

Product Specification AEC Electronics Company Limited	Original Date	11/11/2020
	PN:	ACLTCS10.7BW590



AEC Electronics Company Limited.
PRODUCT SPECIFICATION

Ceramic Filter

AEC PART NUMBER / SPEC. NO: ACLTCS10.7BW590

CUSTOMER: _____



This model is ROHS compliance according to the ROHS directive 2002/95/EC

Customer's Name	
Production Name	Ceramic Filter
Frequency	10.7MHz
Model No	ACLTCS10.7BW590
Issue Date	21 st March, 2023

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 128 Java Road,
 North Point, Hong Kong
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Prepared	Inspection	Approved
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1. SCOPE

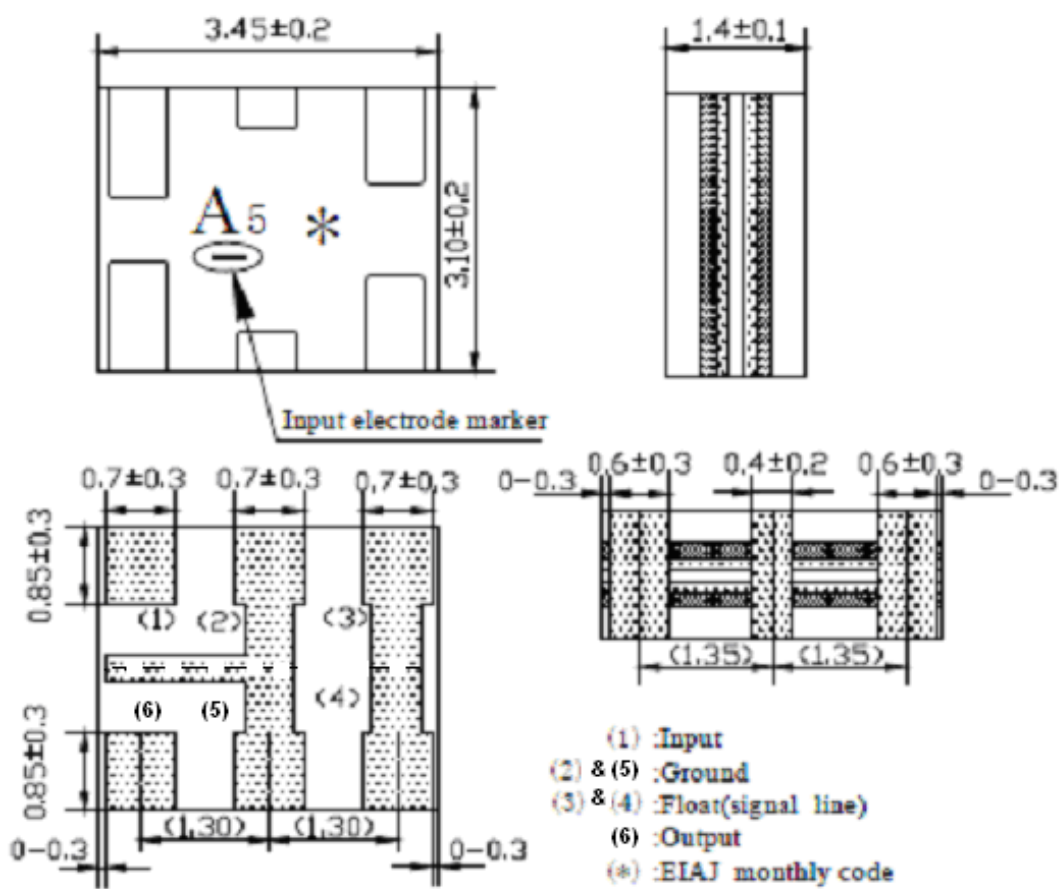
This specification shall cover the characteristics of the ceramic filter with the type ACLTCS10.7BW590

2. PART NO.

PART NUMBER
ACLTCS10.7BW590
CUSTOMER PART NO

3. OUTLINE DIMENSIONS AND MARK

- 3.1 Appearance: No visible damage and dirt.
- 3.2 Construction: SMD ceramic packaging.
- 3.3 The products conform to the RoHS directive and national environment protection law.
- 3.4 Dimensions and mark



4 ELECTRICAL SPECIFICATIONS

4.1 RATING

Items	Content
Withstanding Voltage (V)	50 (DC, 1min)
Insulation Resistance Ri, (MΩ) min.	100 (10V, 1min))
Operating Temperature Range (°C)°C	-20 ~ +80
Storage Temperature Range (°C)°C	-40 ~ +85

