FUJITSU SEMICONDUCTOR
DATA SHEET

DS04-20101-1E

ASSP

TIMING EXTRACTION FILTER (50 to 300MHz)

F4 SERIES

■ DESCRIPTION

The F4 series are timing extraction filter used in the high-grade digital transmission equipment like wide-band ISDN. The F4 series uses a single lithium tantalate piezoelectric crystal ($L_iT_aO_3$) that has large electromechanical coupling coefficient, and a unique SAW resonator. That provides wide bandwidths, insertion loss, and exceptional stability in VHF band until 300MHz.

■ FEATURES

- Wide frequency range: 50 to 300MHz
- Wide band width: 0.3 to 1.0%
- Low insertion loss: 6dB or less
- Excellent temperature characteristics: ±200 ppm or less (0 to 60°C)
- No adjustment is required due to small frequency deviation: $\Delta fo < \pm 500ppm$
- High reliable hermetically sealed package
- Small type, and compatible with 14-pin DIP IC

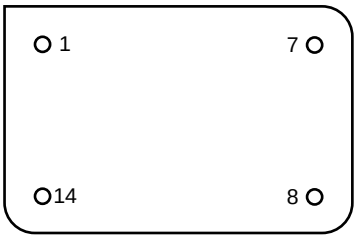
■ PACKAGE

14-pin DIP size metal case

■ PIN ASSIGNMENT

Pin number	Pin name	Description
1	IN	Input pin
7	GND	Ground pin
8	NC	No connection
14	OUT	Output pin

(BOTTOM VIEW)



■ MAXIMUM RATINGS

Item	Symbol	Rating	Unit
Operating temperature	Ta	–20 to 80	°C
Storage temperature	Tstg	–30 to 80	°C
Insulation resistance	IR	100 (100V DC)	MΩ
Frequency range	—	50 to 300	MHz

■ RECOMMENDED OPERATING CONDITIONS

Item	Symbol	Rating	Unit
Operating temperature	Ta	0 to 70	°C

■ STANDARD FREQUENCIES

Frequency	Application	Part number
51.84MHz	Wide band ISDN	FAR-F4DA-51M840-G201
97.728MHz	Japanese fourth group	FAR-F4DA-97M728-G201
155.52MHz	Wideband ISDN	FAR-F4DA-155M52-G201

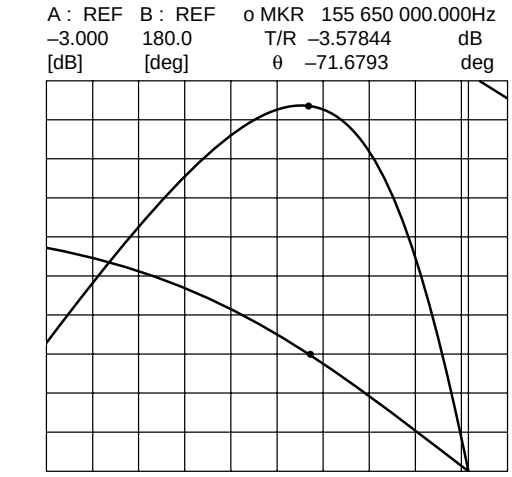
■ ELECTRICAL CHARACTERISTICS

Item	Symbol	Condition	Rated value			Unit	Remarks
			Min.	Typ.	Max.		
Frequency deviation	Δf_O	—	–500	—	+500	ppm	f_0 standard
Load Q	Q	—	100	—	333	––	
Insertion loss	IL	—	—	—	6	dB	
Stop band attenuation	A_{OUT}	f_O ± 10MHz	15	—	—	dB	
Frequency temperature stability	Δf (Ta)	—	–300	—	+300	ppm	25°C standard Ta = 0 to 70°C
Terminate impedance	Z	—	10	—	50	Ω	

