
ASSP Mobile Communication Systems PIEZOELECTRICAL SAW BPF (1000-2500MHz) F6 Series (L2 type)

DESCRIPTION

The F6 series of SAW bandpass filters apply to the frequency range 1000-2500MHz. The SAW filters are fabricated on a lithium tantalate (LiTaO₃) substrate, producing filters with a wide frequency bandwidth, low insertion loss in passband and superior stability due to the high electromechanical coupling coefficient of the material. Fujitsu's leading techniques for making filter pattern designs realized this high frequency filter.

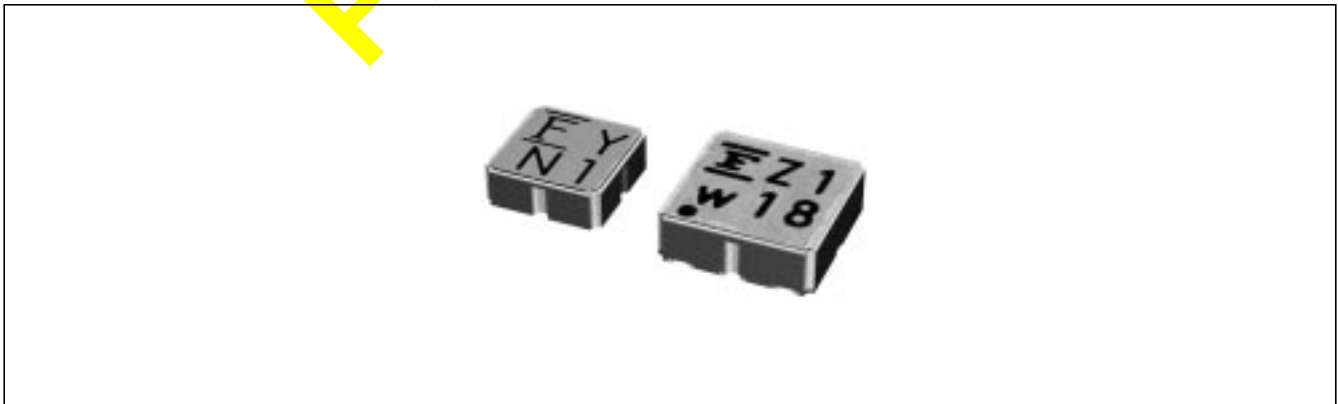
The F6 series filters are housed in a small surface mount package. Moreover, the impedance in the passband is 50 ohms, and so applications require no external matching circuits.

The F6 series SAW filters are suitable for interstage RF filter in mobile communications systems in the submicrowave frequency band. Standard devices are available for PDC1.5G, PCS, DCS1800, and 2.4GHz Wireless LAN systems

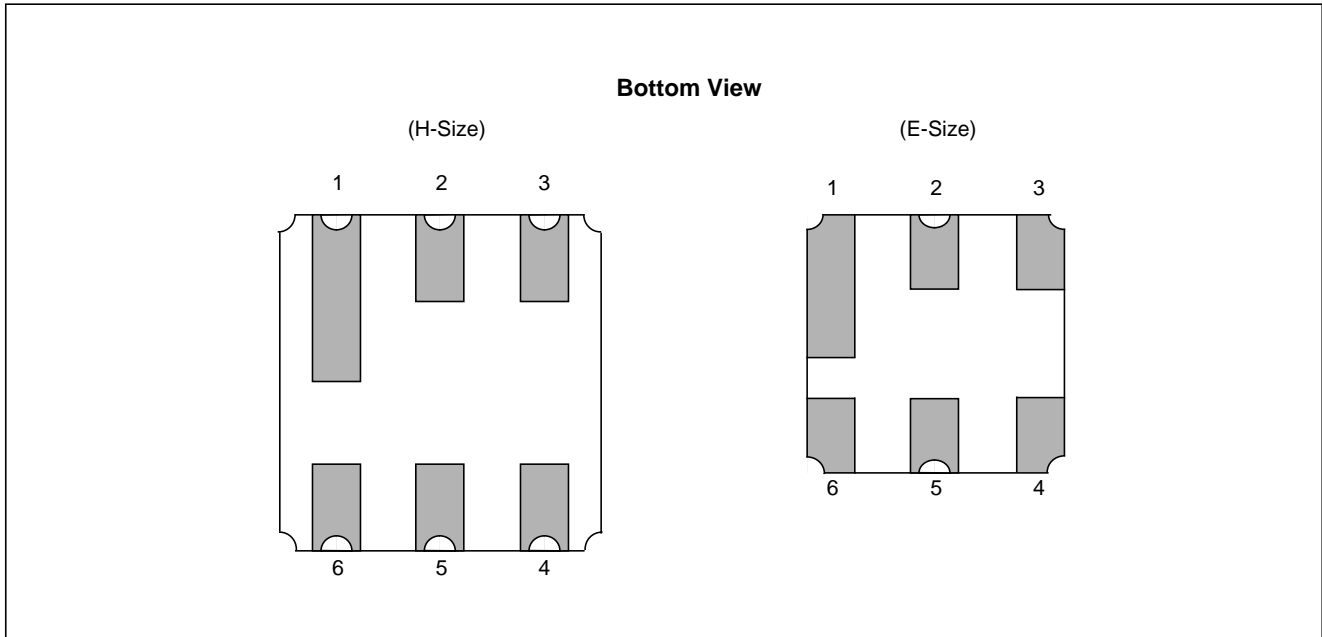
FEATURES

- Low insertion loss
- Ultra compact and light package (3.8mm[□], 3.0mm[□])
- External matching circuits are not required.
- Surface mount package (SMT)
- Wide variety of standard devices for worldwide mobile communication systems

PACKAGE



PIN ASSIGNMENT



DESCRIPTION

Pin No.	Pin Name	Description
1	GND	Ground Pin
2	IN	Input Pin
3	GND	Ground Pin
4	GND	Ground Pin
5	OUT	Output Pin
6	GND	Ground Pin

MAXIMUM RATINGS

Item	Symbol	Rating	Unit
Operating Temperature	T_a	-30 to 85	°C
Storage Temperature	T_{stg}	-40 to 100	°C
Frequency Range	-	1000 to 2500	MHz
Maximum Input Level	P_{IN}	Refer to electrical characteristics	mW

RECOMMENDED OPERATION CONDITIONS

Item	Symbol	Rating	Unit
Operating Temperature	T_a	-30 to 85*	°C

Note: *Standard Rating for Wireless LAN Systems is 0 to 60 °C

STANDARD FREQUENCIES

System		Center Freq.	BW(MHz)	Part Symbol	Part Number	Package Size
PDC1.5G	Tx	1441.0	24	ZL	FAR-F6CH-1G4410-L2ZL	H
	Rx	1489.0	24	ZM	FAR-F6CH-1G4890-L2ZM	H
	Lo	1619.0	24	ZN	FAR-F6CH-1G6190-L2ZN	H
DSC1800	Tx	1747.5	75	A	FAR-F6CE-1G7475-L2YA	E
	Rx	1842.5	75	B	FAR-F6CE-1G8425-L2YB	E
PCS	Tx	1880.0	60	C	FAR-F6CE-1G8800-L2XA	E
	Rx	1960.0	60	D	FAR-F6CE-1G9600-L2XB	E
Wireless LAN		2448.5	97	E	FAR-F6CE-2G4500-L2WA	E
		2484.0	26	P	FAR-F6CE-2G4840-L2WC	E
		2441.8	83	-L	FAR-F6CE-2G4418-L2WD	E

F6 Series (L2 Type)

1. PDC1.5G (Tx)

Part Number : FAR-F6CH-1G4410-L2ZL

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	1429-1453 MHz	-	2.2	3.2	dB	
Inband Ripple		1429-1453 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC-1380 MHz	25	27	-	dB	
		1477-1501 MHz	15	22	-	dB	
		1501-1607 MHz	33	38	-	dB	
		1607-1631 MHz	35	38	-	dB	
		1631-1900 MHz	30	35	-	dB	
		1900-2906 MHz	18	23	-	dB	
Inband VSWR		1429-1453 MHz	-	1.7	2.0	-	
Input Power	P_{IN}	1429-1453MHz	-	-	200	mW	

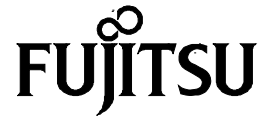
2. PDC1.5G (Rx)

Part Number : FAR-F6CH-1G4890-L2ZM

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	1477-1501 MHz	-	2.2	3.0	dB	
Inband Ripple		1477-1501 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC-1200 MHz	25	27	-	dB	
		1200-1370 MHz	30	33	-	dB	
		1370-1429 MHz	25	27	-	dB	
		1429-1453 MHz	10	18	-	dB	
		1542-1566 MHz	20	35	-	dB	
		1566-1607 MHz	30	39	-	dB	
		1607-1761 MHz	35	40	-	dB	
		1761-1900 MHz	30	36	-	dB	
	1900-3000 MHz	20	22	-	dB		
Inband VSWR		1477-1501 MHz	-	1.5	2.0	-	
Input Power	P_{IN}	1477-1501 MHz	-	-	200	mW	

