

承 认 书

客户名称:

Customer _____

产品名称:

Description 独石电容

型号规格:

Model Detail 105K-100V-1812 P:5.0MM L:10MM

批准 Approval by	审核 Checked by	拟制 Prepared by
	任志远	黄晶晶

批准 Approval by	审核 Checked by	拟制 Prepared by

供方签章:

Supplier



日期: 2020-11-06

Date

客户签章:

Customer

日期:

Date

东莞市达孚电子有限公司

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1.0 測試儀器清單

IST TEST FACILITIES

電橋 IMPEDANCE BRIDGE	TH2617	中國同惠 CHINA
絕緣電阻測試儀 I · R TESTER	TH2618	中國同惠 TONGHUI CHINA

2.0 引線獨石電容器的特點

GENERAL SPECIFICATION OF LEADS MULTI-LAYER CERAMIC CAPACITOR

介質材料 DIELECTRIC MATERIAL	NPO (N)	X7R (B)	Y5U (E)	Y 5V (Y)
介質種類 DIELECTRIC TYPE	I 類電介質 STABLE CLASS I DIELECTRIC	II 類電介質 STABLE CLASS II DIELECTRIC		
電氣性能 ELECTRICAL PROPERTIES	電氣性能最穩定，基本上不隨溫度、電壓和時間的改變而改變。 WITH NEGLIGIBLE DEPENDENCE OF ELECTRICAL PROPERTIES ON TEMPERATURE -VOLTAGE、FREQUENCY AND TIME	電氣性能較穩定，在溫度、電壓與時間改變時性能的變化不顯著，能造出比 NPO 介質容量更大的電容器。 WITH PREDICTABLE CHANGE OF PROPERTIES WITH TEMPERATURE、VOLTAGE、FREQUENCY AND TIME，THIS DIELECTRIC IS FERRO—ELECTRIC AND OFFERS HIGHER CAPACITANCE RANGES THAN CLASS I	具有較高的介電常數，常用於生產比較大、標稱容量較高的大容量電容器產品，但其容量穩定性能較 X7R 差，容量損耗對溫度、電壓等條件較敏感。 WITH HIGH TWST DIELECRIC CONSSTANT AND GREATER VARIATION OF PROPERTIES WITH TEMPERATURE AND TEST CONDITIONS、VERY HIGH CAPACITANCE PER UNIT VOLUME	
應用 APPLICATION	適用於對穩定性要求高的電路，如溫度補償電路、高頻震蕩電路等。 USE IN CIRCUITS REQUIRING STABLE PERFORMANCE	適用於隔直、耦合、旁路與對容量穩定性要求不太高的鑒頻電路。 USE AS BLOCKING、COUPLING、BY—PASSING DISCRIMINATING ELEMENT	適用於要求容量較大的電路，如儲能、記憶電路等。 SUITED FOR BY—PASSING AND COUPLING APPLICATION SUCH AS STORE POWER AND MEMORY CIRCUIT	
容量範圍 CAPACITANCE RANGE	1pF—10nF	100pF—10 μ F	1nF—14.7 μ F	
溫度係數 OPERATING TEMPERATURE	0±30ppm/°C -55°C~+125°C	±15% -55°C~+125°C	+30%~-56% -30°C~+85°C	+30%~-80% -30°C~+85°C

3.0 產品命名表示方法 (举例说明)

3.0.1 徑向引線電容

RADIAL LEADS MLCC

CT4 — 1812 B 105 K 101 PF3
 ↓ ↓ ↓ ↓ ↓ ↓ ↓
 a b c d e f g

a:

產品類別 PRODUCT TYPE	
代號 CODE	類別 TYPE
CT4	II 類徑向引線電容器 CLASS II DIELECTRIC RADIAL LEADS
CC4	I 類徑向引線電容器 CLASS I DIELECTRIC RADIAL LEADS

b: 單位：英寸
UNIT : inch

尺寸規格 (長x寬) SIZE (LxW)	
CODE	CHIP
0805	0.08x0.05
1206	0.12x0.06
1210	0.12x0.10
1812	0.18x0.12
2225	0.22x0.25
3035	0.30x0.35

e:

