




<b>SPECIFICATION SHEET NO.</b>	R1010- FB450K0000L116	
<b>ORIGINAL MFG/PART NO</b>	TGS Crystals/CF 450KGW BLH/LTW450KGx	
<b>DATE</b>	Oct. 10, 2024	
<b>REVISION</b>	A4	Updated With Most Recent Data
<b>DESCRIPTION AND MAIN PARAMETRICS</b>	<p>KHz DIP Ceramic Filter, GDT Type, 5 Pins, FB Series</p> <p>Case 11070, Dimension L11.0*W7.0*H8.0mm</p> <p>450KHz, Insertion Loss. 9.0dB Max.; 6dB Bandwidth: ±4.5KHz Min.</p> <p>Group Delay Time (GDT) Ripple Deviation: 40µSec. Max. within f0 ±3.0KHz</p> <p>Input/Output Impedance: 2000 ohm,</p> <p>Operating Temp. Range -20°C ~+85°C, Package in Bulk</p> <p>REACH/RoHS/RoHS III Compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863)</p>	
<b>CUSTOMER</b>		
<b>CUSTOMER PART NUMBER</b>		
<b>CROSS REF. PART NUMBER</b>		
<b>MEMO</b>		

<b>VENDOR APPROVE</b>			
Issued/Checked/Approved			
Date: Oct. 10, 2024			

<b>CUSTOMER APPROVE</b>
Date:

**MAIN FEATURE**

- KHz DIP Ceramic Filter, GDT Type, 5 Pins, Case 1170
- Black case, Dimension L11.0\*W7.0\*H8.0mm
- Low Cost And Short Shipment
- Group Delay Time (GDT) Ripple Deviation: 40μSec. Max. within f0 ±3.0KHz
- Reflow Profile Condition 260 °C Max.
- Cross Main Competitors Parts CFWL series
- REACH/RoHS/RoHS III compliant, RoHS Annex III lead Exemption  
(Exempt per RoHS EU 2015/863)



*Image shown is a representation only. Exact specifications should be obtained from the product dimension.*



**APPLICATION**

- Communication Electronics

**HOW TO ORDER**

- Please follow up part code guide and indicate part code when you order or RFQ.

**PART CODE GUIDE**

**RFQ**  
[Request For Quotation](#)

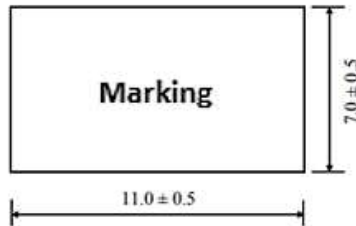
CODE	NAME	KEY SPECIFICATION OPTION
FB	Product Series	KHz DIP Ceramic Filter, 5 Pins, Case 11070 Dimension L11.0*W7.0*H8.0mm
450K	Frequency Range	450: 450KHz; 455K: 455KHz
0000	Internal Control	Letter or Digits (A~Z, a~z or 1~9)
L	DIP Type Package	Package in bulk
116	Special Parametric	Letter or Digits (A~Z, a~z or 1~9)
- XX	Suffix	Blank: N/A XX: Internal Control Code, Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters

**DIMENSION** (Unit: mm)

Case 11070, 5 Pins

L11.0\*W7.0\*H8.0mm

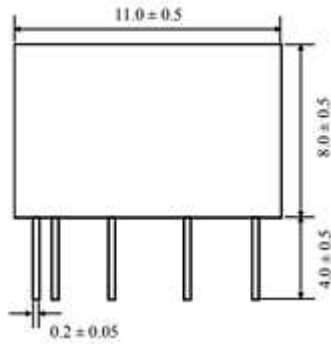
Top View



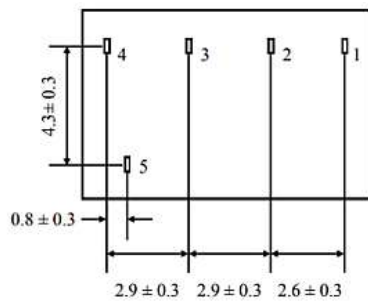
**Marking**

- Line 1: CF or LTW
- Line 2: Frequency Range
- + Internal Code

Side View



Bottom View

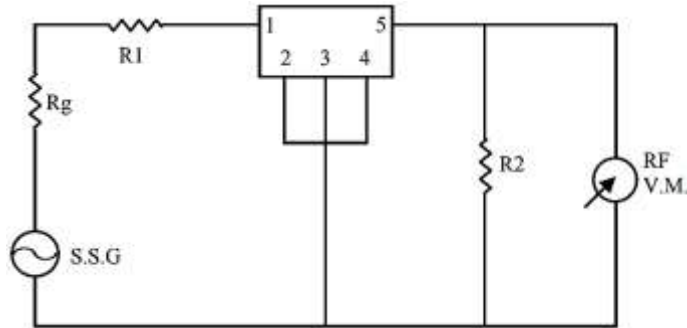


**Connection**

- 1: Pin 1: Input
- 2: Pin 2: Ground
- 3: Pin 3, Ground
- 4: Pin 4: Ground
- 5: Pin 5: Output

### MEASUREMENT

- Measurement shall be carried out at the standard temperature of  $25 \pm 2^\circ\text{C}$ . If no specific requirements, Test can be carried out under  $5-35^\circ\text{C}$ .
- Measuring Circuit