F6 Series (L2 Type)



3. PDC1.5G (Lo)

Part Number : FAR-F6CH-1G6190-L2ZN

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	1607-1631 MHz	-	3.0	3.3	dB	
Inband Ripple		1607-1631 MHz	-	1.5	2.0	dB	
Absolute Attenuation		DC-130 MHz	30	38	-	dB	
		130-1501 MHz	25	28	-	dB	
		1737-1809 MHz	30	35	-	dB	
		1809-2500 MHz	20	29	-	dB	
		3214 MHz	15	25	-	dB	
Inband VSWR		1607-1631 MHz	-	1.6	2.0	-	
Input Power	P_{IN}	1607-1631 MHz	-	-	200	mW	

4. DCS1800 (Tx)

Part Number : FAR-F6CE-1G7475-L2YA

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	1710-1785 MHz	-	3.0	4.2	dB	
Inband Ripple		1710-1785 MHz	-	1.8	2.7	dB	
Absolute Attenuation		DC-1500 MHz	17	19	-	dB	
		1500-1670 MHz	20	22	-	dB	
		1805-1880 MHz	7	12	-	dB	
		1880-2200 MHz	20	23	-	dB	
		3420-3570 MHz	25	31	-	dB	
		5130-5355 MHz	15	25	-	dB	
Inband VSWR		1710-1785 MHz	-	2.5	3.0	-	
Input Power	P_{IN}	1710-1785 MHz	-	-	20	mW	

5. DCS1800 (Rx)

Part Number : FAR-F6CE-1G8425-L2YB

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	1805-1880 MHz	-	3.3	4.5	dB	
Inband Ripple		1805-1880 MHz	-	1.5	2.5	dB	
Absolute Attenuation		DC-1500 MHz	20	22	-	dB	
		1600-1710 MHz	22	24	-	dB	
		1710-1785 MHz	10	29	-	dB	
		1920-2400 MHz	25	27	-	dB	
		3610-3760 MHz	25	35	-	dB	
		5415-5640 MHz	15	21	-	dB	
Inband VSWR		1805-1880 MHz	-	2.5	3.0	-	
Input Power	P_{IN}	1805-1880 MHz	-	-	20	mW	

PRELIMINARY

F6 Series (L2 Type)



6. PCS (Tx)

Part Number : FAR-F6CE-1G8800-L2XA

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	1850-1910 MHz	-	3.2	4.2	dB	
Inband Ripple		1850-1910 MHz	-	2.0	2.5	dB	
Absolute Attenuation		DC-1500 MHz	20	22	-	dB	
		1500-1800 MHz	23	25	-	dB	
		1930-1990 MHz	7	18	-	dB	
		3700-3820 MHz	25	32	-	dB	
		5550-5730 MHz	15	21	-	dB	
Inband VSWR		1850-1910 MHz	-	2.0	2.5	-	
Input Power	P_{IN}	1850-1910 MHz	-	-	20	mW	

7. PCS (Rx)

Part Number : FAR-F6CE-1G9600-L2XB

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	1930-1990 MHz	-	3.3	4.5	dB	
Inband Ripple		1930-1990 MHz	-	2.0	2.8	dB	
Absolute Attenuation		DC-1500 MHz	21	23	-	dB	
		1500-1850 MHz	23	25	-	dB	
		1850-1910 MHz	10	30	-	dB	
		3860-3980 MHz	25	32	-	dB	
		5790-5970 MHz	15	23	-	dB	
Inband VSWR		1930-1990 MHz	-	1.8	2.5	-	
Input Power	P_{IN}	1930-1990 MHz	-	-	20	mW	

F6 Series (L2 Type)

8. Wireless LAN (BW: 97MHz)
Part Number : FAR-F6CE-2G4500-L2WA

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	2400-2497 MHz	-	4.0	5.0	dB	
Inband Ripple		2400-2497 MHz	-	2.0	3.0	dB	
Absolute Attenuation		DC-1700 MHz	20	22	-	dB	
		1800-2200 MHz	25	27	-	dB	
		2700-3100 MHz	30	33	-	dB	
		4800-5000 MHz	10	16	-	dB	
Inband VSWR		2400-2497 MHz	-	2.2	2.6	-	
Input Power	P_{IN}	2400-2497 MHz	-	-	10	mW	

9. Wireless LAN (BW: 26MHz for Japan)
Part Number : FAR-F6CE-2G4840-L2WC

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	2471-2497 MHz	-	2.5	3.5	dB	
Inband Ripple		2471-2497 MHz	-	1.0	1.5	dB	
Absolute Attenuation		DC-1700 MHz	20	22	-	dB	
		1800-2200 MHz	25	27	-	dB	
		2700-3100 MHz	30	33	-	dB	
		4800-5000 MHz	10	16	-	dB	
Inband VSWR		2471-2497 MHz	-	1.5	2.0	-	
Input Power	P_{IN}	2471-2497 MHz	-	-	10	mW	

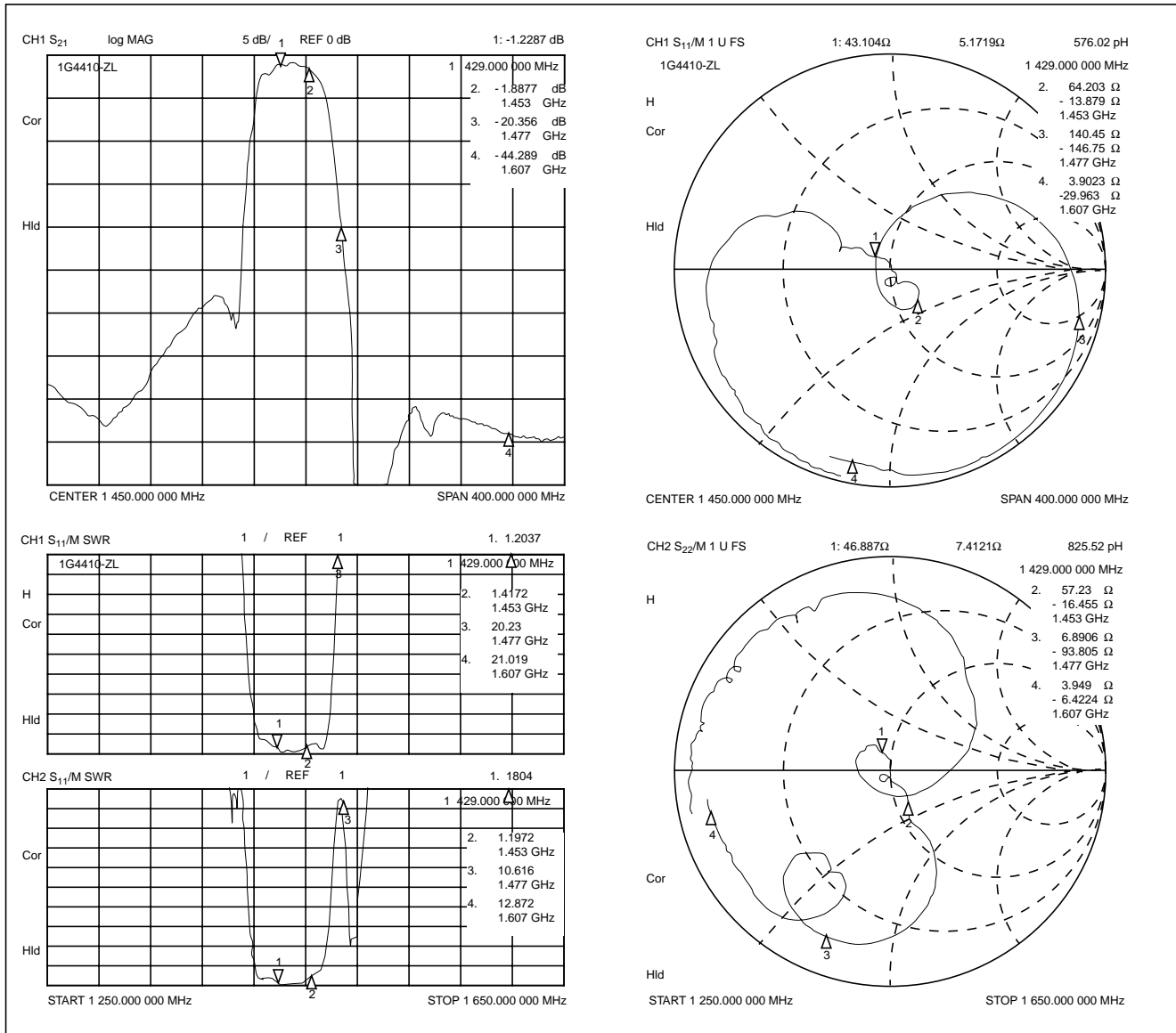
10. Wireless LAN (BW: 83.5MHz for Europe, USA)
Part Number : FAR-F6CE-2G4418-L2WD

