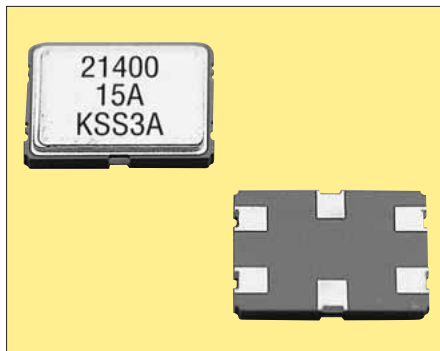




Ph Free

RoHS Conforming

Features

- Compact and low profile.(Height=1.3mm)
- Excellent vibration resistance and shock resistance.
- Designed for automatic mounting and reflow soldering.

Applications

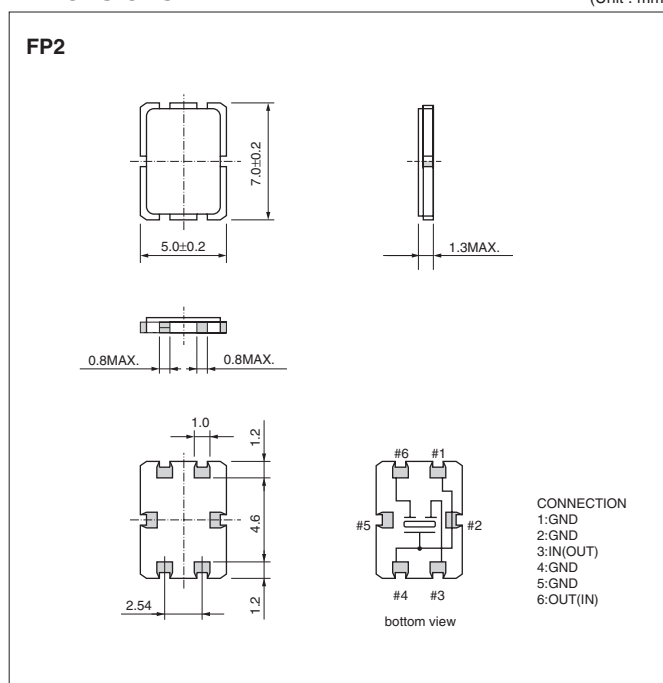
- Mobile communication

Specifications

Type	Number of inner units	Pass Bandwidth		Ripple	Insertion Loss	Stop Bandwidth		Terminating Impedance	Operating Temp.Range
		dB	kHz MIN	dB MAX	dB MAX	dB	kHz MAX	$\Omega/\mu\text{F}$	$^{\circ}\text{C}$
MXF21.4-15A-FP2	1	3	± 7.5	0.5	1.5	18	± 25	1.5k/2.5	-20~+70
MXF21.7-8A-FP2	1	3	± 3.5	1	2	16	± 12.5	1.5k/6	-20~+70
MXF45-15AF-FP2	1	3	± 7.5	1	2.5	14	± 25	550/3	-20~+70
MXF45-30AF-FP2	1	3	± 15	1	2	15	± 50	1.2k/1.5	-20~+70
MXF55-26AF-FP2	1	3	± 13	1	3	27	± 100	750/2.7	-20~+70