4.2 ELECTRICAL SPECIFICATIONS

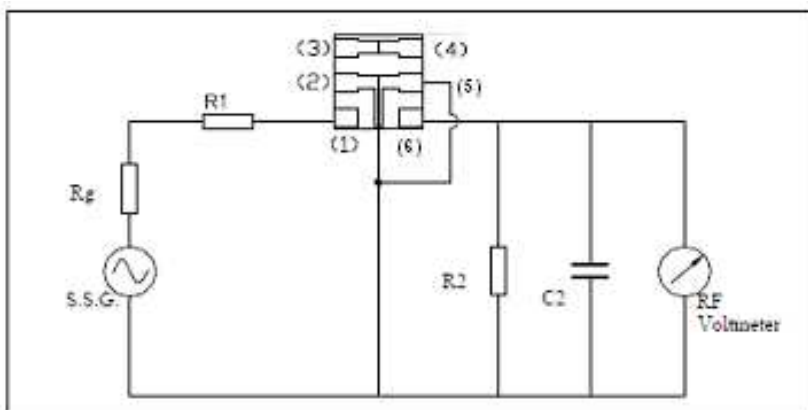
Items	Content
Center Frequency(fo)(MHz)	10.700±0.030
3dB Bandwidth(kHz)	280±50
20dB Bandwidth(kHz) max	590
Insertion Loss (dB)	3.0±2.0 (at minimum loss point)
Ripple (dB) max	1.0 (within 3dB Bandwidth)
Spurious Attenuation (dB) min	30 (9MHz-12MHz)
Input/Output Impedance(Ω)	330
Temp. Characteristic	±0.5% (-20°C to 80°C)°C

5. TEST

5.1 Test Conditions

Parts shall be tested under the condition (Temp.: 20±15°C, Humidity : 65±20% R.H.) unless the standard condition(Temp.: 25±2°C, Humidity : 65±5% R.H.) is regulated to measure.

5.2 Test Circuit



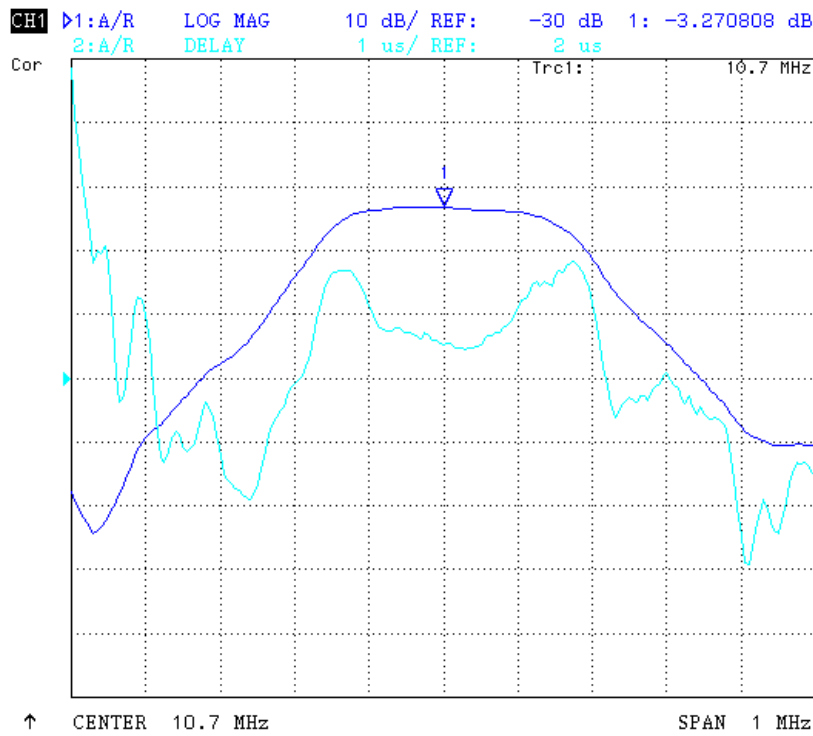
R1=280 Ω (1±5%) R2=330Ω(1±5%) Rg=50Ω

C2=10pF(Including stray capacitance and capacitance of RF Voltmeter)