$T_a = -30$ to 85 °C

Item	Symbol	Condition	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	2400-2483.5 MHz	-	3.2	4.5	dB	
Inband Ripple		2400-2483.5 MHz	-	1.3	2.5	dB	
Absolute Attenuation		DC-1700 MHz	20	22	-	dB	
		1800-2200 MHz	25	27	-	dB	
		2700-3100 MHz	30	33	-	dB	
		4800-5000 MHz	10	16	-	dB	
Inband VSWR		2400-2483.5 MHz	-	2.2	2.6	-	
Input Power	P_{IN}	2400-2483.5 MHz	-	-	10	mW	

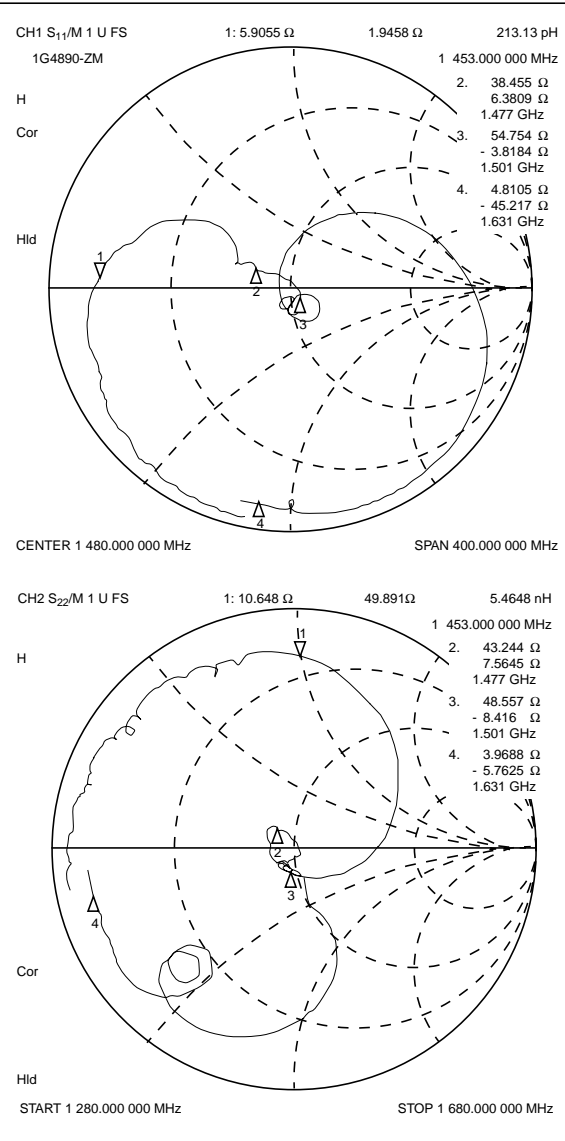
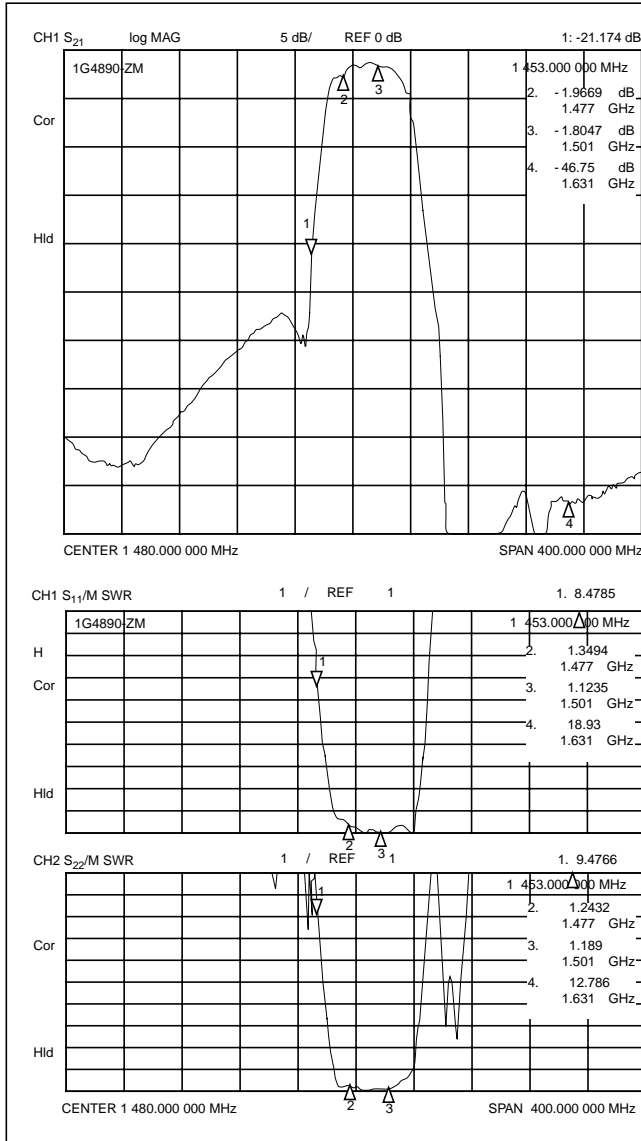
TYPICAL CHARACTERISTICS (STANDARD VERSION)

- PDC1.5G System(Tx)
Part Number : FAR-F6CH-1G4410-L2ZL



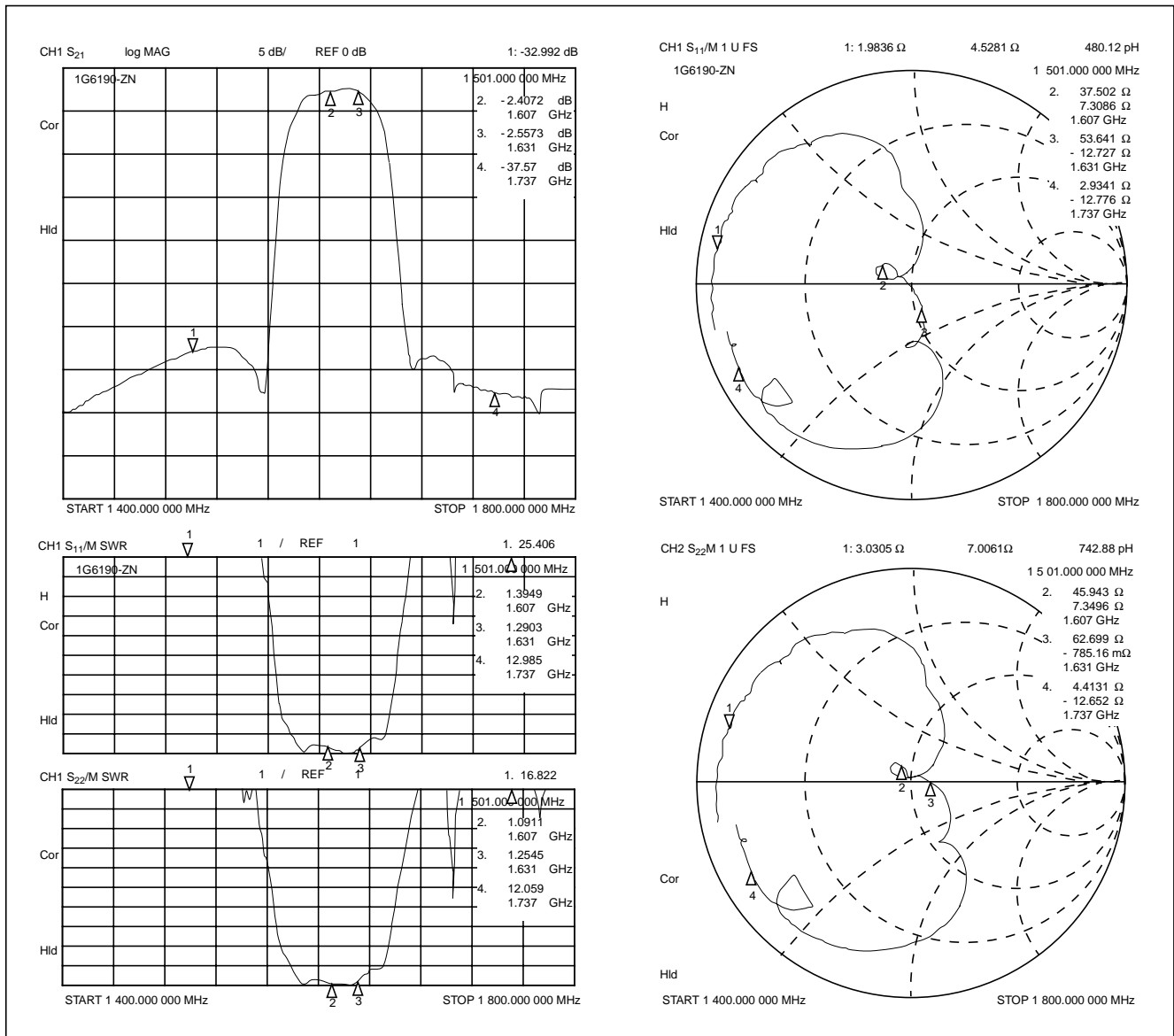
F6 Series (L2 Type)

