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 (L₁T₂O₃) 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:

 Δ fo < ±500ppm

- · High reliable hermetically sealed package
- Small type, and compatible with 14-pin DIP IC

■ PACKAGE



14-pin DIP size metal case

F4 SERIES

■ 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))
01		70
O14		80

■ MAXIMUM RATINGS

Item	Symbol	Rating	Unit
Operating temperature	Та	-20 to 80	°C
Storage temperature	Tstg	-30 to 80	°C
Insulation resistance	IR	100 (100V DC)	МΩ
Frequency range		50 to 300	MHz

■ RECOMMENDED OPERATING CONDITIONS

Item	Symbol	Rating	Unit
Operating temperature	Та	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

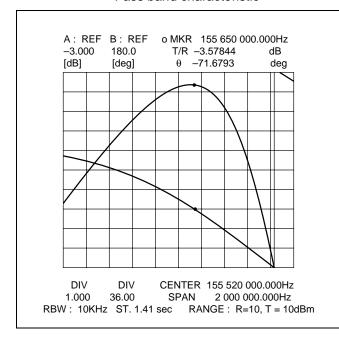
■ ELECTRICAL CHARACTERISTICS

ltom Sumbol	Condition	Rated value			l lmit	Domostro	
Item	Symbol	Condition	Min.	Тур.	Max.	Unit	Remarks
Frequency deviation	$\Delta f o$		-500		+500	ppm	fo standard
Load Q	Q		100		333		
Insertion loss	IL				6	dB	
Stop band attenuation	Аоит	fo ± 10MHz	15			dB	
Frequency temperature stability	∆f (Ta)		-300		+300	ppm	25°C standard Ta = 0 to 70°C
Terminate impedance	Z		10		50	Ω	

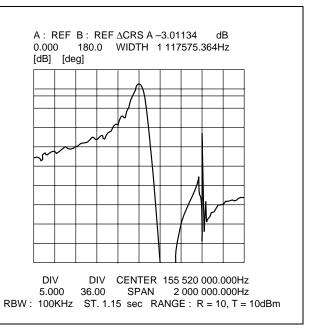
■ CHARACTERISTICS EXAMPLE

155.52MHz example

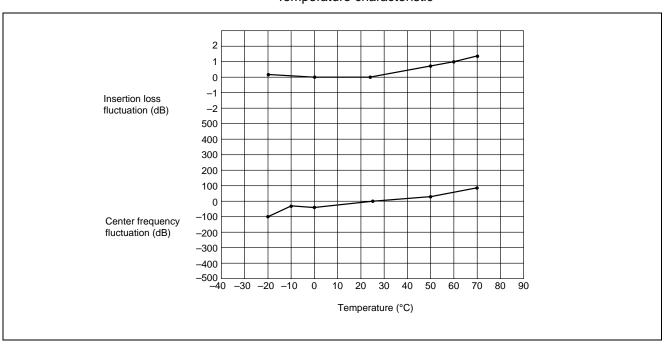
Pass band characteristic



Stop band characteristic



Temperature characteristic



F4 SERIES

■ PART NUMBERING SYSTEM

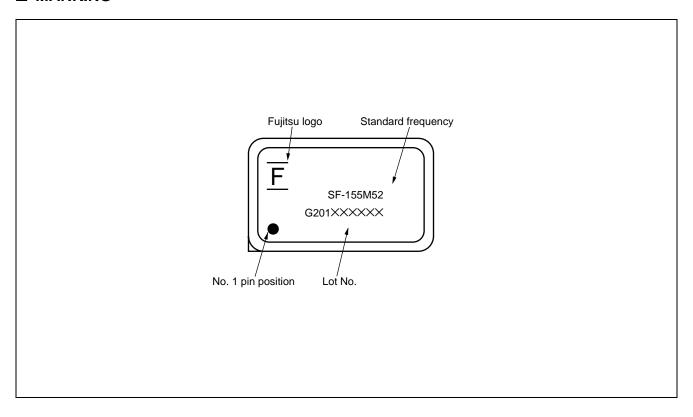
u Frequency designation: Designate the standard frequency in six characters.

M indicates the decimal point in MHz.

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

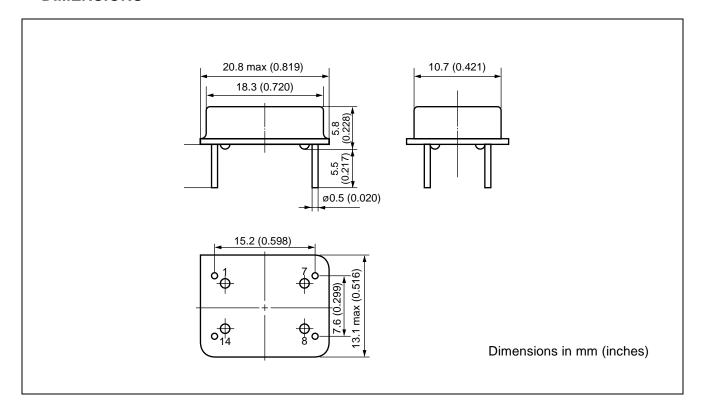
1 Serial number: Specify 201 to 999 (201 is normal).

■ MARKING



F4 SERIES

■ DIMENSIONS



FUJITSU LIMITED

For further information please contact:

Japan

FUJITSU LIMITED
Corporate Global Business Support Division
Electronic Devices
KAWASAKI PLANT, 4-1-1, Kamikodanaka
Nakahara-ku, Kawasaki-shi
Kanagawa 211-88, Japan

Tel: (044) 754-3753 Fax: (044) 754-3332

North and South America

FUJITSU MICROELECTRONICS, INC. Semiconductor Division 3545 North First Street San Jose, CA 95134-1804, U.S.A. Tel: (408) 922-9000

Fax: (408) 432-9044/9045

Europe

FUJITSU MIKROELEKTRONIK GmbH Am Siebenstein 6-10 63303 Dreieich-Buchschlag Germany

Tel: (06103) 690-0 Fax: (06103) 690-122

Asia Pacific

FUJITSU MICROELECTRONICS ASIA PTE. LIMITED No. 51 Bras Basah Road, Plaza By The Park, #06-04 to #06-07 Singapore 189554

Tel: 336-1600 Fax: 336-1609

All Rights Reserved.

Circuit diagrams utilizing Fujitsu products are included as a means of illustrating typical semiconductor applications. Complete Information sufficient for construction purposes is not necessarily given.

The information contained in this document has been carefully checked and is believed to be reliable. However, Fujitsu assumes no responsibility for inaccuracies.

The Information contained in this document does not convey any license under the copyrights, patent rights or trademarks claimed and owned by Fujitsu.

Fujitsu reserves the right to change products or specifications without notice.

No part of this publication may be copied or reproduced in any form or by any means, or transferred to any third party without prior written consent of Fujitsu.

The information contained in this document is not intended for use with equipments which require extremely high reliability such as aerospace equipments, undersea repeaters, nuclear control systems or medical equipments for life support.

F9608

© FUJITSU LIMITED Printed in Japan