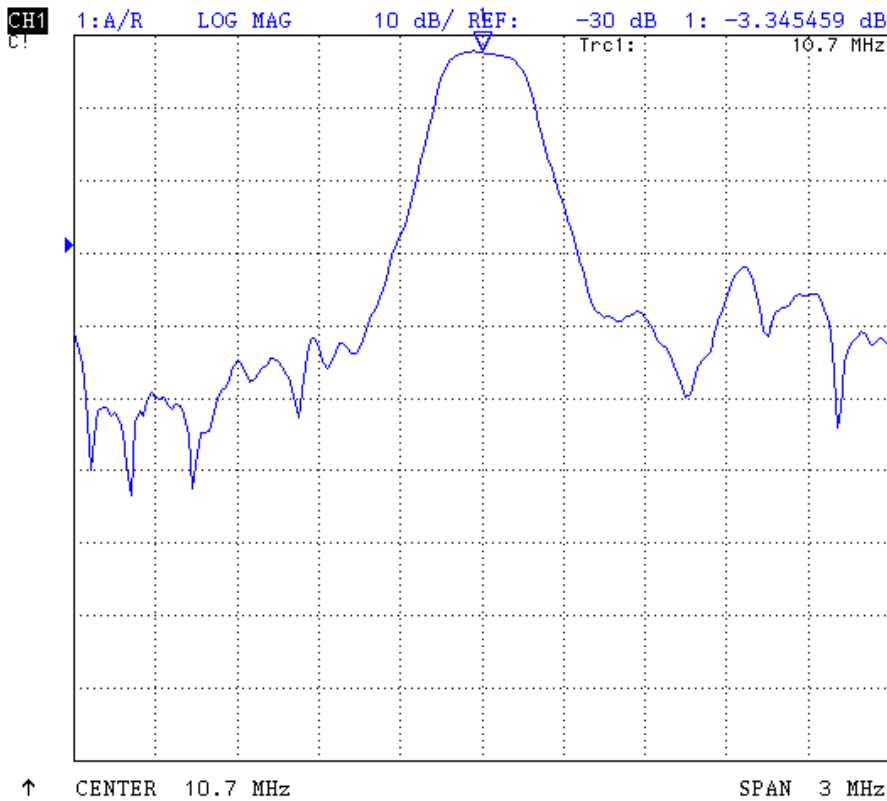
S.S.G: Output Voltmeter

①:Input ② ⑤ Ground ③ ④ .Float ⑥ Output

6. Frequency Characteristics



SELECT LETTER
SPACE
BACKSPACE
ERASE ALL
ENTER
CANCEL



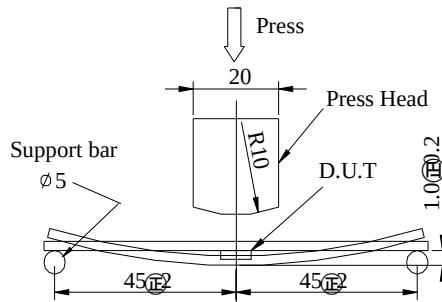
SELECT LETTER
SPACE
BACKSPACE
ERASE ALL
ENTER
CANCEL

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7. ENVIRONMENTAL TEST

No.	Item	Condition of Test	Requirement	
7.1	Humidity	Subject the filter at $40 \pm 2^\circ\text{C}$ and 90%-95% R.H. for 96h, Filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.	
7.2	High Temperature Exposure	Subject the filter to $85 \pm 2^\circ\text{C}$ for 96h, Filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.	
7.3	Low Temperature Exposure	Subject the filter to $-40 \pm 2^\circ\text{C}$ for 96h, Filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.	
7.4	Temperature Cycling	After temperature cycling of blow table was performed 5 times, Filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill Table 1.	
		Temperature		Time
		$-20 \pm 3^\circ\text{C}$		30 ± min
		$80 \pm 3^\circ\text{C}$		30 ± min
7.5	Vibration	Subject the filter to vibration for 2h. Each in x y and z axis with the amplitude of 1.5mm, The frequency shall be varied uniformly between the limits of 10Hz-55Hz-10Hz and then filter shall be measured.	It shall fulfill Table 1.	
7.6	Mechanical Shock	Filter shall be measured after 3 times random dropping from the height of 1m on wooden plate.	No visible damage and it shall fulfill Table 1.	
7.7	Soldering Test	Passed through the re-flow oven under the following condition and left at room temperature for 24h before measurement.	It shall fulfill Table 1.	