2. PDC1.5G System (Rx)
 Part Number : FAR-F6CH-1G4890-L2ZM

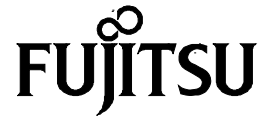


F6 Series (L2 Type)

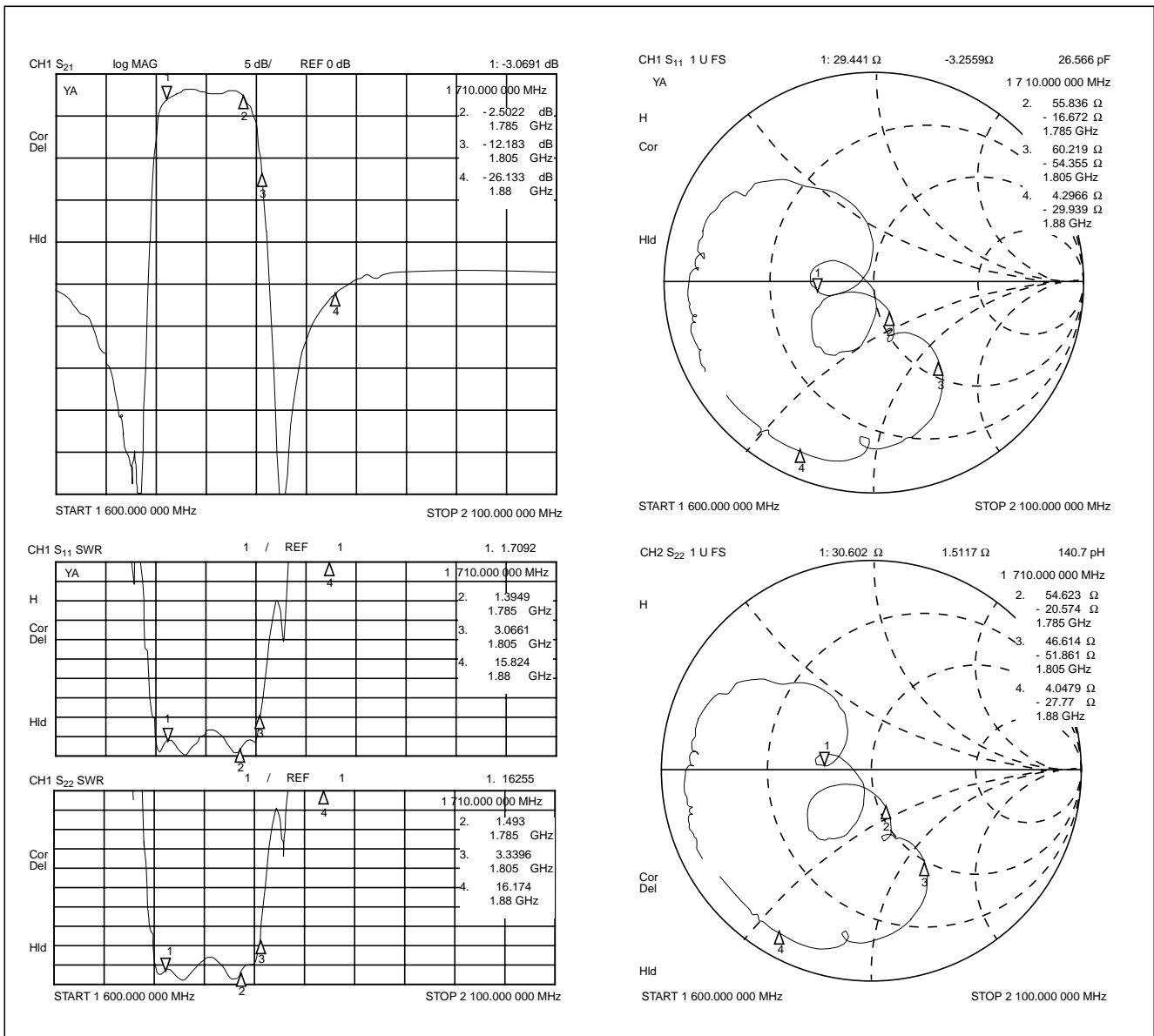
3. PDC1.5G System (Lo)
Part Number : FAR-F6CH-1G6190-L2ZN



F6 Series (L2 Type)



4. DCS1800 System (Tx)
Part Number : FAR-F6CH-1G7475-L2YA

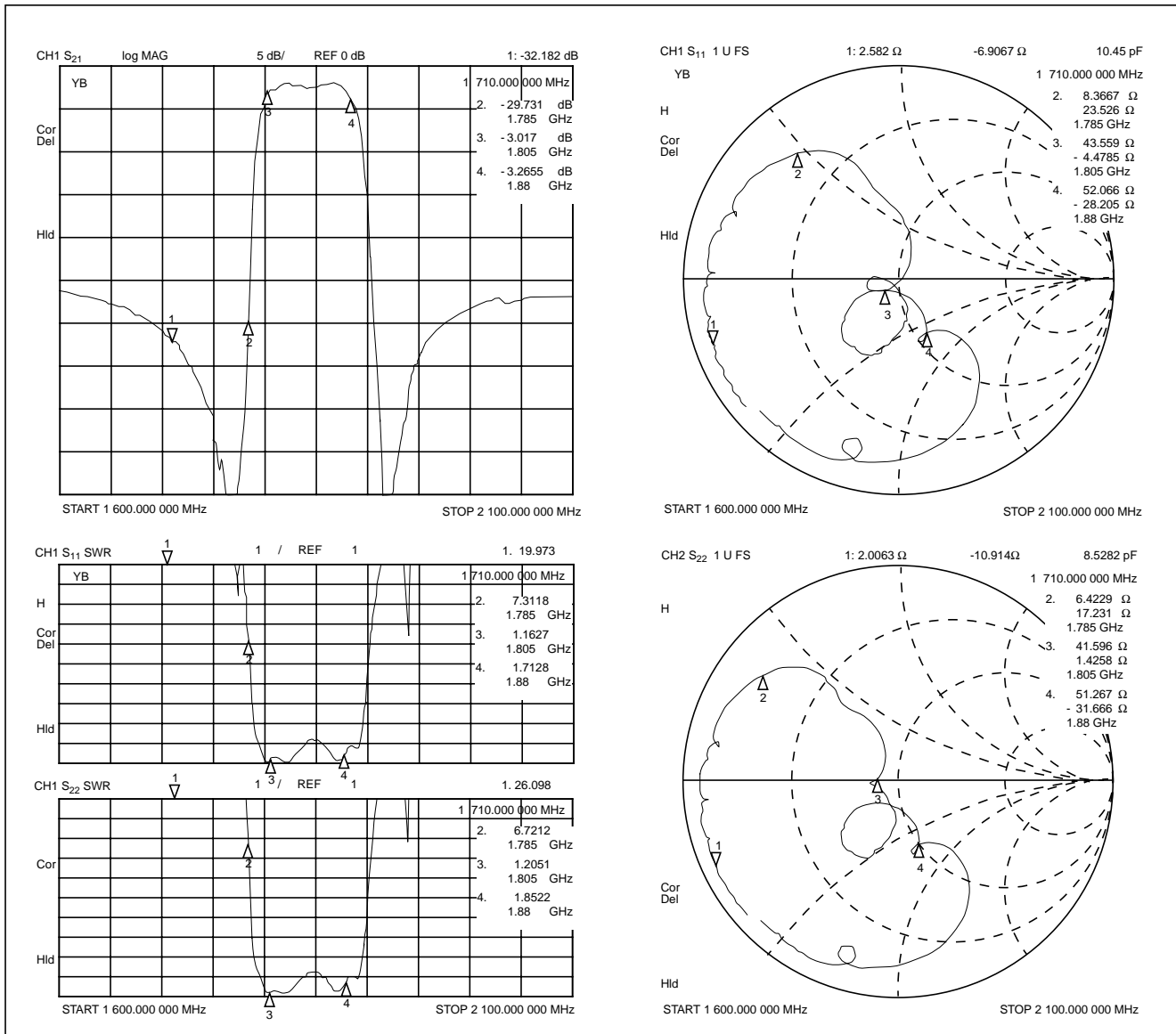


PRELIMINARY

F6 Series (L2 Type)