$R_g + R_1 = R_2 = \text{Output/input Impedance}$

### GENERAL ELECTRICAL PARAMETERS

PARAMETER	UNITS	VALUE			CONDITION
		MIN.	TYPICAL	MAX.	
Operation Temperature	$^\circ\text{C}$	-20		+85	
Storage Temperature	$^\circ\text{C}$	-40		+85	
Temperature Stability	%			$\pm 0.5$	@ $-20^\circ\text{C} \sim +85^\circ\text{C}$
Stop Band Attenuation	dB	40			@ $f_0 \pm 100\text{KHz}$
Ripple	dB			1.0	@ $f_0 \pm 3\text{KHz} \sim 10\text{KHz}$
Spurious Response	dB	20			@ $0.1 \sim 1.0\text{MHz}$
Insulation Resistance	$\text{M}\Omega$	100			@ DC 25V 1 minute

**ELECTRONICAL RIPPLE PARAMETERS – FOR DIFFERENT PART CODE**

Part Code	Center Freq. (KHz)	Min. Bandwidth			Max. Insertion Loss @Min. loss point	Max. GDT Ripple Deviation	Input/ Output Impedance
		@3 dB	@6 dB	@50 dB			
		KHz					
FB450K0000L111	450±1.5	±12.0	±15.0	±30.0	5.0	30 (within f0±10KHz)	1500
FB450K0000L112	450±1.5	±10.0	±12.5	±27.5	6.0	30 (within f0±10KHz)	1500
FB450K0000L113	450±1.0	±8.0	±10.0	±25.0	7.0	30 (within f0±7KHz)	1500
FB450K0000L114	450±1.0	±5.0	±7.50	±20.0	8.0	30 (within f0±5KHz)	1500
FB450K0000L115	450±1.0	±4.5	±6.0	±17.5	8.0	40 (within f0±4.5KHz)	2000
<b>FB450K0000L116</b>	450±1.0	±3.0	±4.5	±15.0	9.0	40 (within f0±3KHz)	2000
FB450K0000L116	455±1.5	±12.0	±15.0	±30.0	5.0	30 (within f0±10KHz)	1500
FB455K0000L112	455±1.5	±10.0	±12.5	±27.5	6.0	30 (within f0±10KHz)	1500
FB455K0000L113	455±1.0	±8.0	±10.0	±25.0	7.0	30 (within f0±7KHz)	1500
FB455K000LG114	455±1.0	±5.0	±7.50	±20.0	8.0	30 (within f0±5KHz)	1500
FB455K0000L115	455±1.0	±4.5	±6.0	±17.5	8.0	40 (within f0±4.5KHz)	2000
FB455K0000L116	455±1.0	±3.0	±4.5	±15.0	9.0	40 (within f0±3KHz)	2000

Note

- Center Frequency f0 is @Center of 6dB Bandwidth.
- Specification is subject to changed without notice, please contact us for any update
- The Parameters in the above table are all general specifications. If you need other Parameters, please contact us.

**PHYSICAL CHARACTERISTICS**

TEST ITEMS	MEASUREMENT CONDITION	REQUIREMENT
Random Drop	Filter shall be measured after 3 times random drops from the height of 30cm on concrete floor	No visible damage and it meet Table at Page 4~5
Vibration	Filter shall be measured after being applied vibration of amplitude of 1.5mm with 10-55Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours	No damage and it meet Table at Page 4~5
Solderability	Lead terminals are immersed in aide solder for 5 sec and then immersed in soldering bath of 230±5°C, for 3±0.5 sec.	At least 95% lead terminals shall be covered with solder.
Substrate Bending Test	Apply pressure in the direction of arrow at a rate of about 0.5mm per second until it reaches a bend of 3mm and hold for 30s.	No damage, no cut-off and it meet Table at Page 4~5
Adhesion	A static load of 20N to the direction of the arrow shall be applied on the core of the component and hold for 10 seconds. Filter shall be soldered correctly and tightly to PCB.	No damage, no cut-off and it meet Table at Page 4~5
Reflow Soldering	Put on the solder paste on the printed wiring board the samples shall be mounted and soldered under the condition, then it shall be subjected to the room atmosphere for 24 hours prior to the measurement.	No damage, no cut-off and it meet Table at Page 4~5

**ENVIRONMENTAL CHARACTERISTICS**

TEST ITEMS	MEASUREMENT CONDITION	REQUIREMENT
Humidity	After being placed in a chamber with 90-95% R.H. at $40\pm 2^{\circ}\text{C}$ for 100 hours and then being placed in room temperature for 1 hour, filter shall be measured.	It shall meet Table at Page 4~5
Resistance to Solder Heat	After being placed in a chamber with $80\pm 2^{\circ}\text{C}$ , for 100 hours and then being placed in room temperature for 1 hour, filter shall be measured.	It shall meet Table at Page 4~5
High Temperature	After being placed in a chamber with $80\pm 2^{\circ}\text{C}$ , for 100 hours and then being placed in room temperature for 1 hour, filter shall be measured.	It shall meet Table at Page 4~5
Low Temperature	After being placed in a chamber with $-20\pm 2^{\circ}\text{C}$ , for 100 hours and then being placed in room temperature for 1 hour, filter shall be measured.	It shall meet Table at Page 4~5
Heat Shock	After being kept at room temperature, filter shall be placed at temperature of $-55^{\circ}\text{C}$ , for 30 minutes, then be placed at temperature. $85^{\circ}\text{C}$ , for 30 minutes. After that returned to $-55^{\circ}\text{C}$ again. Repeated above cycle for 5 times. After being kept in room temp. for 1 hour, filter shall be measured	It shall meet Table at Page 4~5

## IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.