



### OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	INS-DSF-400.0A-51			INS-DSF-947.5B-21			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
CENTER FREQUENCY			400.0			947.5		MHz
INSERTION LOSS	935 ~ 960 MHz			6			3.3	dB
PASS BAND			±83 KHz		25.0			MHz
PASS BAND RIPPLE	935 ~ 960 MHz						1.4	dB
RIPPLE DEVIATION	Pass Band			2.0				dB
GROUP DELAY RIPPLE				1.0				sec
STOP BAND	50 ~ 398.5 MHz	35.0						dB
	398.5 ~ 399.2 MHz	20.0						dB
	399.2 ~ 399.4 MHz	10.0						dB
	399.4 ~ 399.6 MHz	7.0						dB
	400.4 ~ 400.6 MHz	7.0						dB
	400.6 ~ 400.8 MHz	10.0						dB
	400.8 ~ 401.5 MHz	20.0						dB
	401.5 ~ 500 MHz	35.0						dB
TERMINATING IMPEDANCE			600 Ω/90 nH					
RELATIVE ATTENUATION	DC ~ 871 MHz				50.0			dB
	890 ~ 915 MHz				30.0			dB
	980 ~ 1025 MHz				25.0			dB
	1025 ~ 1705 MHz				45.0			dB
	1705 ~ 3000 MHz				25.0			dB
PASSBAND VSWR	935 ~ 960 MHz						2:1	
OPERATING TEMPERATURE		-40		+85	-30		+80	°C
STORAGE TEMPERATURE		-40		+85	-40		+85	°C

### PACKAGE DIMENSIONS (mm)

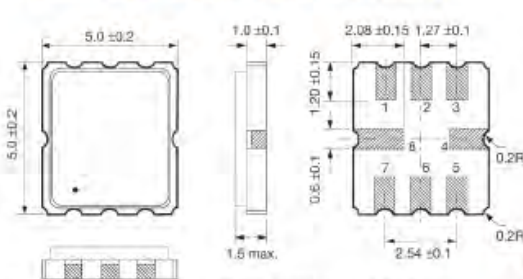


Figure 1) DSF400 Top, Side, Bottom and End views

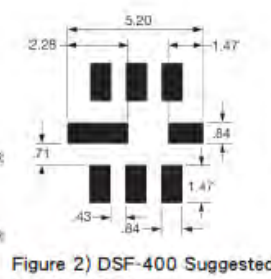


Figure 2) DSF-400 Suggested Land Pattern

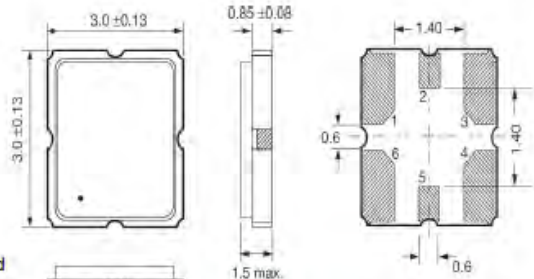


Figure 3) DSF947.5 Top, Side, Bottom and End views

DSF-400 PAD CONNECTIONS	
#1	Input
#2	Ground
#3	Ground
#4	Ground
#5	Output
#6	Ground
#7	Coupling
#8	Ground

DSF-947.5 PAD CONNECTIONS	
#1	Ground
#2	Signal
#3	Ground
#4	Ground
#5	Signal
#6	Ground