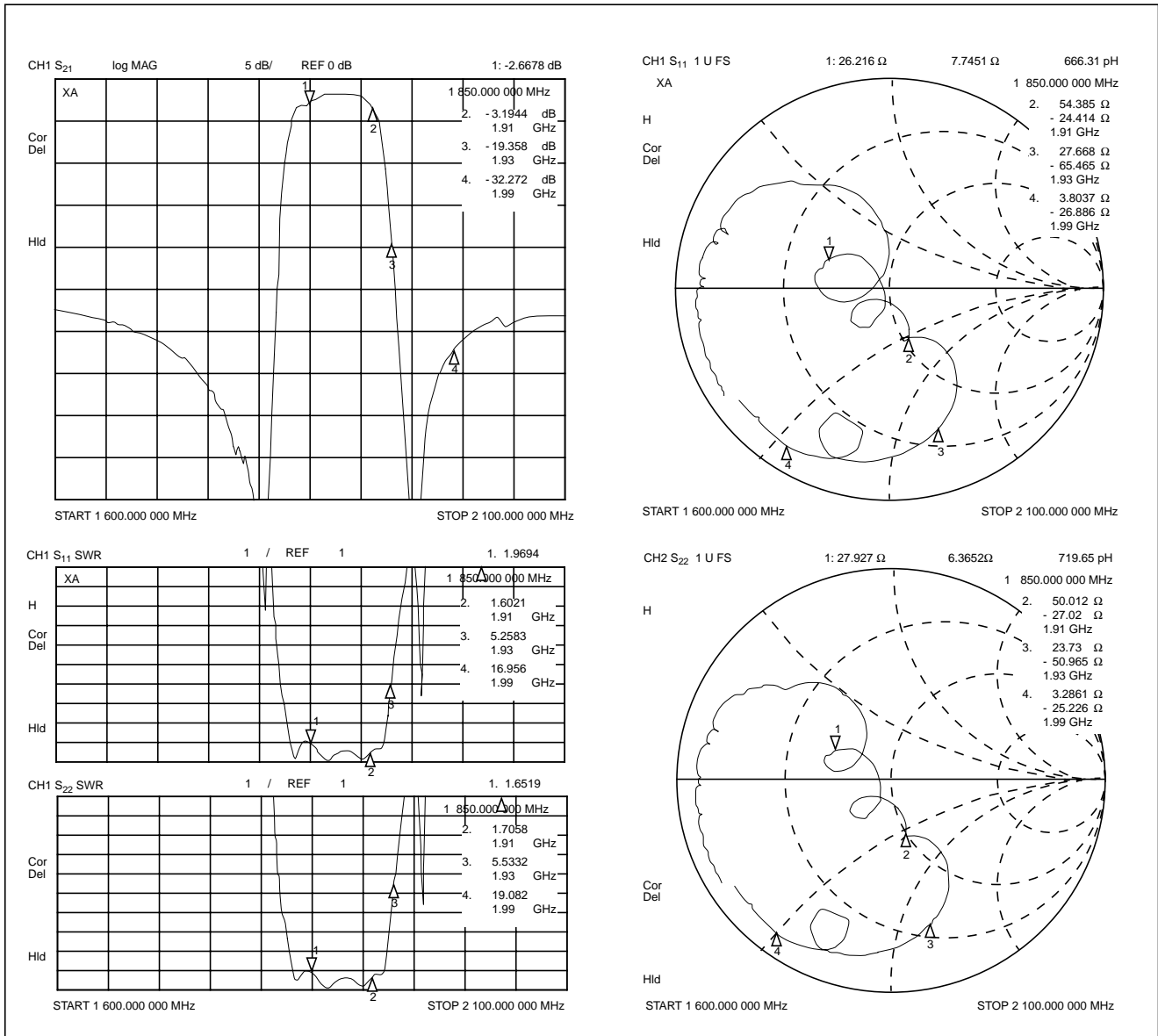
5. DCS1800 System (Rx)
Part Number : FAR-F6CH-1G8425-L2YB



F6 Series (L2 Type)



6. PCS System (Tx)
Part Number : FAR-F6CE-1G8800-L2XA

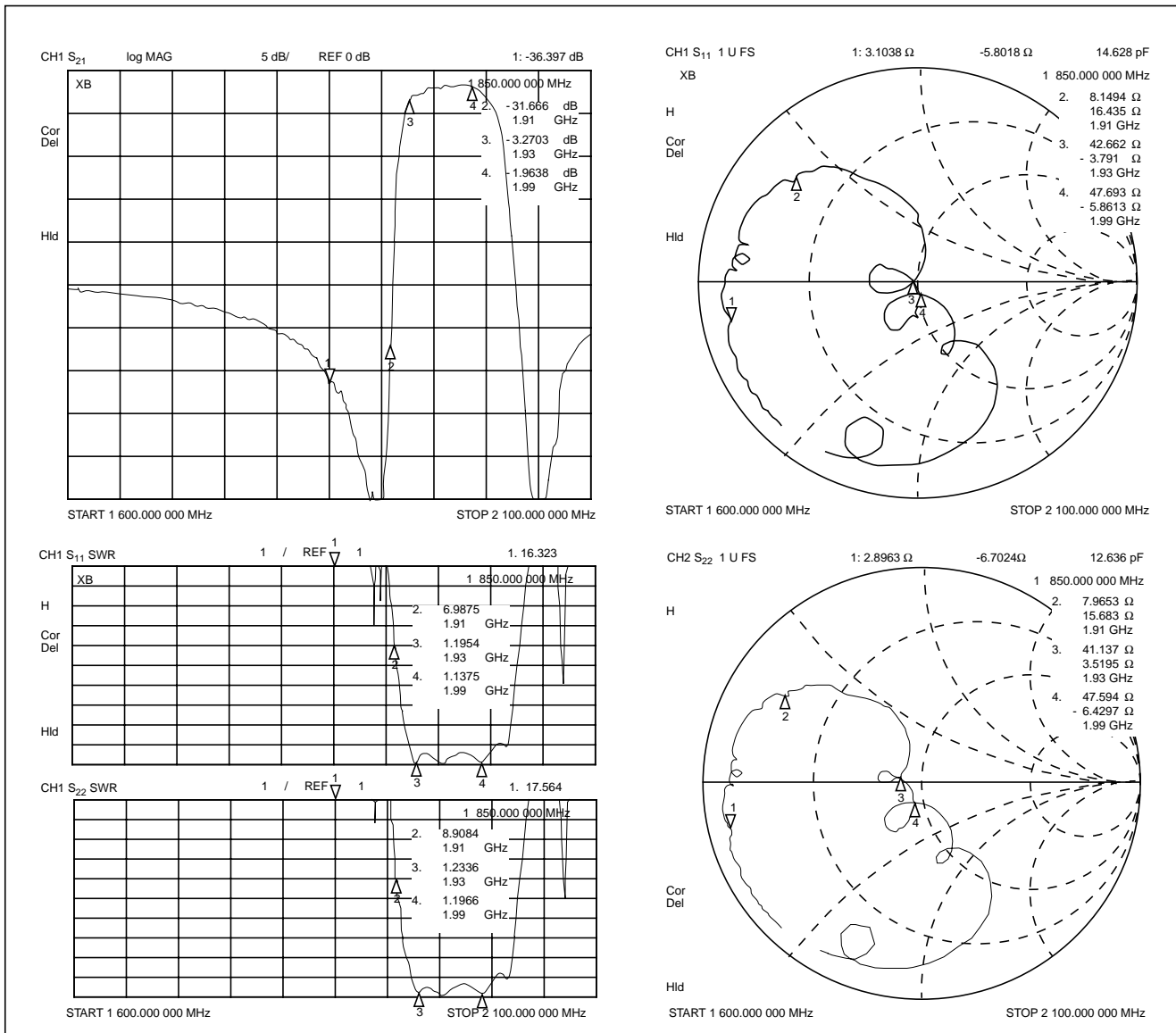


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F6 Series (L2 Type)