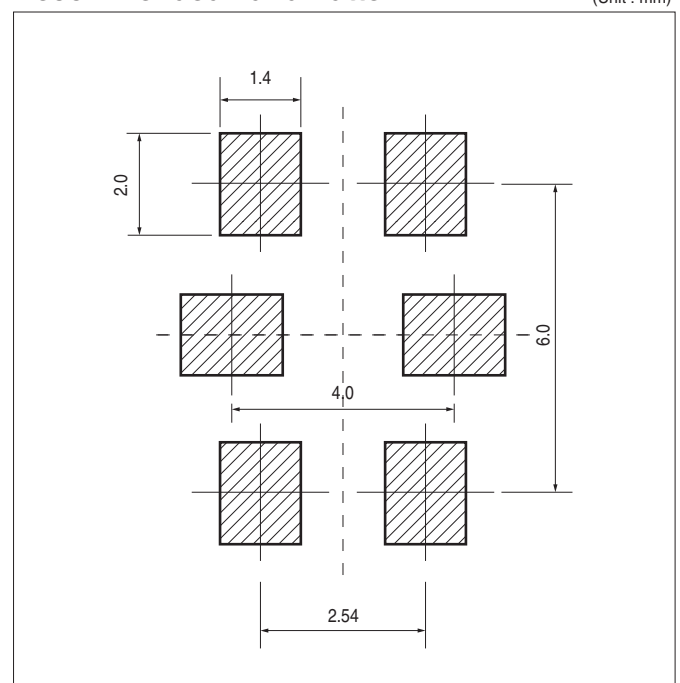
Dimensions

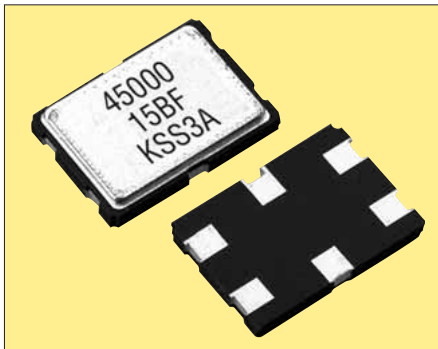
(Unit : mm)



Recommended Land Pattern

(Unit : mm)





Pb Free

RoHS Comforming

Features

- Compact size.(7x5x1.3mm, 4pole)
- Excellent vibration resistance and shock resistance.
- Designed for automatic mounting and reflow soldering.