容量偏差 TOLERANCE	
B	±0.10pF
C	±0.25pF
D	±0.5pF
F	±1.0%
G	±2.0%
J	±5.0%
K	±10%
M	±20%
S	+50%—-20%
Z	+80%—-20%
P	+100%—-0%

B. C. D 適用 C<10PF
 B. C. D FOR C<10PF
 NPO: B. C. D. F. G. J. K. M
 X7R: K. M. S. Z
 Y5V/Z5U: M. S. Z. P

c:

介質種類 DIELECTRIC	
N	COG (NPO)
B	X7R
Y	Y5V
E	Y5U (Z5U)

d:

標稱容量 CAPACITANCE
前兩位元數位為有效數字，後一位元數位表示零的個數。 FIRST TWO DIGITS ARE SIGNIFICANT THIRD DIGIT IS NUMBER OF ZEROS. 例如： FOR EXAMPLE : 104=100000pF 5R6=5.6pF

f:

額定電壓 RATED VOLTAGE
代碼與標稱容量相似 THE CODE MEANING IS SAME AS CAPACITANCE. 例如： FOR EXAMPLE : 250=25V 500=50V 101=100V

g:

包裝方式 Packaging Style		
編帶 Tape&Reel	P	盒帶包裝 Ammo
	T	卷盒包裝 Reel
散包裝 Bulk	F1	2.54mm
	F2	4.57mm
	F3	5.08mm
	F5	3.50mm

(F1, F2, F3, F5 表示腳距)

4.0 電氣性能標準

THE STANDARD OF ELECTRONIC PROPERTIES

4.0.1 檢驗標準及條件

Test Standard and Condition

檢驗專案 ITEM	檢驗標準 TEST STANDARD		
	NPO (N)	X7R (B)	Y5V (Y)
電容量 Capacitance	在相應的誤差範圍內 WITHIN THE TOLERANCE	在相應的誤差範圍內 WITHIN THE TOLERANCE	在相應的誤差範圍內 WITHIN THE TOLERANCE
損耗角正切 Dissipation Factor	≤0.15%	≤3.5%	≤7.0% (220nF 以下) ≤10.0% (220~470nF) ≤12.5% (470~1000nF)
絕緣電阻 Insulation Resistance	C≤10NF IR>10000MΩ C>10NF R.C>100MΩ.μF	C≤25NF IR>4000MΩ C>25 NF R.C>100MΩ.μF	
測試條件 TEST CONDITION			
容量測試頻率 FREQUENCY	1M HZ (C>1000PF, 1KHZ)	1KHZ	
容量測試電壓 TEST VOLTAGE	1±0.2VDC		C<1μF, V: 0.3 ±0.2VDC C≥1μF, V: 1.0 ±0.2VDC
絕緣電阻測試電壓 TEST VOLTAGE OF IR	標稱電壓，充電電流不超過 50 毫安培 The measuring voltage is equal to the rated voltage. The charging current may not exceed 50 mA		
標準大氣條件 Standard atmosphere conditions	Unless otherwise specified, the standard range of atmospheric conditions for measuring and testing is as follows: Ambient temperature 15°C~35 °C Relative humidity 45%~75% Air pressure 86Kpa~106Kpa (860-1060mbar) If there may be any doubt on the results, measurements shall be made within the following limits: Ambient temperature 25°C±1 °C Relative humidity 48%~52% Air pressure 86Kpa~106Kpa (860-1060mbar)		
操作溫度範圍 Operating temperature range	The operating temperature range is the range of ambient temperatures at which the capacitor can be operated continuously at rated voltage. Temperature compensation use: NPO -55°C~+125°C X7R -55°C~+125°C Y5V -25°C~+85°C Z5U +10°C~+85°C		