### Bandpass Filter for Digital TV, Digital Radio & VOD

Type	Center Frequency (MHz)	Bandwidth 3dB (MHz)	Package
BF23A1D	23.40	1.8	SIP5D
BF36A1D	36.125	8.0	SIP5D
BF33A1M	33.40	0.5	SIP5K
BF36A2D	36.00	8.1	SIP5D
BF36A3D	36.125	6.1	SIP5D
BF36A4D	36.125	7.0	SIP5D
BF36A4M	36.00	8.0	SIP5K
BF36A5D	36.17	8.0	SIP5D
BF36A1M	36.125	8.0	SIP5K
BF36A1D	36.125	8.0	SIP5D
BF36A1S	36.125	8.0	SMD14
BF36A2M	36.125	7.0	SIP5K
BF36A3M	36.125	6.0	SIP5K
BF36A6D	36.00	8.1	SIP5D
BF37A1M	37.00	6.0	SIP5K
BF37A2M	37.70	1.4	F18
BF389A1D	38.912	1.5	SIP5D
BF389A1M	38.912	1.5	SIP5K
BF389A1S	38.912	1.5	SMD-14
BF38A1M	37.95	2.0	SIP5K
BF41A1M	41.25	0.9	SIP5K
BF41A2M	41.25	0.5	SIP5K
BF42A1M	42.00	6.0	SIP5K
BF43A4M	43.00	6.0	SIP5K
BF43A5M	43.00	2.2	SIP5K
BF43A1D	43.75	6.2	SIP5D
BF43A1M	43.75	6.0	SIP5K
BF43A2D	43.75	6.0	SIP5D
BF43A2M	43.75	7.0	SIP5K
BF43A3M	43.75	8.0	SIP5K
BF43A4M	43.75	6.0	SIP5K
BF44A1D	44.00	6.0	SIP5D
BF44A1M	44.00	6.0	SIP5K
BF44A2M	44.00	2.0	SIP5K
BF44A2D	44.00	6.2	SIP5D
BF44A3M	44.00	1.8, 1.1	SIP5K
BF44A4M	44.00	7.0	SIP5K
BF44A5M	44.00	1.7	SIP5K
BF44A6M	44.00	8.0	SIP5K
BF44A9M	44.00	3.0	SIP5K
BF44A8D	44.00	4.8	SIP5D
BF46A1D	46.59	6.0	SIP5D
BF46A1M	46.59	6.0	SIP5K
BF47A1M	47.75	3.1	W2
BF49A1M	49.125	0.72	SIP5K
BF53A1M	53.05	2.2	SIP5K
BF54A1M	54.00	6.0	SIP5K
BF65A1M	65.77	0.6	SIP5K
BF65A2M	65.00	9.0	SIP5K
BF70A1M	70.00	1.0	SIP5K
BF70A2M	70.00	10.4	SIP5K
BF71A1M	71.00	0.4	SIP5K
BF72A1M	72.25	0.7	SIP5K
BF74A1M	74.00	1.8	W2
F94A	94.00	2.0	W2
F90A	90.00	3.0	F16
F87A	87.00	3.0	F16
F70A	70.00	1.8	W3
F64A	64.00	1.8	W1
F5G08	1220.00	8.0	S5
F115A	115.24	2.9	SIP5K/SIP5D/F15



IF Filter for Intercarrier Applications

Type	PC Frequency (MHz)	SC Attenuation (dB)	Package
IF38A1D	38.00	20	SIP5D
IF38B1M	38.00	17,19	SIP5K
IF38B2M	38.00	16,16	SIP5K
IF38B3M	38.00	15,16	SIP5K
IF38B4M	38.00	22,22	SIP5K
IF38B5M	38.00	16,16	SIP5K
IF38B6M	38.00	19,20	SIP5K
MIF38A1M	38.00	20,20(20)	SIP5K
MIF38A2M	38.00	42,32(20)	SIP5K
MIF389A1D	38.90	41,56(37)	SIP5D
MIF389A1M	38.90	41,56(37)	SIP5K
IF389A1D	38.90	19	SIP5D
IF389A1M	38.90	19	SIP5K
MIF389A1T	38.90	18,17(18)	DIP10K
IF389A2M	38.90	20	SIP5K
IF389A3M	38.90	20	SIP5K
IF389A7D	38.90	20	SIP5D
IF389B1D	38.90	21,20	SIP5D
IF389B1M	38.90	21,20	SIP5K
IF389B2M	38.90	19,19	SIP5K
IF389B3M	38.90	19,20	SIP5K
IF389B4M	38.90	15,15	SIP5K
IF389B5M	38.90	14,14	SIP5K
F1044PS	38.90	21	F15
IF45A1D	45.75	19	SIP5D
IF45A1M	45.75	19	SIP5K
IF45A2D	45.75	13	SIP5D
IF45A2M	45.75	20	SIP5K
IF45A3M	45.75	19	SIP5K
IF45A4M	45.75	17	F12
IF45A5M	45.75	17	SIP5K
IF45A6M	45.75	16	SIP5K
IF45A7M	45.75	14	SIP5K
IF45A8M	45.75	17	SIP5K
IF45A9M	45.75	20	W2
F5241P	45.75	19	F12
IF58A1M	58.75	18	F12

### IF Filter for Audio Applications

Type	SC Freq (MHz)	PC Attenuation (dB)	Package
AF38A1M	31.50-32.50	-48	SIP5K
AF38A2M	31.50-33.50	-48	SIP5K
AF38A3M	31.50-32.50	-48	SIP5K
AF389A1D	32.40-32.90	-47	SIP5D
AF389A1M	32.40-32.90	-46	SIP5K
AF389A2M	32.40-32.90	-47	SIP5K
AF389A3M	32.40-34.40	0	SIP5K
AF389A4M	33.40	-52	SIP5K
AF389A5M	32.40-32.90	-46	SIP5K
AF389A6M	32.40-32.90	0	SIP5K
AF45A1M	41.25	0	SIP5K
AF45A2M	41.25	-47	SIP5K
AF58A1D	54.25	-50	SIP5D

