Engineering/Process Change Notice

ECN/PCN No.: 3684

For Manufacturer		
Product Description: Thru Hole	**Abracon Part Number / Part Series:** 954-5.5M-D	☐ Series ☒ Part Number
Affected Revision:	**New Revision:** EOL	**Application:** ☐ Safety ☒ Non-Safety
Prior to Change: 954-5.5M-D (PDF available in page 2)		
After Change: EOL		
Cause/Reason for Change: Discontinuation of this older product package type and associated manufacturing capability.		

Change Plan		
Effective Date: 9/29/2020	**Additional Remarks:**	
Change Declaration:		
Issued Date: 9/23/2020	**Issued By:** *Stephanie Lopez*	**Issued Department:** Engineering
Approval: *Thomas Culhane* Engineering Director	**Approval:** *Reuben Quintanilla* Quality Director	**Approval:** *Ying Huang* Purchasing Director

For Abracon EOL only		
Last Time Buy (if applicable): Not Applicable	**Alternate Part Number / Part Series:** Not Available	
Additional Approval: Swati Srivastava - PLM	**Additional Approval:**	**Additional Approval:**

Customer Approval (If Applicable)		
Qualification Status: ☐ Approved ☐ Not accepted *Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.*		
Customer Part Number:	**Customer Project:**	
Company Name:	**Company Representative:**	**Representative Signature:**
Customer Remarks:		

954-5.5M-D

Ceramic Discriminator

1 SCOPE

This specification is applied to the ceramics discriminator used with FM receiver. Please contact us before using any of the products in the applications not described above.

2 PART NO.

PART NUMBER	CUSTOMER PART NO	SPECIFICATION NO
954-5.5M-D		

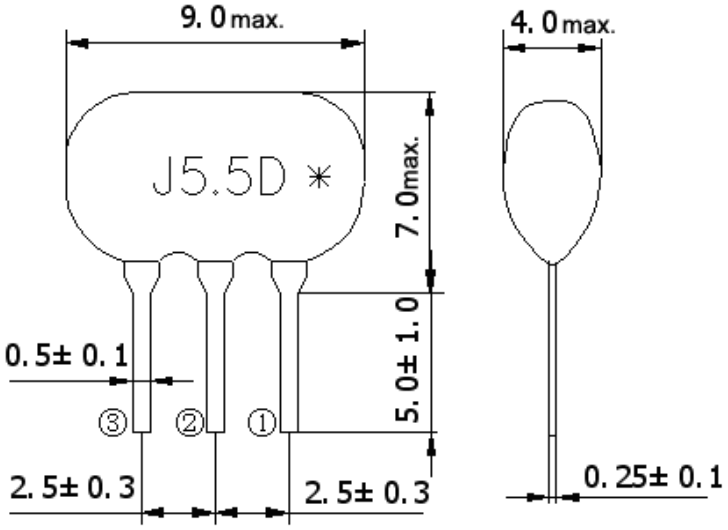
3 OUTLINE DRAWING AND STRUCTURE

3.1 Appearance: No visible damage and dirt.

3.2 Construction: Leads are soldered on electrode and body is molded by resin.

3.3 Except the chip(ceramic element), the materials don't contain lead.

3.4 Dimensions



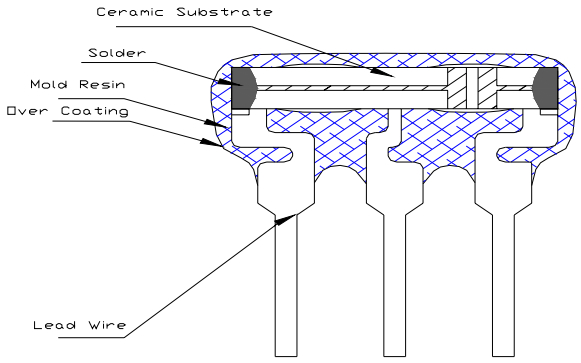
① Input

② Ground

③ Output

*:EIAJ Monthly Code

3.4 STRUCTURE



Component	Material
Lead Wore	Solder plating copper or iron wire
Mold Resin	epoxy resin
Solder	High-melting solder
Ceramic Substrate	Lead titanate-zirconate
Over coating	Clear Epoxy Resin

4 RATING AND ELECTRICAL SPECIFICATIONS:

4.1 RATING

Items	Content
Withstanding Voltage (V)	50 (DC, 1min)
Maximum applied DC voltage	10V
Temp. Coefficient of Freq (ppm/℃) max	±100 (Center Freq. drift, -20℃~80℃)
Operating Temperature Range (℃)	-20 ~ +80
Storage Temperature Range (℃)	-40 ~ +85