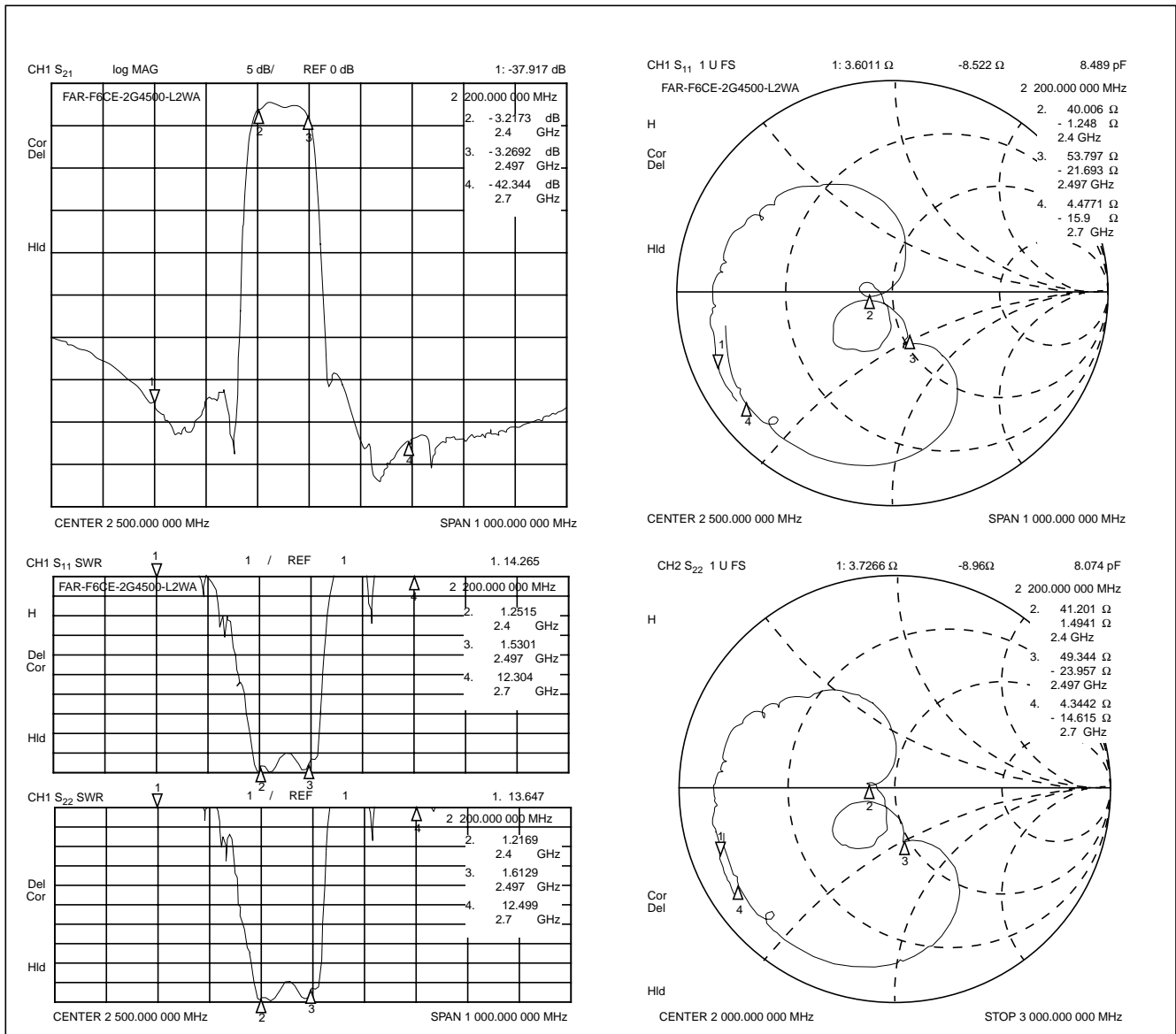
7. PCS System (Rx)
Part Number : FAR-F6CE-1G9600-L2XB



F6 Series (L2 Type)



8. Wireless LAN (BW: 97MHz)
Part Number : FAR-F6CE-2G4500-L2WA

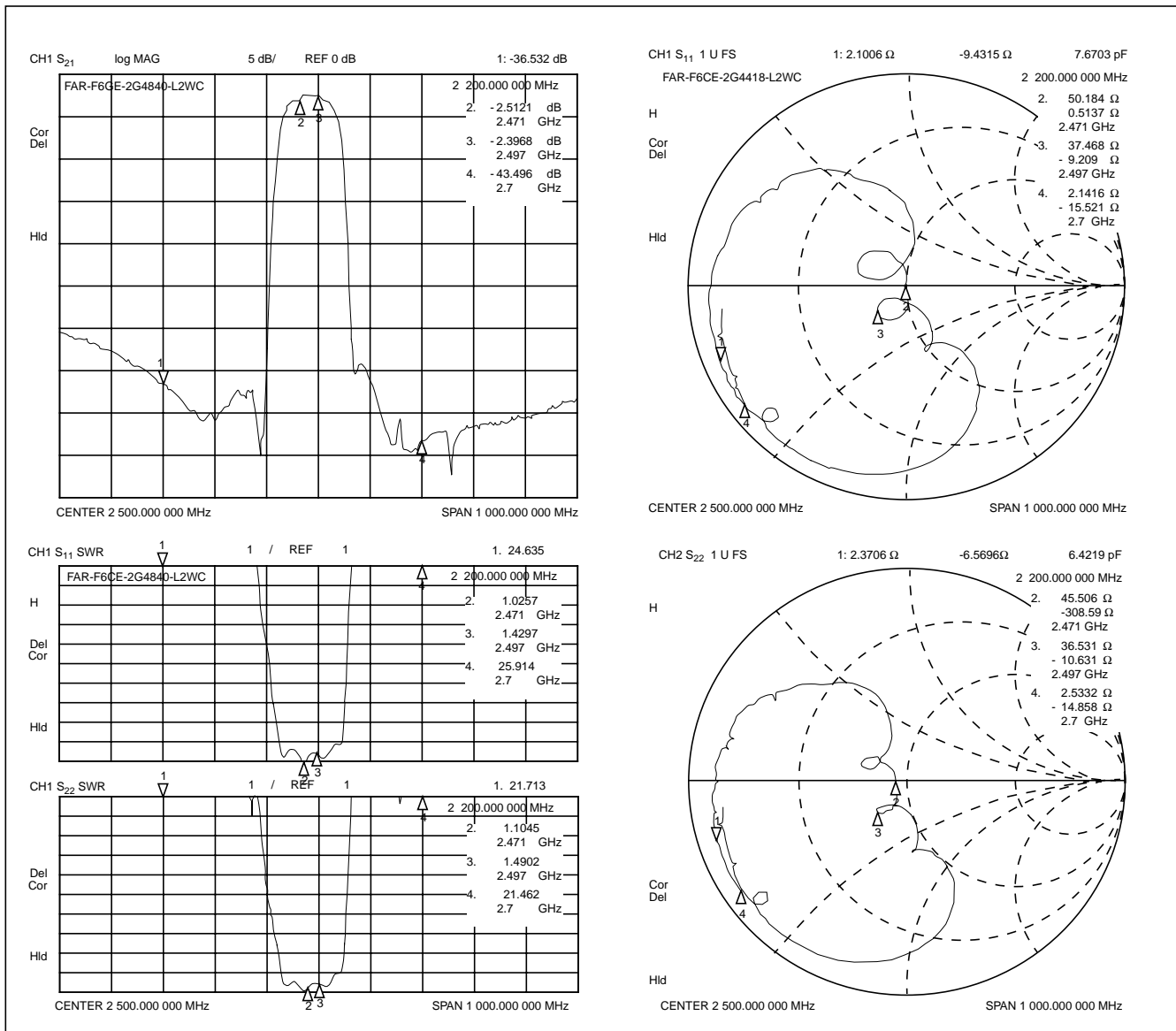


PRELIMINARY

F6 Series (L2 Type)



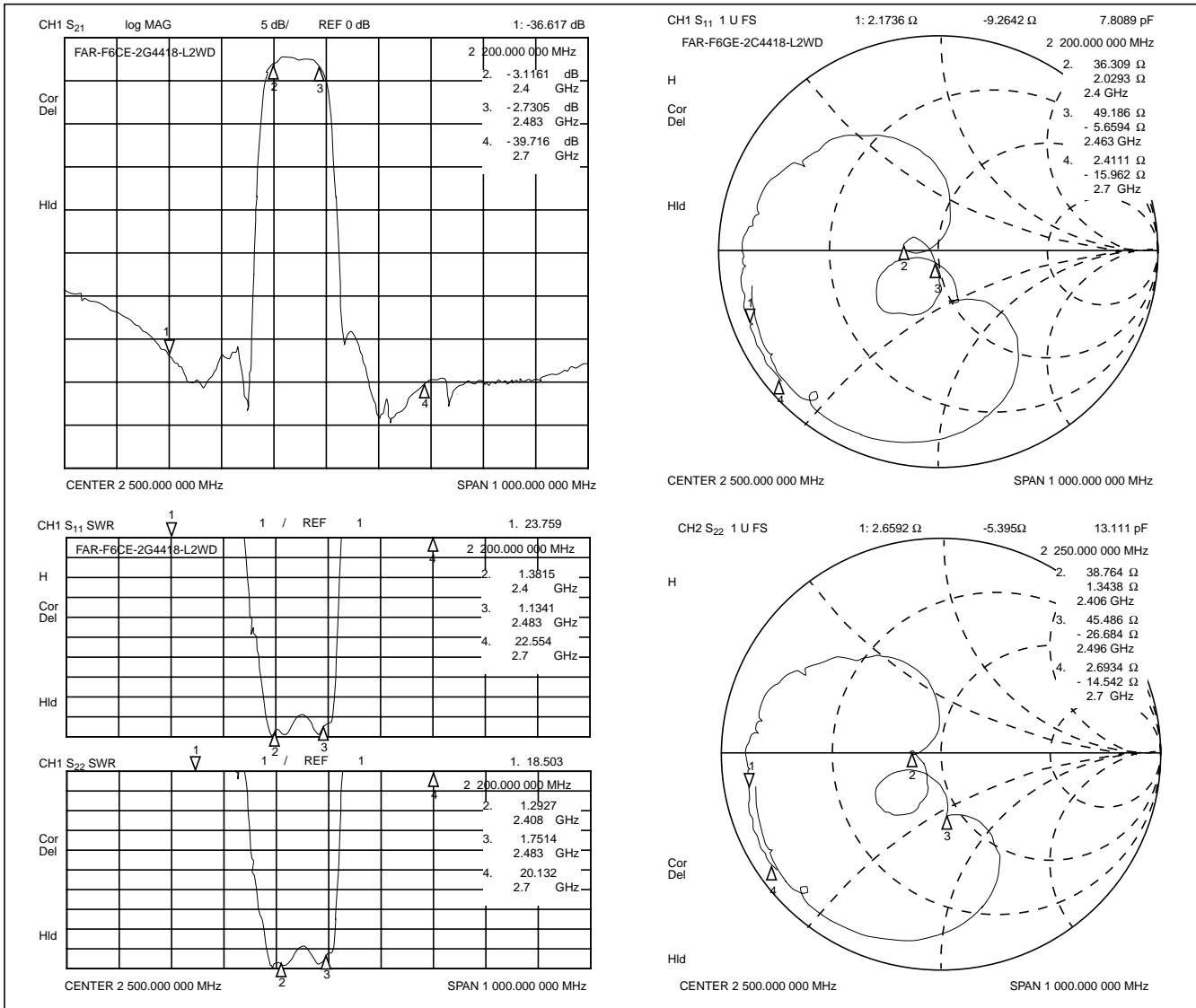
9. Wireless LAN (BW: 26MHz for Japan)
Part Number : FAR-F6CE-2G4840-L2WC