7.8	Solderability	<p>Terminals of filter shall be immersed in soldering bath(235°C\pm5°C) for 3s\pm0.5s.</p>	<p>More than 95% of the terminal surface of the filter shall be covered with fresh solder.</p>
7.9	Board Be	<p>Mount on a glass-epoxy board(width =50mm, thickness=1.6mm),then bend it to 1mm displacement(velocity= 1mm/s) and keep it for 5s</p>	<p>anical ge such eak shall ccur</p>



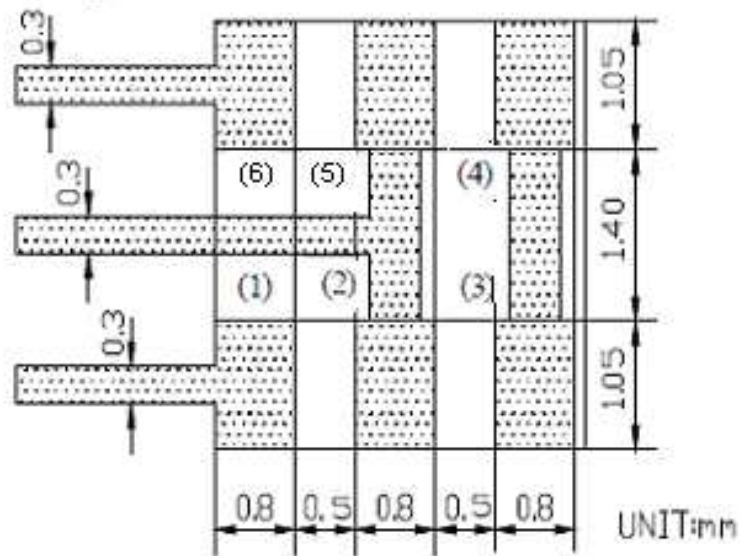
(to be continued)

Table 1

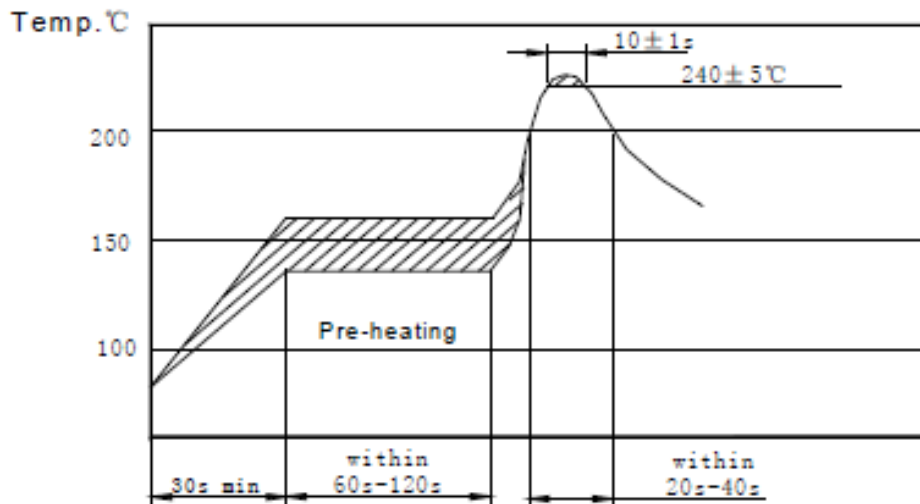
Item	Characteristics after test
Centre Frequency Drift(KHz) max	± 30
Insertion Loss Drift (dB) max	± 2
3dB Bandwidth Drift (KHz) max	± 25
20dB Bandwidth Drift (KHz) max	± 60
Note:The limits in the above table are referenced to the initial measurements.	