5.0 可靠性試驗專案及要求：

ITEM AND REQUIREMENT OF RELIABILITY TEST

專案 Item	性能要求 Properties Request		試驗條件及要求 Test Condition and Request
外觀 Appearance	無異常，標誌清晰。 No abnormality, sign in focus		目測 Eyeballing
電容量 Capacitance	在規定的允許偏差範圍內 In permissible tolerance		測試條件：Test condition Class I：測試電壓：1±0.2V Voltage 測試周波數：1MHz±10% (C≤1000pF) Frequency 1KHz±10% (C>1000pF) Class II：測試電壓：1±0.2V Voltage 測試周波數：1KHz±10% Frequency 1KHz±10%
絕緣電阻 Insulation Resistance	在允許的範圍內 In permissible tolerance		測試電壓：額定電壓 Voltage: rated voltage 持續時間：60±5s Duration; 充、放電流限制在 50mA 內 Charge / discharge current is less than 50 mA.
耐電壓 Withstanding Voltage	端子間 Between terminals	測試後無可見損傷或擊穿 There shall be no evidence of damage or flash over during the test.	施加電壓：2.5 倍額定電壓 Voltage: 2.5 times rated voltage 時間：2s T=2s 充、放電流限制在不大於 50 毫安 Charge / discharge current is less than 50 mA.
	端子與引線間 Between terminals and body		
耐焊接熱 Withstanding solder heat	外觀無可見損傷，標誌清晰 There shall be no visible defacing and sign in focus		錫溫：260±5℃， Tin review: 持續時間 10s Duration 恢復時間：24±2 h Recovery time;
	溫度特性 T. C. Temp. Char.	ΔC/C≤	
	CG/CH/RH	±0.5% OR ±0.5pF	
	UJ/SL	±1% OR ±1pF	
	B	±10 %	
	F	±30 %	
可焊性 solder ability	引線上錫良好 Leads shall excellently be covered with a new coating		錫溫：230±5℃， Tin review: 持續時間 2s Duration
耐久性 Life test	外觀無可見損傷，標誌清晰 There shall be no visible defacing and sign in focus		電壓：1.5 U _R Voltage: 1.5 U _R 溫度：上限類別溫度 Temperature: upper category temperature 浪湧電流應限制在 50 毫安內 Charge/discharge current is less than 50mA 持續時間：(duration) 1000----(+48h~-0 h) 恢復時間：(recovery time) 24±2 h
	溫度特性 T. C. Temp. Char.	容量變化 ΔC/C≤	損耗角正切 DF≤
	CG/UJ	±3% or ±1pF	絕緣電阻 IR≥(MIN) Ri≥4000Ω OR Ri.C _R ≥40s
	CH/RH/SL	±5% or ±1pF	
	B	±20 %	Ri≥2000Ω OR Ri.C _R ≥50s
	F	±30 %	10% (≤100000pF) 12.5% (220000~470000pF) 17.5% (≥ 1000000pF)