Applications

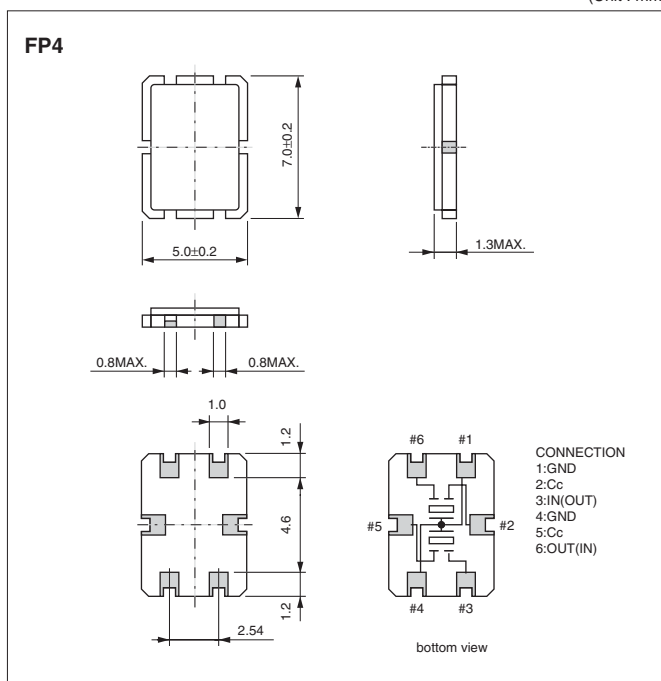
- Mobile communication

Specifications

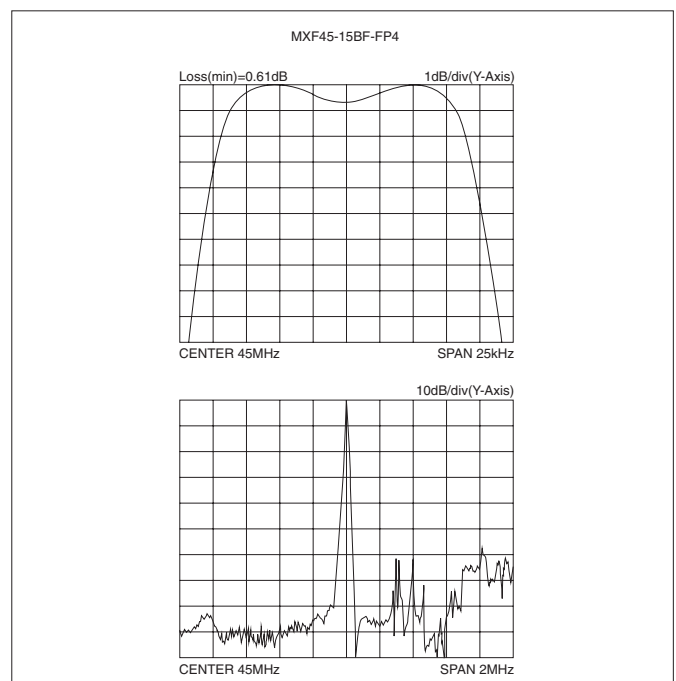
Type	Number of inner units	Pass Bandwidth		Ripple	Insertion Loss	Stop Bandwidth		Terminating Impedance	Operating Temp.Range
		dB	kHz MIN	dB MAX	dB MAX	dB	kHz MAX	Ω //pF	°C
MXF45-7.5BF-FP4	1	3	± 3.75	1	4	30	± 15	500//4.5 Cc(13pF)	-20~+70
MXF45-15BF-FP4	1	3	± 7.5	1.5	2	30	± 25	600//2.3 Cc(7.5pF)	-20~+70
MXF45-30BF-FP4	1	3	± 15	1	3	30	± 40	1.2k//1 Cc(2.5pF)	-20~+70

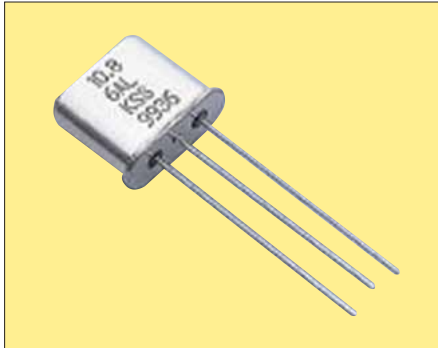
Dimensions

(Unit : mm)



Electrical Characteristics





Features

- Compact and light weight.
- Excellent vibration resistance and shock resistance.
- Stable temperature characteristics.

Applications

- Car audio

*Pb Free and RoHS conformance planned on Jan. 2005.

Specifications

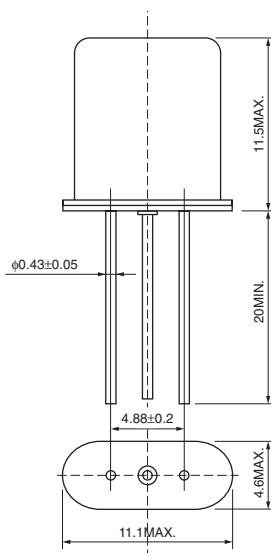
Type	Number of inner units	Pass Bandwidth		Ripple	Insertion Loss	Stop Bandwidth		Terminating Impedance	Operating Temp.Range	Outline
		dB	kHz	dB MAX	dB MAX	dB	kHz MAX	$\Omega/\mu\text{F}$	$^{\circ}\text{C}$	
MXF10.7-6A	1	3	$\pm(2.5\sim3.5)$	1	1.5	30	55	1.5k//3	$-40\sim+85$	Fig.1
MXF10.7-6AL	1	3	$\pm(2.5\sim3.5)$	1	3	30	55	1.5k//3	$-40\sim+85$	Fig.2
MXF10.7-7.5A	1	3	± 3.75 MIN	0.5	1.5	20	± 18	1.8k//5	$-40\sim+85$	Fig.1
MXF10.7-7.5AL	1	3	± 3.75 MIN	0.5	3	20	± 18	1.8k//5	$-40\sim+85$	Fig.2
MXF10.8-6A	1	3	$\pm(2.5\sim3.5)$	1	1.5	30	55	1.5k//3	$-40\sim+85$	Fig.1
MXF10.8-6AL	1	3	$\pm(2.5\sim3.5)$	1	3	30	55	1.5k//3	$-40\sim+85$	Fig.2
MXF10.8-16AL	1	3	$\pm(7.5\sim8.5)$	1	3	20	55	2.2k//2.5	$-40\sim+85$	Fig.2