F6 Series (L2 Type)

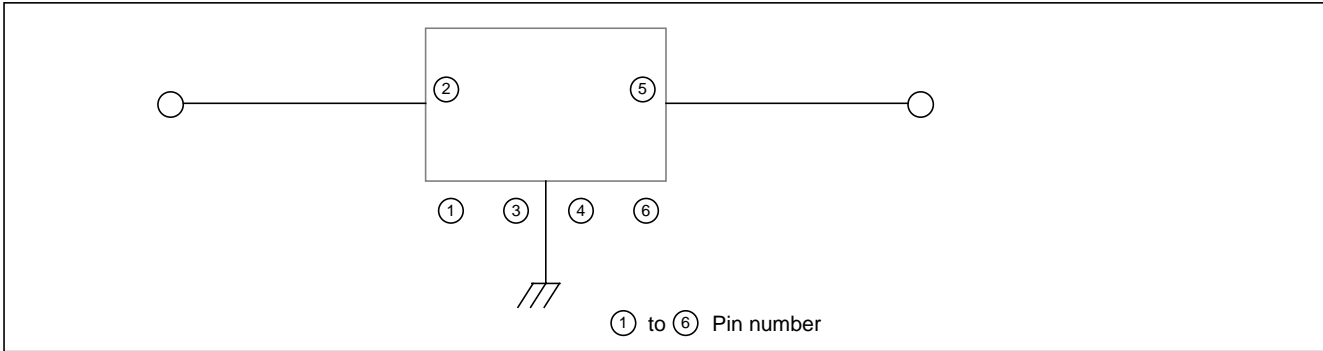


10. Wireless LAN (BW: 83.5MHz for Europe, USA)
Part Number : FAR-F6CE-2G4418-L2WD



PRELIMINARY

MEASURING CIRCUIT



PART NUMBER DESIGNATION

FAR – F6C □ – □□□□□□ – L2□□ – □
 ① ② ③ ④

① Package designation: H: 3.8 mm[□] × 1.6 mm
 E: 3.0 mm[□] × 1.2 mm

Refer to "■ standard frequencies"

② Frequency designation: Specify the nominal frequency in six alphanumeric characters. Enter G(for GHz) at the decimal point. Refer to standard frequencies.

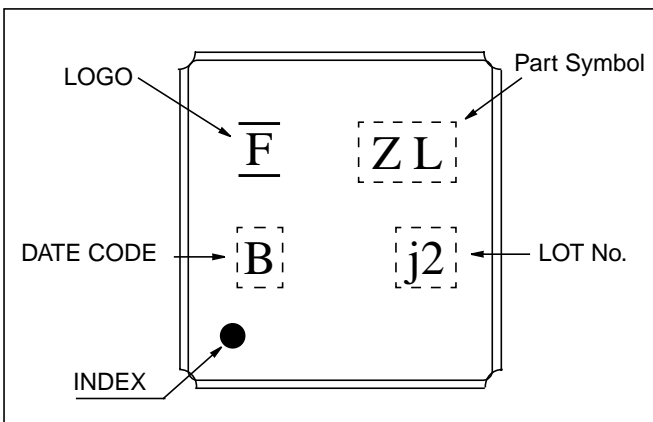
[Example] 1.4410 GHz → 1 G 4410

③ Serial number: Specify characters from WA to ZZ. Refer to standard frequencies.

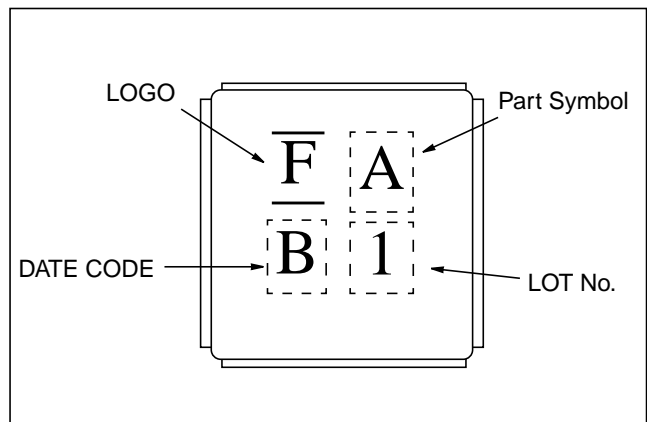
④ Packing: T : 1 k pcs/reel
 (Reeled tape) R : 3 k pcs/reel

MARKING

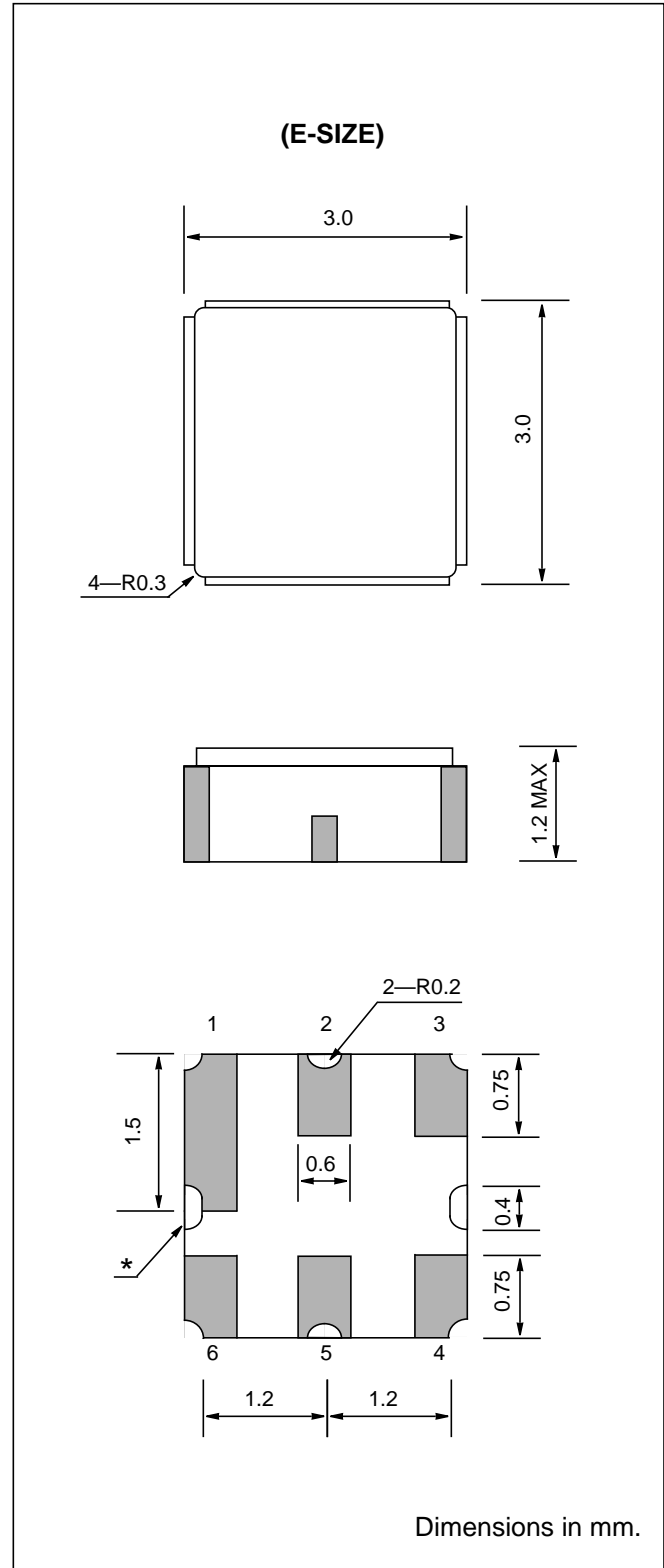
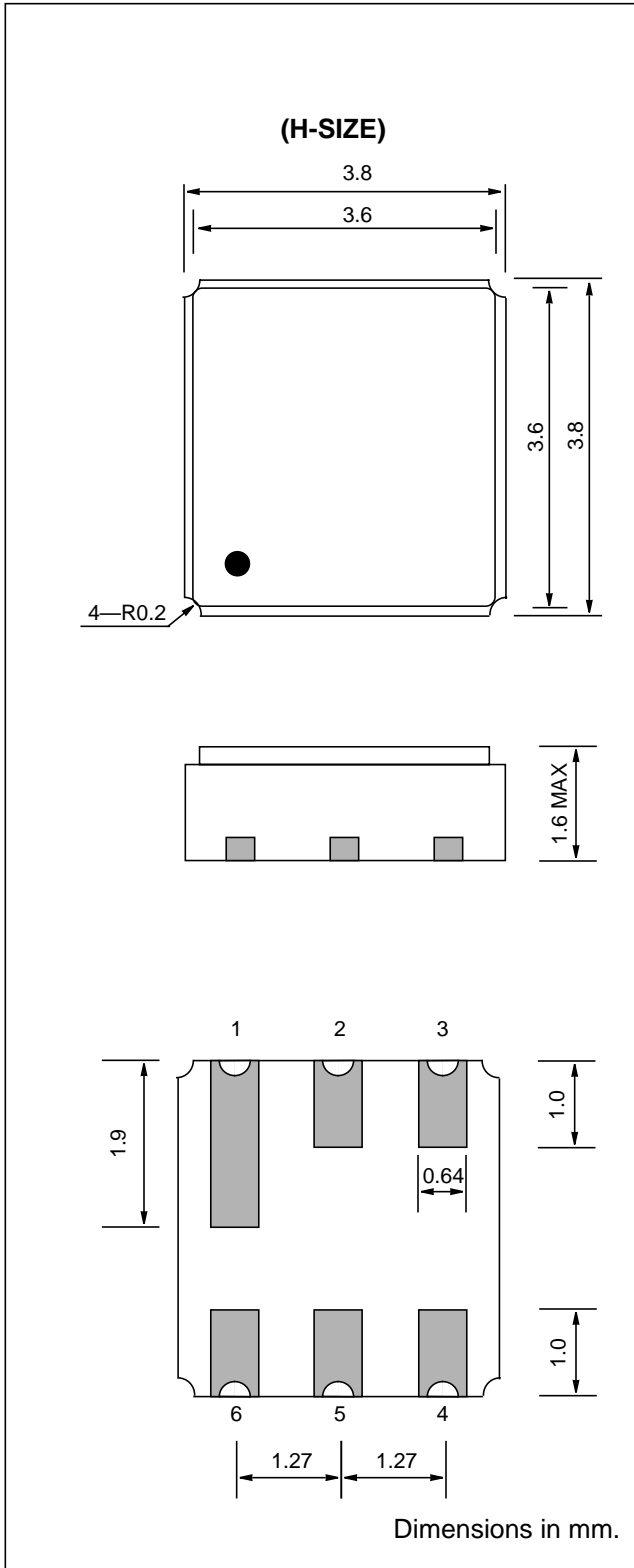
(H-SIZE)



