5mm. 3.Testing Time : a period of 2 hours in each 3 mutually perpendicular directions.(total of 6 hours).	1.Appearance: No damage. 2.Inductance shall not change more than ±10%.
10.Terminal Strength	MIL-STD-202 Method 211	1.Apply pull force to axis direction. 2.Applied force:10 N. 3.Keep time: 5 sec.	No visible mechanical damage.

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千如電子集團
ABC-ATEC ELECTRONICS GROUP

SPECIFICATION FOR APPROVAL

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VIII . Safety notes :

1. The risks of using the product are highly relevant to the field of application and need to be evaluated by both user and manufacturer. If the product is used for a purpose that directly affects personal safety or will cause significant impact or loss to the society , please be sure to contact us first for confirmation.
產品使用的風險與應用領域有高度相關，若您應用於直接影響人身安全系統或對社會會造成重大影響與損失之相關用途，請務必優先與我們聯繫確認。
2. The storage period is less than 12 months. Ensure to follow the storage conditions (Temperature: 5 to 30°C, Humidity: 10 to 60% RH or less). If the storage time is exceeded the limit, the electrodes might be deteriorate of terminal soldering.
儲存期不超過12個月，務必遵守儲存條件（溫度：5至30°C，濕度：10至60%RH以下）。如果超過了儲存時間，端子電極可能會氧化而影響焊接。
3. Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
不要在有氣體腐蝕等條件的地方使用或存放（鹽，酸，鹼等）。
4. Soldering corrections after mounting should be within the range of the conditions determined in the specifications. If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.
安裝時的焊接條件應在規格範圍內。如果超過要求，可能會發生短路，性能下降或壽命縮短。
5. When using, it should try to avoid excessive mechanical impact on the product, such as collision / drop ... and other reasons.
使用時，應盡量避免產品受到過度機械衝擊，如碰撞/掉落...等原因。
6. When embedding a printed circuit board where a chip is mounted to a set, be sure that residual stress is not given to the chip due to the overall distortion of the printed circuit board and partial distortion such as at screw tightening portions.
將已安裝新片的電路板組裝到裝置時，請注意應盡量避免電路板受到組裝變形...等，導致產品受到應力。
7. Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
產品會因通電而自我發熱(溫度上升)，因此在熱影響設計方面，需保留適當公差。
8. Do not expose the products to magnets or magnetic fields.
請勿將產品暴露於磁鐵或是磁場中。
9. If you would like to use this products to performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property, or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.
如果您希望將此產品用於性能和/或質量要求更嚴格的安全性或可靠性，或其失敗、故障或麻煩可能對社會、個人或財產造成嚴重損害，或者您有特殊情況要求超出目錄中規定的範圍或條件，請與我們聯繫。