Dimensions

(Unit : mm)

Fig. 1

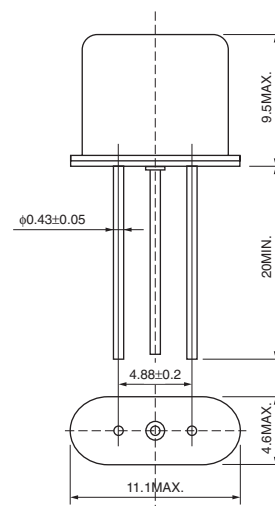
49/U-11



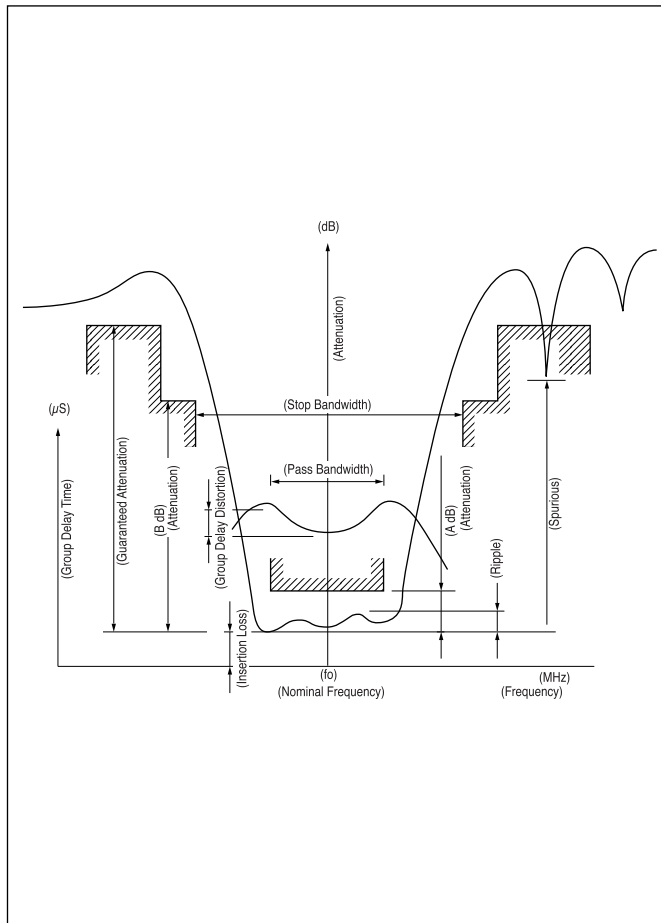
(Unit : mm)

Fig. 2

49/U-9



Characteristic diagram and terms of crystal filters

**■Nominal Frequency**

This is the nominal value of the center frequency (f_0) and is used as the reference frequency of related standards.

■Pass Bandwidth

This is the frequency interval in which the relative attenuation (the attenuation from the minimum insertion loss) is equal to the specified value "A dB" (Usually 3dB).

■Insertion Loss

This is the difference of attenuation when a filter is and isn't inserted. The minimum insertion loss is the minimum value of insertion loss and becomes as the reference level of attenuation characteristics specification. The constant loss is the insertion loss at the nominal frequency.

■Ripple

This is the maximum value of the difference between the peak value of attenuation in the pass band and the minimum insertion loss.

■Stop Bandwidth

This is the frequency interval in which the relative attenuation is equal to the specified value "B dB".

■Guaranteed Attenuation

This is the relative attenuation guaranteed in the specified range within attenuation band scope.

