



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Piezoelectronic Ceramic Filters

Lead type

10.7MHz

FFE series

Issue date: August 2007

- All specifications are subject to change without notice.
 - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
-

Ceramic Filters

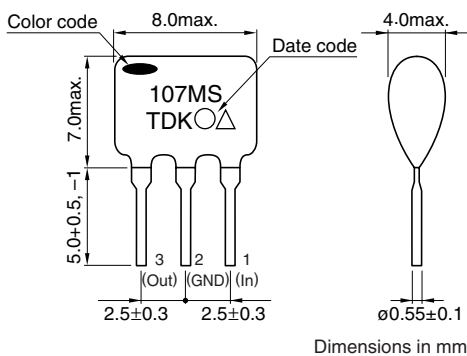
FFE Series(Lead)

Conformity to RoHS Directive

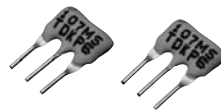
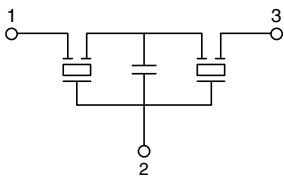
FEATURES

- To small dispersion of center frequency in our products, devices in a single rank can be supplied. Consequently, adjustment-free IC circuits are easy produced.
- Because of the small characteristic dependence on temperature, IF circuit can be made to have a highly stabilized temperature(Temperature coefficient of center frequency : $\pm 50\text{ppm}/^\circ\text{C}$).
- The size and weight are small and light.
- Because of the small loss dispersion as well as the low loss characteristics, a product of high sensitivity can be manufactured in the form of set.
- Ammo packing is available for various automatic insert machine (1800pieces/box). Short lead type and L-bend lead type are also available, please contact TDK.
- The products do not contain lead at solder of internal joint and solder plating of lead wire. You can use both Pb free solder (Sn-3Ag-0.5Cu) and Sn-Pb eutectic solder on your production.

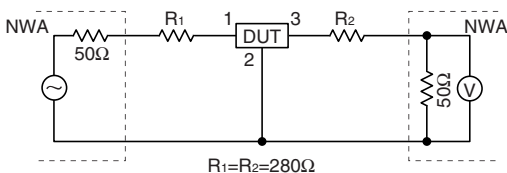
SHAPES AND DIMENSIONS



CIRCUIT DIAGRAM



MEASUREMENT CIRCUIT



Reference Level: Short condition between 1 and 3 without DUT.

PRODUCT IDENTIFICATIONS

FFE	1070	MA	11	U	X	L
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

FFE	Ceramic filter
-----	----------------

(2) Center frequency

1060	10.600MHz
1070	10.700MHz
1080	10.800MHz

(3) 3dB band width(BW3)

MA	280±50kHz
NA	230±50kHz
MS	180±40kHz
MJ	150±40kHz

(4) Center frequency tolerance

10	±20kHz
11	±30kHz

(5) Packaging style for product type

Symbol	Shapes dimensions (mm)max.		Packaging style	BW3 symbol			
	Width	Height		MA	NA	MS	MJ
U	7.0	7.0	Bulk	✓	✓		
S	8.0	7.0	Bulk				✓
F	8.0	7.0	Bulk				✓
H	7.0	7.0	Ammo pack	✓	✓		
R	8.0	7.0	Ammo pack				✓
T	8.0	7.5	Ammo pack				✓

(6) Electrical characteristics

Symbol	Classification	BW3 symbol			
		MA	NA	MS	MJ
A	Low loss	✓	✓	✓	✓
B	Standard	✓	✓		
X	Standard	✓	✓		
Others	Custom made				

(7) Lead length

L	5.0+0.5, -1.0mm Taping (Ammo pack)
M	3.0±0.5mm
Others	Custom made

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

Part No.	3dB band width (kHz)	20dB band width (kHz)max.	Insertion loss (dB)max.	SPR attenuation (dB)min.
Standard type				
FFE1070MA11UXL	280±50	600	6.0	35
FFE1070NA11UXL	230±50	570	6.0	35
FFE1070MS11SBL	180±40	520	7.0	35
FFE1070MJ11FBL	150±40	400	10.0	35
Low loss type				
FFE1070MA11UAL	280±50	600	5.0	35
FFE1070NA11UAL	230±50	570	4.5	35
FFE1070MS11SAL	180±40	520	5.0	35
FFE1070MJ11FAL	150±40	400	7.0	35
Group delay time control type				
FFE1070NA10UGL*	230±50	570	6.0	35
FFE1070MS10SGL*	180±40	520	7.0	35

* Group delay time: 0.50max.

RELIABILITY AND TEST CONDITIONS

The following test items are satisfied.

- (1) Center frequency: Within ±30kHz
- (2) 3dB band width: Within ±20kHz
- (3) 20dB band width: Within ±30kHz
- (4) Insertion loss: Within ±2dB
- (5) Attenuation: 25dB min.

Test items	Test conditions
Low temperature storage characteristics	Temperature: -40±3°C Time: 100h
High temperature storage characteristics	Temperature: +85±2°C Time: 100h
Humidity resistance	Loading: DC.5V(between in/out and ground terminal) Humidity: 90 to 95(%)RH Temperature: 60±2°C Time: 100h
Thermal shock	-40°C (30min), 85°C (30min) x 5 cycles
Soldering heat resistance	Solder temperature: peak 260°C, 10s flow
Drop	Drop 3 times onto a hard wooden board from a height of 1m
Vibration	Frequency: 10 ⇄ 55 ⇄ 10Hz/Amplitude: 1.5mm X, Y and Z directions for 2h each

SOLDERABILITY

The lead wires are adopted Pb free plating wire to apply Pb free soldering. You can also use current Sn-Pb eutectic solder.

Test conditions	Test result
With Rosin-methanol 25% by weight, dip in Sn-Pb eutectic solder bath at 230±5°C for 3±0.5sec. or Pb free solder(Sn-3Ag-0.5Cu) bath at 245±2°C for 3±0.2sec.	95% minimum of surface should be covered by new solder.

RECOMMENDED SOLDERING CONDITIONS

This is the fit product for flow soldering.

FLOW SOLDERING CONDITION

Heat-resistant temperature	260±5°C
Heat-resistant time	10±1sec.
Number of times	1time