### IF Filter for Video Applications

Type	PC Frequency (MHz)	SC Attenuation (dB)	Package
MVF38A2D	38.00	35,45(30)	SIP5D
MVF38A1T	38.00	45,47(28)	DIP10K
VF38A1M	38.00	35,40	SIP5K
VF38A2M	38.00	35,40	SIP5K
VF38A3D	38.00	35,40	SIP5D
VF389A1D	38.90	24,50	SIP5D
VF389A1M	38.90	24,50	SIP5K
VF389A2M	38.90	52	SIP5K
VF389A5M	38.90	5.7~5.8	SIP5K
MVF389A1T	38.90	44(50,56)	DIP10K
VF45A1M	45.75	32	SIP5K
VF45A2M	45.75	25	SIP5K
VF45A3M	45.75	37	SIP5K

### Vestigial Sideband Filter

Type	PC Frequency (MHz)	Vestigial Sideband (MHz)	Bandwidth 3dB (MHz)	Package
VSF389A1M	38.90	0.75	7.0	F14
VSF389A2M	38.90	0.75	7.0	SIP5K
VSF45A1M	45.75	0.75	6.0	SIP5K
VSF45A2M	45.75	0.75	7.5	SIP5K
VSF45A3M	45.75	0.75	6.0	SIP5K
VSF45A4M	45.75	0.75	6.0	SIP5K

### IF Filter for Quasi/Split Sound Applications

Type	PC Frequency (MHz)	SC Attenuation (dB)	Package
QSF389A1M	38.90	45,32	SIP5K
QSF389A3T	38.90	43~55	DIP10K
QSF45A1T	45.75	29	DIP10K
QSF45A2M	45.75	29	SIP5K
QSF45A3M	45.75	29	SIP5K
QSF45A4D	45.75	35	SIP5D

### For DBS Receiver(Digital Satellite Broadcasting)

Type	Center Frequency (MHz)	Bandwidth -3dB (MHz)	Package
F480-1	480	17.6	TO39/S-3
F480A1	480	17.6	TO39/S-3
F480-2	480	17.6/26	TO-39/S-3
F480-3	480	27	TO39/S-3
F480-4	480	27/36	TO39/S-3



### RF Filter for Cordless Phones

Type	Center Frequency(MHz)	Bandwidth 1.5dB(dB)	Package
F422C	422.18	12	F11/S-4
F434C	433.91	12.3	F11/S-4
F465C	465.14	10.9	F11/S-4
F886A	886	10.2	F11/S-4
F914A	914.5	10.3	F11/S-4
F915AT	915	33	F11/S-4
F931A	931	9.4	F11/S-4
F959A	959.5	10.2	F11/S-4

### Filter for FRS & PMR

Part Number	Center Frequency (MHz)	Passband Width (MHz)	Insertion Loss (dB)	I/O Impedance	Package
F000	A	<1000	F ±2.0	50 //0pF	F11/S-3/S-4
F000	B			150 //0pF	S-5/S-6/S-7
F000	C	<1000	F ±5.0	50 //0pF	F11/S-3/S-4
F000	D			150 //0pF	S-5/S-6/S-
F000	E	<1000	F ±10.0	50 //0pF	F11/S-3/S-4
F000	F			150 //0pF	S-5/S-6/S-7

### RF filter For CDMA450

Part Number	Center Frequency (MHz)	Insertion Loss (dB)	Relative Attenuation(dB)	VSWR(In Fc ±2.5 MHz)	Package
F4521	F4521	2.5Max	0.3MHz ~ 347.5MHz 30 347.5MHz ~ 442.5MHz 25 460.0MHz ~ 467.0MHz 40 465.0MHz ~ 1700MHz 30 1700MHz ~ 2000MHz 25	2.0	S4
F4621	F4621	3.8Max	0.3MHz ~ 450.0MHz 45 450.0MHz ~ 457.0MHz 35 482.0MHz ~ 1200MHz 40 1200MHz ~ 1700MHz 35 1700MHz ~ 2000MHz 20	2.4	S4
F4552	F4552	2.8Max	0.3MHz ~ 350.0MHz 25 350.0MHz ~ 447.0MHz 25 462.5MHz ~ 467.5MHz 35 467.5MHz ~ 1200MHz 25 1200MHz ~ 2000MHz 20	2.0	S4
F4651	F4651	3.8Max	0.3MHz ~ 452.5MHz 45 452.5MHz ~ 457.5MHz 35 485.0MHz ~ 507.5MHz 40 507.5MHz ~ 1200MHz 35 1200MHz ~ 1700MHz 25 1700MHz ~ 2000MHz 20	2.4	S4

### RF Filter for SCDMA

Part Number	Center Frequency(MHz)	Insertion Loss(dB)	Band Width(MHz)	Package
F110M4	110.0	14.0Max	3dB BW:0.94	S21
F204M	204.0	12.0Max	1dB BW:0.69	S21
F350M	350.0	14.0Max	3dB BW:0.8	S21
F405A	400.5 ~ 409.5	3.0Max	3dB BW:8.8	S6