8 RECOMMENDED LAND PATTERN AND REFLOW SOLDERING STANDARD CONDITIONS

8.1 Recommended land pattern



8.2 Recommended Reflow soldering standard condition

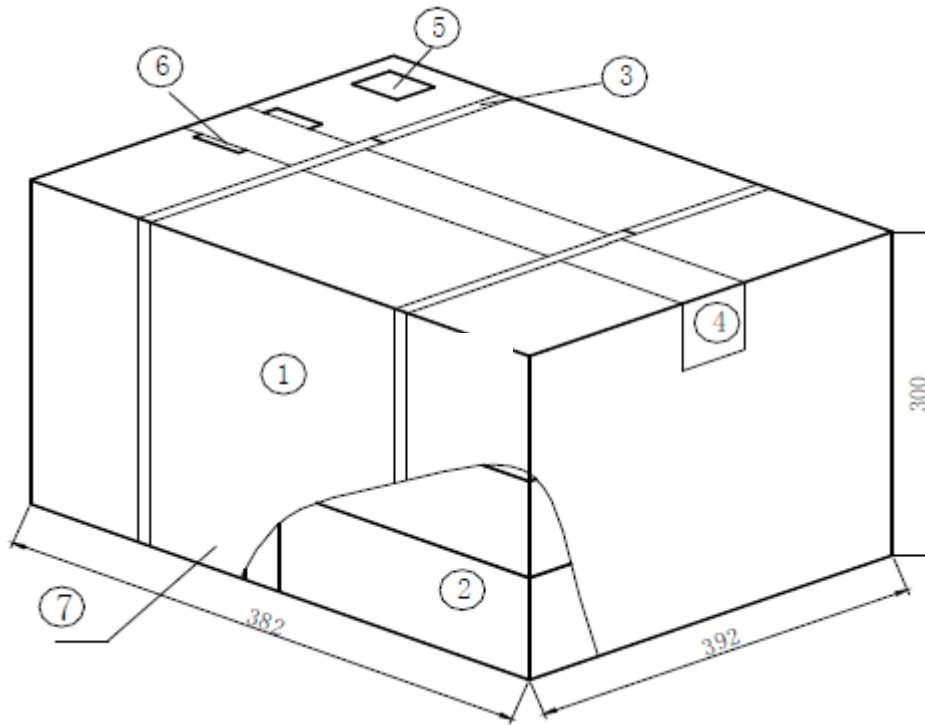


9. PACKAGE

To protect the products in storage and transportation, it is necessary to pack them (outer and inner package)

9.1 On paper pack, the following requirements are requested.

9.1.1 Dimensions and Mark



NO.	Name	Quantity
	Package	1
	Inner Box	12
	Belt	2.9 m
	Adhesive tape	1.2 m
	Label	1
	Certificate of approval	1
	Company Name, Address etc.	

9.1.2 Section of package

Package is made of corrugated paper with thickness of 0.8cm. Package has 10 inner boxes, each box has 1 reels (each reel for plastic bag).

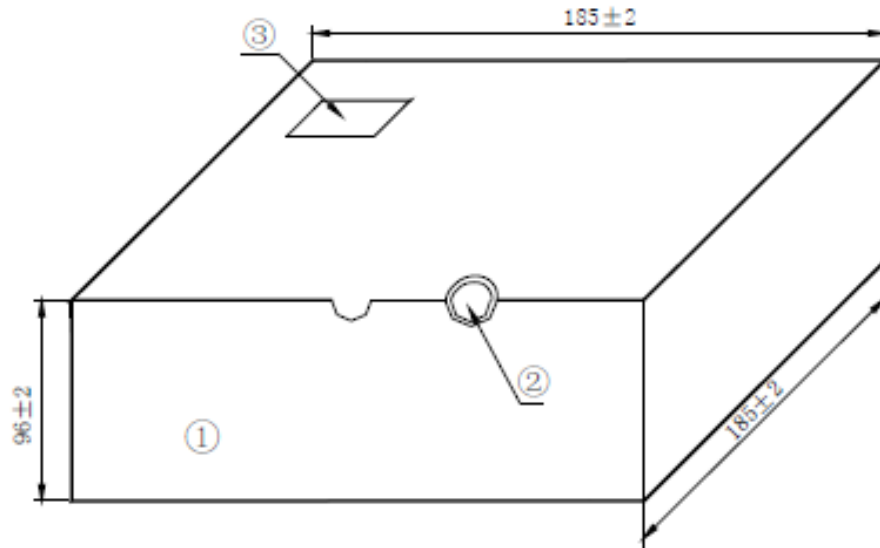
8.1.3 Quantity of package

Per plastic reel 1000 pieces of piezoelectric ceramic part

Per inner box 5 reel

Per package 12 inner boxes
 (60000 pieces of piezoelectric ceramic part)