■Spurious Response

This is the value of relative attenuation generated by the secondary vibration in the specified range within attenuation band scope.

■Group Delay Time

This is the difference between the maximum and the minimum value of the group delay in the specified range of the pass band.

■Terminating Impedance

This is the impedance value terminated to the input and the output side of filter and is indicated by the resistance portion and the parallel capacity portion including the floating capacity.

ORDERING FORMAT for CRYSTAL FILTERS

Please specify the following items when ordering crystal filters.

I. Standard product in catalog Indicate type name.

for example : MXF10.7-6A

II. Indicate following items in specification if you order special type.**1. Electrical Characteristics**

- | | |
|---------------------------|-------------------------------------|
| (1)Nominal Frequency | _____MHz |
| (2)Pass Bandwidth | at _____dB $\pm$ _____kHz MIN. |
| (3)Stop Bandwidth | at _____dB $\pm$ _____kHz MAX. |
| (4)Guaranteed Attenuation | _____dB MINn. ($f_0 \pm$ _____kHz) |
| (5)Spurious Response | _____dB MIN. |
| (6)Ripple | _____dB MAX. |
| (7)Insertion Loss | _____dB MAX. |
| (8)Terminating Impedance | _____Ω//_____pF |

2. Environmental Condition

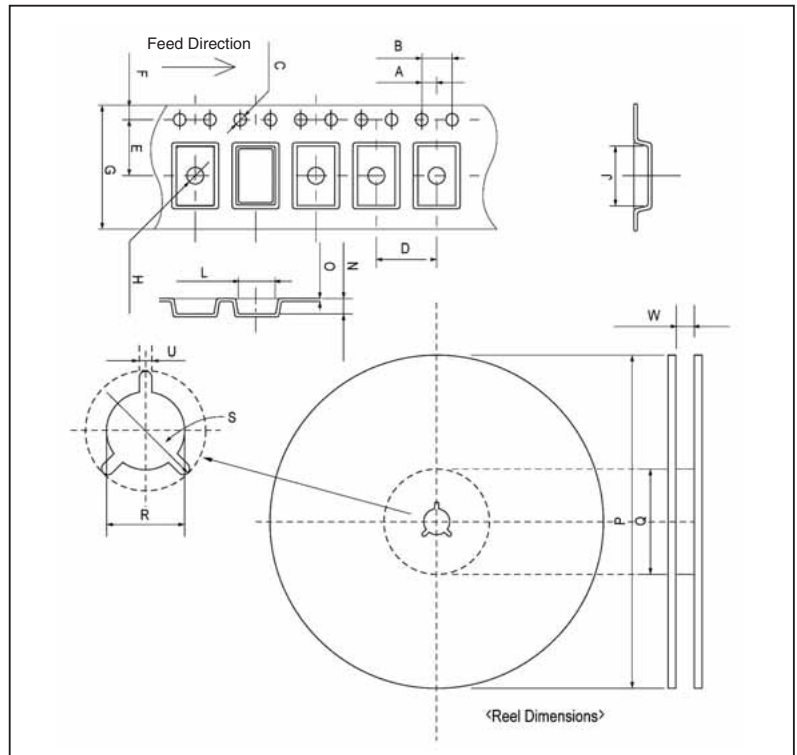
- (1)Operating Temperature Range _____°C ~ _____°C