### IF & RF Filter for GPS

Type	Center Frequency(MHz)	Bandwidth dB(dB)	Package
F135T	135.42	3.76	F11/S-3
F137A	137.5	1.5	F11
F137T	137.5	1.5	F11
F1288AT	1288	45	S-4/S-6
F1575AT	1575.42	23	S-4/S-6

### Wireless Local Loop/Broadband Access Filter

Type	Center Frequency(MHz)	Insertion Loss(dB)	Package
F112T	112.32	13.5	F16
F112N	112.32	6.0	F11/S-3
F333T	333	7.5	F16

### IF Filter for Wireless LAN & Bluetooth

Type	Center Frequency(MHz)	Insertion Loss(dB)	Package
F110T	110	8.5	F16
F110N	110	6.0	F11/S-3
F110N	110.592	6.0	F11/S-3
F352A	352	2	F11/S-3
F374E	374	8.5	F11/S-3

### SAW Duplexer for Cordless Telephon

Type	Center Frequency(MHz)	Insertion Attenuation	Package
D26/41	26.40	26.3125-26.4875MHz $\leq$ 8.0dB	W1/W3
	41.40	41.3125-41.4875MHz $\leq$ 5.0dB	
D31/40	31.175	31.025-31.325MHz $\leq$ 6.0dB	W1/W3
	40.075	39.925-40.225MHz $\leq$ 5.0dB	
D40/49	40.68	40.50-40.86MHz $\leq$ 4.5dB	W3
	49.86	49.70-50.02MHz $\leq$ 4.5dB	
D45/48	45.24	45.00-45.48MHz $\leq$ 6.0dB	W2
	48.24	48.00-48.48MHz $\leq$ 6.0dB	
D46/49	46.79	46.61-46.97MHz $\leq$ 4.0dB	W2
	49.83	49.67-49.99MHz $\leq$ 4.0dB	
D03/27 B&H	903.75	902.75-904.75MHz $\leq$ 4.5dB	T039B/S-3/S-5
	926.25	925.75-927.75MHz $\leq$ 4.5dB	
F45A1	45.24	45.00-45.48MHz $\leq$ 4.5dB	F11
F48A1	48.24	48.00-48.48MHz $\leq$ 4.5dB	F11
F46A	46.79	46.61-46.97MHz $\leq$ 4.0dB	F11
F49A	49.83	46.97-49.99MHz $\leq$ 4.0dB	F11



### For Remote Control

Type	Center Frequency(MHz)	3dB Bandwidth (KHz)	Package
F303M	303.825	700	F11/T039/S-3
F311M	311.0625	700	F11/T039/S-3
F315M	315.000	700	F11/T039/S-3
F372M	372.500	700	F11/T039/S-3
F418M	418.000	700	F11/T039/S-3
F420M	420.300	700	F11/T039/S-3
F433M	433.920	700	F11/T039/S-3
F447M	447.725	700	F11/T039/S-3

### RF Filter for Other Use

Type	Center Frequency(MHz)	3dB Bandwidth (KHz)	Package
F230AN	230.10	2.0	F11
F237AN	237.60	2.0	F11
F245A	245.00	2.0	F11
F267AN	267.10	2.0	F11
F736C	736.00	20	F11/S-3/S-4
F746A	746.00	10	F11/S-3/S-4
F764A	764.00	10	F11/S-3/S-4
F802AN	802.3125	6	F11/S-3/S-4
F806C	806.00	22	F11/S-3/S-4
F854C	854.00	22	F11/S-3/S-4
F862AN	862.00	6	F11/S-3/S-4
F866AN	866.00	6	F11/S-3/S-4
F869AN	869.00	6	F11/S-3/S-4
F870A	870.00	10	F11/S-3/S-4

### Filter For Base Station

Part number	Center Frequency(MHz)	-3dB Bandwidth (MHZ)	-40dB bandwidth (MHZ)	Insertion Loss(dB)	Passband Ripple(dB)	Package Type
202150B	69.990	1.30	1.5(35dB)	22.5	1.00	D7420
202160B	70	0.32	1.05	10.8	0.8	D3512
201111B	70.00	3.75	5.50	25.50	1.10	D3512
202164C	70.000	4.40	6.12	22.30	1.00	D2012
201142C	70.000	10.10	11.13	25.50	1.20	D3512
202196B	70.000	20.70	21.85	24.00	1.00	D3512
206162B	70.000	31.20	36.80	17.50	1.00	S1365
201302B	140.000	2.70	3.75	20.00	1.00	D2712
254401B	140.000	44.25	48.60	24.50	1.00	D2012
204356B	140.000	24.000	28.50	11.30	1.00	S1365