(E-SIZE)



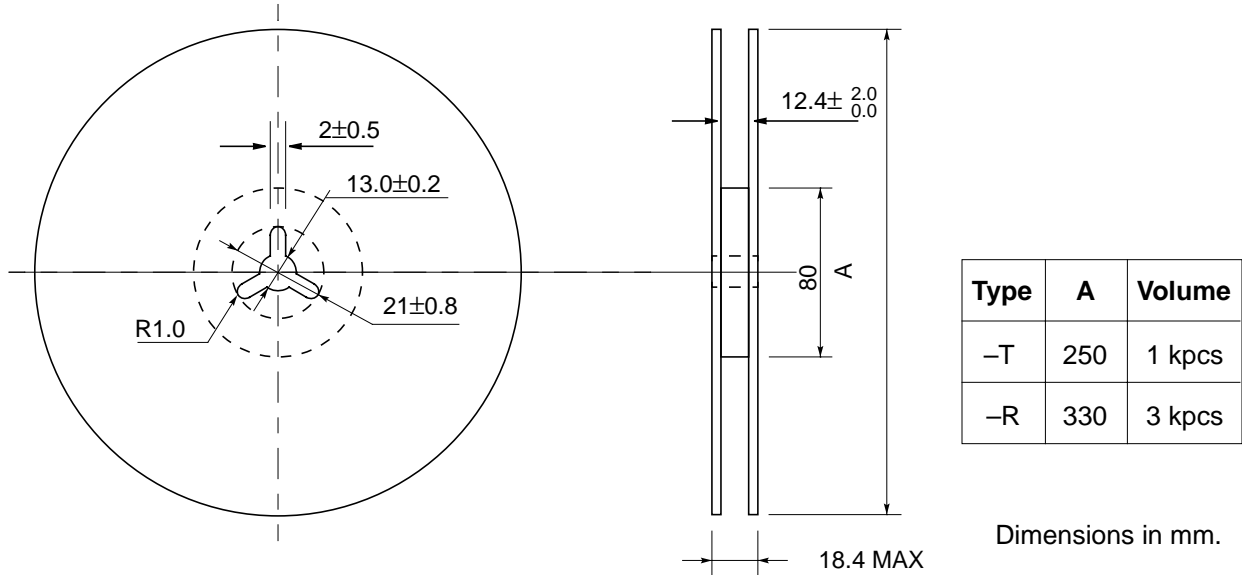
DIMENSIONS



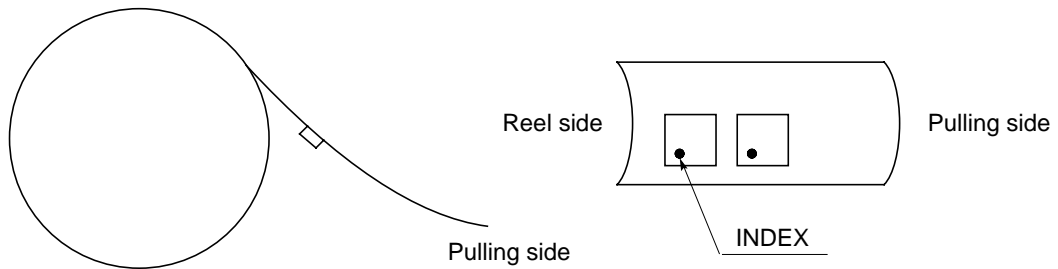
*There are some package types that don't have this notch.

PACKING : REEL TAPE TYPE

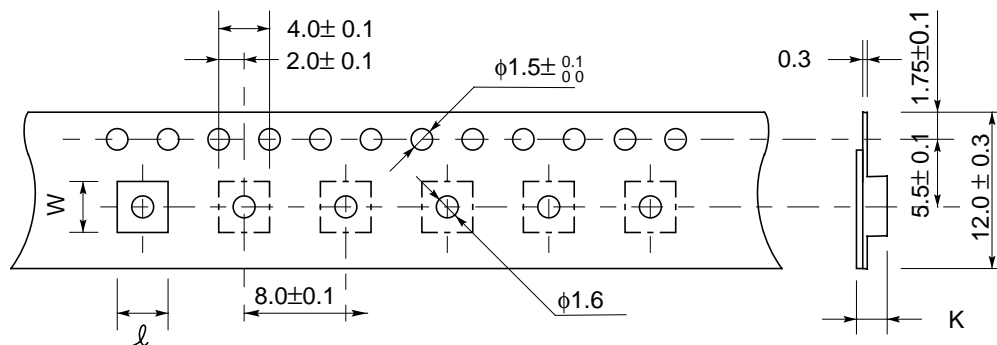
(1) Reel dimensions



(2) Packing style



(3) Tape dimensions



Package	<i>l</i>	<i>W</i>	<i>K</i>
H	4.2 ± 0.1	4.2 ± 0.1	1.8
E	3.4 ± 0.1	3.4 ± 0.1	1.5

Unit : mm

Dimensions in mm.

Worldwide Headquarters

Japan

Fujitsu Limited

Tel: +81 44 754 3753
Fax: +81 44 754 3332

1015 Kamiodanaka
Nakaharaku
Kawasaki 211
Japan

<http://www.fujitsu.co.jp/>

Asia

Tel: +65 281 0770
Fax: +65 281 0220

<http://www.fsl.com.sg/>

Fujitsu Microelectronics Asia PTE Limited

#05-08, 151 Lorong Chuan
New Tech Park
Singapore 556741

USA

Tel: +1 408 922 9000
Fax: +1 408 922 9179

Fujitsu Microelectronics Inc
3545 North First Street
San José CA 95134-1804
USA

Tel: +1 800 866 8608
Fax: +1 408 922 9179

Customer Response Center
Mon-Fri: 7am-5pm (PST)

<http://www.fujitsumicro.com/>

Europe

Tel: +49 6103 6900
Fax: +49 6103 6901

<http://www.fujitsu.ede.com/>

Fujitsu Mikroelektronik GmbH

Am Siebenstein 6-10
D-63303 Dreieich-Buchsschlag
Germany

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