6.0 徑向引線電容器尺寸

SIZE CODE OF RADIAL LEADS MLCC

Lead spacing $e=5.0\pm 0.5\text{mm}$

7.0 包裝及儲存

PACKAGE AND STORAGE

7.1 徑向引線陶瓷電容器包裝形式

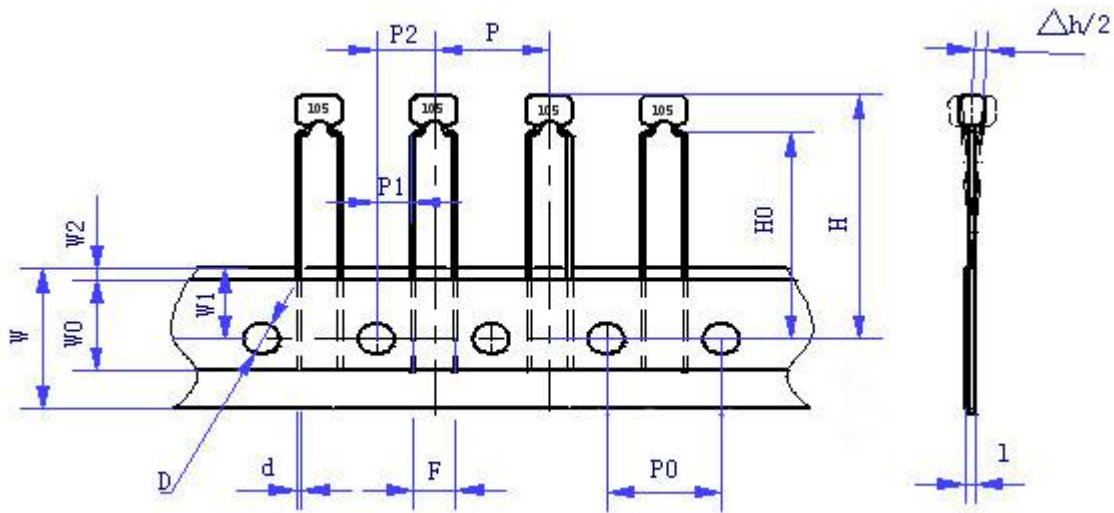
RADIAL LEADS MLCC PACKAGING STYLE

散料包裝：(BULK)

普通腳長 (LEADS IN NORMAL LENGTH) --1000pcs/包

長腳 (LONG LEADS, $\geq 25\text{mm}$) --500pcs/包

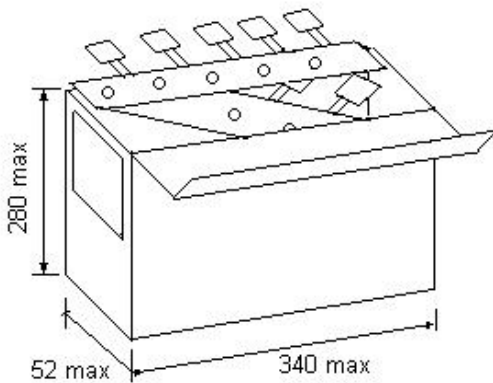
編帶包裝：(TAPE & REEL)



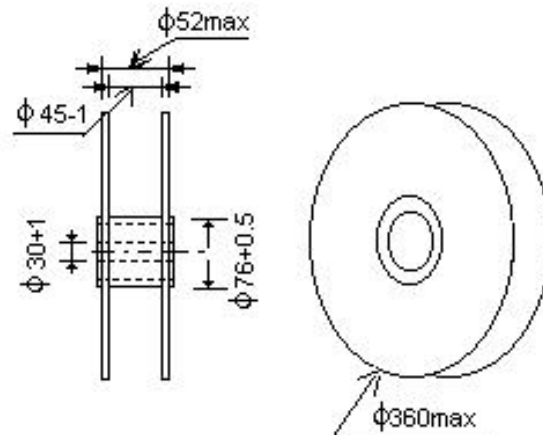
Cod e	P	P0	P1	P2	d	Δh	W	W0	W1	W2	H	H0	l	D
Dim	12.7	12.7	3.85/5.1	6.35	0.5	0	18	8	9	3.0	32.25	15-20	1.0	4.0
Tol	± 1	± 0.8	± 0.7	± 1.3	± 0.1	± 2	± 0.8	± 1	± 0.5	Max	Max	± 0.5	Max.	Max.

Note: P1=3.85mm for F=5.0mm; P1=5.1mm for F=2.5mm

Ammo Packaging



Reel Packaging



7.2 標籤及標識

LABEL AND SYMBOL

包裝袋有標籤，標籤包括以下內容：

Label is on (in) the package, It includes :

- | | | | | |
|----------------|---------------|--------------------------|------------|---------|
| ①型號規格 | ②標稱容量 | ③數量 | ④誤差級別 | ⑤批號 |
| ①PART NO | ②CAPACITANCE | ③QUANTITY | ④TOLERANCE | ⑤LOT NO |
| ⑥額定工作電壓 | ⑦包裝日期 | ⑧溫度係數 | ⑨QC 蓋章 | |
| ⑥RATED VOLTAGE | ⑦PACKAGE DATE | ⑧TEMPERATURE COEFFICIENT | ⑨QC MARK | |

7.3 儲存方式

STORAGE METHODS

存儲條件：溫度 5℃--35℃ 相對濕度：45%--75% 存儲期：1 年

Storage condition: Temperature: 5℃--35℃

Relative humidity: 45%--75%

Storage period: one year