

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.

&TDK

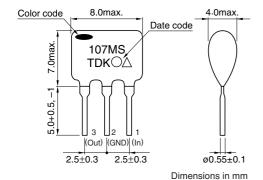
Ceramic Filters FFE Series(Lead)

Conformity to RoHS Directive

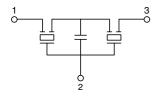
FEATURES

- 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: ±50ppm/°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

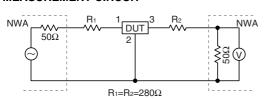


CIRCUIT DIAGRAM





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 (mm)ma	dimensions x.	Packaging	BW3 symbol			
	Width	Height	- style	MA	NA	MS	MJ
U	7.0	7.0	Bulk	✓	✓		
S	8.0	7.0	Bulk			✓	
F	8.0	7.0	Bulk				✓
Н	7.0	7.0	Ammo pack	✓	✓		
R	8.0	7.0	Ammo pack			✓	
Т	8.0	7.5	Ammo pack				✓

(6) Electrical characteristics

Combal Classification		BW3 symbol			
Symbol	bol Classification		NA	MS	MJ
A	Low loss	✓	✓	✓	✓
В	Standard	✓	✓		
X	Standard	✓	✓		
Others	Custom made				

(7) Lead length

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

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ELECTRICAL CHARACTERISTICS

Part No.	3dB band width	20dB band width	Insertion loss	SPR attenuation
Part No.	(kHz)	(kHz)max.	(dB)max.	(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	Temperature: -40±3°C
storage characteristics	Time: 100h
High temperature	Temperature: +85±2°C
storage characteristics	Time: 100h
	Loading: DC.5V(between in/out and
	ground terminal)
Humidity resistance	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
Dran	Drop 3 times onto a hard wooden board
Drop	from a height of 1m
	Frequency: 10 ⇔55 ⇔ 10Hz/Ampli-
Vibration	tude: 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	95% minimum of
eutectic solder bath at 230±5°C for 3±0.5sec. or	surface should be
Pb free solder(Sn-3Ag-0.5Cu) bath at 245±2°C	covered by new solder.
for 3+0 2sec	

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