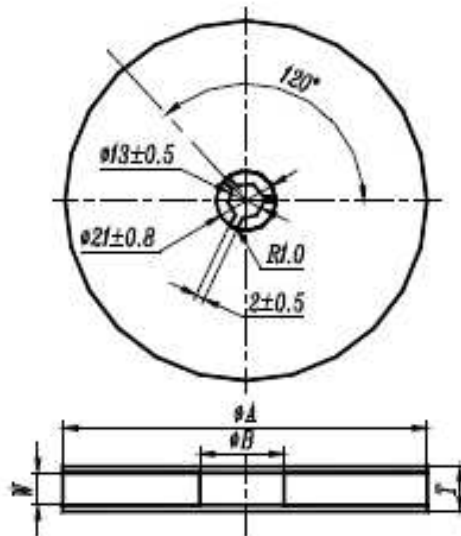
9.1.4 Inner Box Dimensions



NO.	Name	Quantity
①	Inner Box	1
②	QC Label	1
③	Label	1

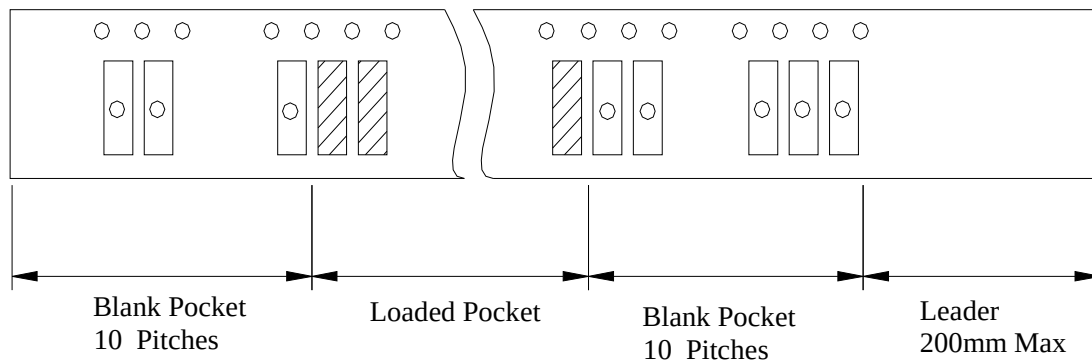
9.2 On reel pack, the following requirements are requested.

9.2.1 Reel

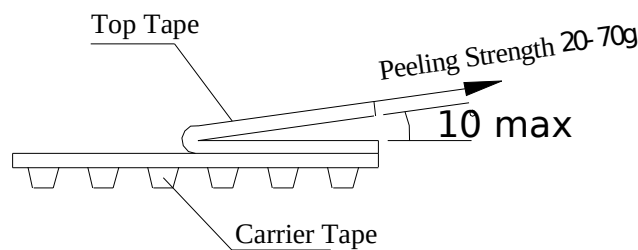


φ A	φ B	W	T	Pieces per reel	Carrier tape size
180±3	60min	12.4min	19.4max	1000typ.	12

9.2.3 Packing Method Sketch Map



9.2.4 Test Condition Of Peeling Strength



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10. EIAJ Monthly Code

2017 / 2019 / 2021 / 2023		2018 / 2020 / 2022 / 2024	
MONTH	CODE	MONTH	CODE
JAN	A	JAN	N
FEB	B	FEB	P
MAR	C	MAR	Q
APR	D	APR	R
MAY	E	MAY	S
JUN	F	JUN	T
JUL	G	JUL	U
AUG	H	AUG	V
SEP	J	SEP	W
OCT	K	OCT	X
NOV	L	NOV	Y
DEC	M	DEC	Z

11. OTHER

11.1 Caution

11.1.1 Don't apply excess mechanical stress to the component and terminals at soldering. Do not use this product with bend.

11.1.2 Do not clean or wash the component for it is not hermetically sealed.

11.1.3 Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.

11.1.4 Don't be close to fire.

11.1.5 All kinds of re-flow soldering must not be applied on the component.

11.1.6 This specification mentions the quality of the component as a single unit. Please insure the component is thoroughly evaluated in your application circuit

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11.1.7 Expire date (Shelf life) of the products is twelve months after delivery under the conditions of a sealed and an unopened package. Please use the products within twelve months after delivery. If you store the products for a long time (more than twelve months), use carefully because the products may be degraded in the solderability or rusty. Please confirm solderability and characteristics for the products regularly.

11.1.8 Please contact us before using the product as automobile electronic component.

11.2 Notice

11.2.1 Please return one of this specification after your signature of acceptance.

11.2.2 When something gets doubtful with this specifications, we shall jointly work to get an agreement.