3. Dimensions**4. Application**

Tape & Reel Specifications

SAW FILTERS / MCFs

SAW FILTERS				
		SF16	SF25	SF30
T A P E	A	2.0±0.05	2.0±0.05	2.0±0.05
	B	4.0±0.1	4.0±0.1	4.0±0.1
	C	φ1.5±0.1	φ1.55±0.1/-0	φ1.55±0.1/-0
	D	4.0±0.1	4.0±0.1	8.0±0.1
	E	3.5±0.05	5.5±0.05	5.5±0.05
	F	1.75±0.1	1.75±0.1	1.75±0.1
	G	8.0±0.2	12.0±0.2	12.0±0.2
	H	φ1.1±0.1	φ1.1±0.1	φ1.55±0.1
	J	1.9±0.1	2.9±0.1	3.3±0.1
	L	1.85±0.1	2.4±0.1	3.3±0.1
	N	0.95±0.1	1.2±0.1	1.85±0.1
R E E L	O	0.25±0.05	0.3±0.05	0.3±0.05
	P	φ178±2	φ330±2	φ330±2
	Q	φ80±2	φ100±2	φ100±2
	R	φ13±0.2	φ13±0.2	φ13±0.2
	S	φ21±0.8	φ21±0.8	φ21±0.8
	U	2±0.5	2±0.5	2±0.5
Qty		3000	3000	3000



SAW FILTERS										MCF
		PAFA	PAFC243B	PAFC433.92A	B54	B22 B43	B19 B25	C12 C30	B44	FP2 FP4
T A P E	A	2.0±0.05	2.0±0.05	2.0±0.05	2.0±0.10	2.0±0.10	2.0±0.05	2.0±0.10	2.0±0.10	2.0±0.1
	B	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1	4.0±0.1
	C	φ1.55±0.05	φ1.5±0.1/-0	φ1.5±0.1/-0	φ1.55±0.05	φ1.55±0.05	φ1.55±0.05	φ1.55±0.05	φ1.55±0.05	φ1.55±0.05
	D	8.0±0.1	8.0±0.1	8.0±0.1	8.0±0.1	8.0±0.1	8.0±0.1	8.0±0.1	8.0±0.1	8.0±0.1
	E	5.5±0.05	5.5±0.05	5.5±0.05	5.5±0.1	7.5±0.1	5.5±0.05	7.5±0.1	5.5±0.05	7.5±0.1
	F	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1	1.75±0.1
	G	12.0±0.2	12.0±0.2	12.0±0.3	12.0±0.3	16.0±0.3	12.0±0.15	16.0±0.3	12.0±0.2	16.0±0.3
	H	φ1.55±0.05	φ1.55±0.1	φ1.55±0.1	φ1.5±0.05/-0	φ1.55±0.05	φ1.55±0.05	φ1.55±0.05	φ1.55±0.05	φ1.55±0.05
	J	3.3±0.1	4.3±0.1	5.3±0.1	5.25±0.1	9.4±0.1	4.2±0.1	7.6±0.1	3.95±0.2	7.5±0.1
	L	3.3±0.1	4.3±0.1	5.3±0.1	3.45±0.1	5.1±0.1	4.2±0.1	5.6±0.1	3.95±0.2	5.5±0.1
	N	1.85±0.1	2.05±0.1	2.1±0.1	1.5±0.1/-0	2.0±0.1	1.8±0.1	1.94±0.1	1.35±0.1	1.8±0.1
R E E L	O	0.3±0.05	0.3±0.05	0.3±0.05	0.3±0.1	0.3±0.05	0.3±0.05	0.3±0.05	0.2±0.05	0.3±0.05
	P	φ255±2	φ255±2	φ255±2	φ330±1	φ330±1	φ178±2	φ330±1	φ178±2	φ178±2
	Q	φ100±2	φ80±2	φ80±2	φ100±1	φ100±1	φ80±1	φ100±1	φ80±1	φ80±2
	R	φ13±0.2	φ13±0.2	φ13±0.2	φ13±0.3	φ13±0.3	φ13±0.5	φ13±0.3	φ13±0.5	φ13±0.5
	S	φ21±0.8	φ21±0.8	φ21±0.8	φ21±0.5	φ21±0.5	φ21±0.5	φ21±0.5	φ21±0.5	φ21±0.8
	U	2±0.5	2±0.5	2±0.5	2±0.5	2±0.5	2±0.5	2±0.5	2±0.5	2±0.5
Qty		2000	2000	2000	3000	3000	1000	3000	1000	1000