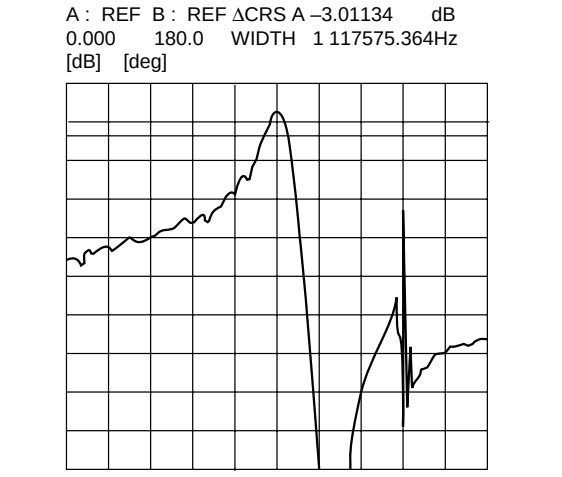
■ CHARACTERISTICS EXAMPLE

155.52MHz example

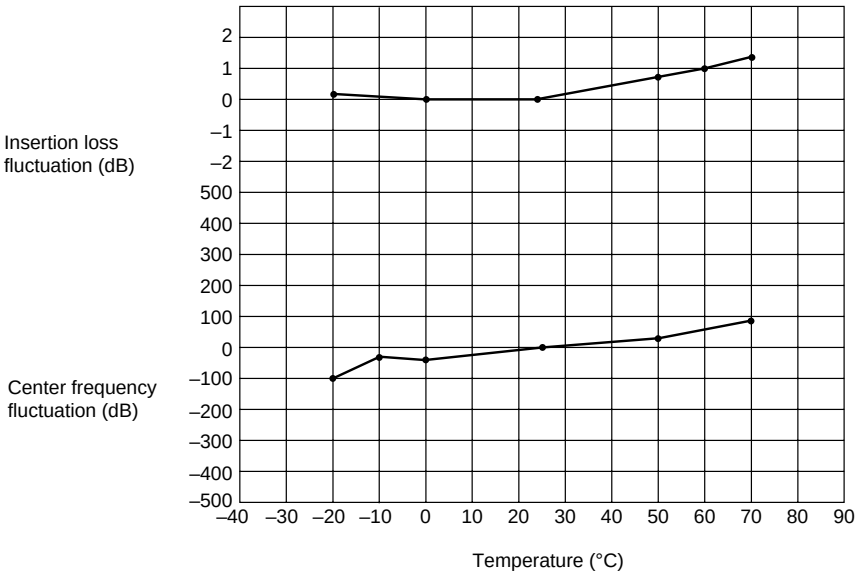
Pass band characteristic



Stop band characteristic



Temperature characteristic



■ PART NUMBERING SYSTEM

[Example]

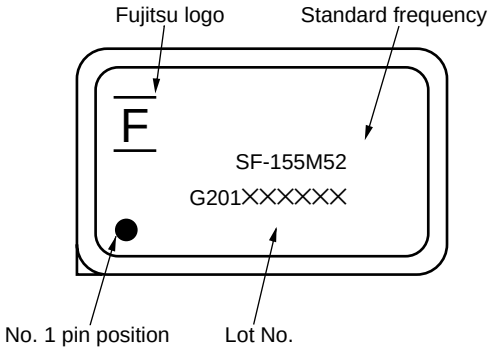
FAR–F4DA–□□□□□□ –G □□□
u 1

u Frequency designation : Designate the standard frequency in six characters.
M indicates the decimal point in MHz.

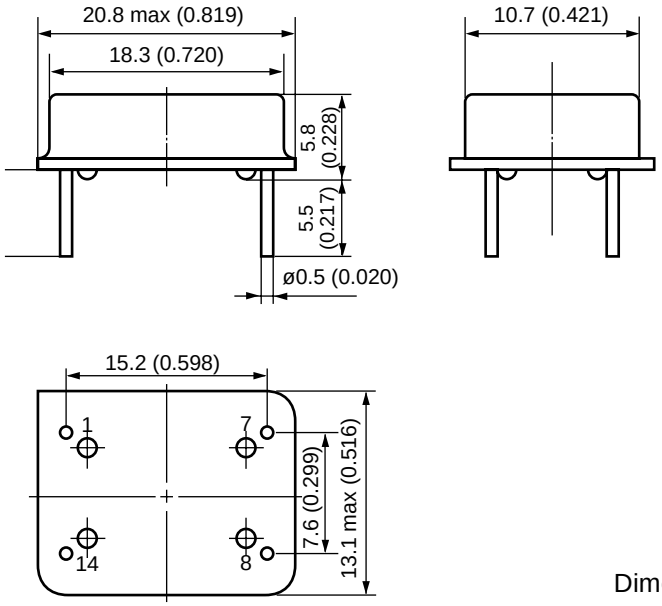
Frequency	Designation
51.84 MHz	51M840
97.728 MHz	97M728
115.52 MHz	115M52

1 Serial number : Specify 201 to 999 (201 is normal).

■ MARKING



■ DIMENSIONS



Dimensions in mm (inches)

FUJITSU LIMITED

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