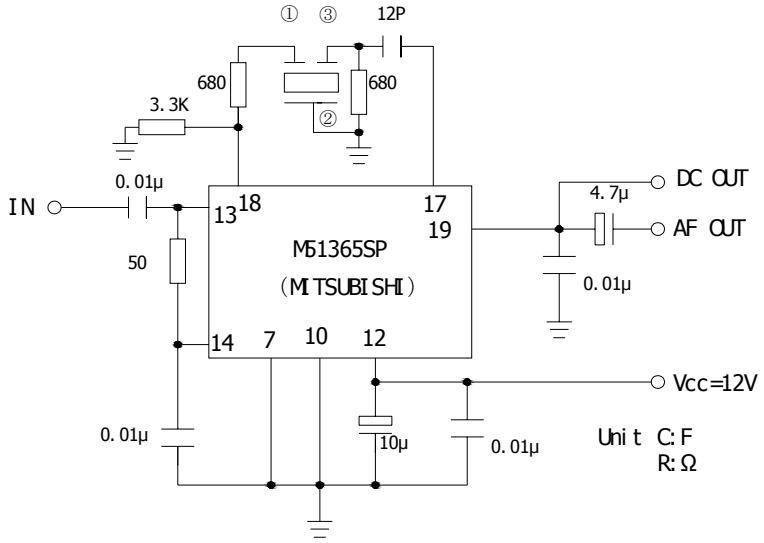
4.2 ELECTRICAL SPECIFICATIONS

Items	Content
Center Frequency fn (MHz)	5.5 ±0.030
Recovered Audio Voltage (at fo) (mV) min.	250
Distortion (at fo) (%) max.	1.2
Distortion 3.0% Bandwidth (from fn) kHz min.	±40
Recovered Audio 3dB Bandwidth kHz min.	f_n±65

5 Test Conditions

Parts shall be tested under a condition (Temperature:+20℃±15℃, Humidity: 65%±20%R.H.)unless the standard condition(Temperature:+25℃±2℃, Humidity: 65%±5% R.H.) is regulated to test.

5.1 Test Circuit



5.1.1 Input Signal： Input Level:80dBμV
Modulation Frequency:1000Hz
Frequency Deviation:±22.5kHz

5.1.2 Center Frequency（fo）: Center frequency is measured under the condition that modulated and 80dBμV input signal （center）is supplied and varied its frequency. It is defined as the frequency at that D.C.output Voltage shall correspond to that for 0dBμV input signal.

5.1.3 Recovered Audio Voltage: It is defined as the recovered audio voltage at center frequency（fo）

5.1.4 Distortion: It is defined as the distortion at center frequency（fo）.

5.1.5 It is defined as the difference between the nominal frequency (fn) and the center of two frequencies when the distortion of the recovered audio voltage is 3%.

5.1.6 Recovered Audio 3dB Bandwidth: It is defined as the difference between the nominal frequencies where the recovered audio voltage 3dB from the level of center frequency (fo）.

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

No	Item	Condition of Test	Requirements
6.1	Humidity	Subject the resonator at +40℃±2℃ and 90%~95% R.H. for 100h, resonator shall be measured after being placed in natural conditions for 1h.	It shall fulfill the specifications in Table 1.
6.2	High Temperature Exposure	Subject the resonator to +85℃±5℃ for 100h, resonator shall be measured after being placed in natural conditions for 1h.	It shall fulfill the specifications in Table 1.
6.3	Low Temperature Exposure	Subject the resonator to–25℃±5℃ for 100h, resonator shall be measured after being placed in natural conditions for 1h.	It shall fulfill the specifications in Table 1.
6.4	Temperature Cycling	Subject the resonator to －25℃ for 30min. followed by a high temperature of +85℃ for 30min. Cycling shall be repeated 5 times. Resonator shall be measured after being placed in natural conditions for 1h.	It shall fulfill the specifications in Table 1.
6.5	Vibration	Subject the resonator 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 and then resonator shall be measured.	It shall fulfill the specifications in Table 1.
6.6	Mechanical Shock	Resonator shall be measured after 3 times' random dropping from the height of 1m on concrete floor.	No visible damage and it shall fulfill the specifications in Table 1.

6.7	Resistance to Soldering Heat	Lead terminals are immersed up to 2mm from resonator's body in soldering bath of +260℃±5℃ for 10s±1s and then resonator shall be measured after being placed in natural conditions for 1h.	It shall fulfill the specifications in Table 1.
6.8	Solderability	Lead terminals are immersed up to 2mm from resonator's body in soldering bath of +250℃±5℃ for 3s±0.5s.	More than 95% of the terminal surface of the resonator shall be covered with fresh solder.
6.9	Terminal Strength Terminal Pulling Terminal Bending	Force of 5N is applied to each lead in axial direction for 10s±1s. When force of 5N is applied to each lead in axial direction, the lead shall folded up 90°from the axial direction and folded back to the axial direction. The speed of folding shall be each 3s	No any visible damage and it shall fulfill the specifications in Table1.

Table 1

Item	**Specification after test**
Recovered Audio 3dB Bandwidth kHz min	f_n±45
Recovered Audio Voltage drift	±2dB max
Note ：The limits in the above table are referenced to the initial measurements.	

EIAJ Monthly Code

2005 / 2007 / 2009		2004 / 2006 / 2008 / 2010	
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

7 OTHER

7.1 Caution of use

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

7.1.2 The component may be damaged when an excess stress will be applied.

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

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

7.1.5 Cleaning or washing of the component is not acceptable due to non sealed construction.

7.2 Notice

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

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

7.2.3 Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miss-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.