

- **SAW Filter for Digital Television**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

Characteristics :

Balance-to-balanced Operation

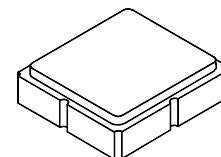
Terminating Source/Load Impedance : $Z_S = 150 \Omega$

Maximum Rating

Rating	Value	Units
Input Power Level	0	dBm
DC Voltage on any Non-ground Terminal	3	V
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Maximum Soldering Profile, 5 cycles/ 10 seconds maximum	265	°C

SF2159E

**974 MHz
SAW Filter**



SM3030-8

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_C			974		MHz
Maximum Insertion Loss, 954 to 994 MHz	IL_{MAX}			3.1	4.5	dB
1.5 dB Passband				50		MHz
Amplitude Ripple, 954 to 994 MHz				1.0	2.5	dB _{P-P}
Attenuation, Referenced to IL_{MAX}						
50 to 891.94 MHz			45	51		dB
1056.06 to 1100 MHz			44	55		
2000 to 6000 MHz			15	20		
Group Delay Ripple, 954 to 994 MHz				23	35	ns _{P-P}

Case Style	SM3030-8 3.0 x 3.0 mm Nominal Footprint
Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator	825, YWWS

Electrical Connections

	Connection	Terminals
Port 1	Balanced Input	1,2
Port 2	Balanced Output	5,6
	Ground	All Others

Dot Indicates Pin 1

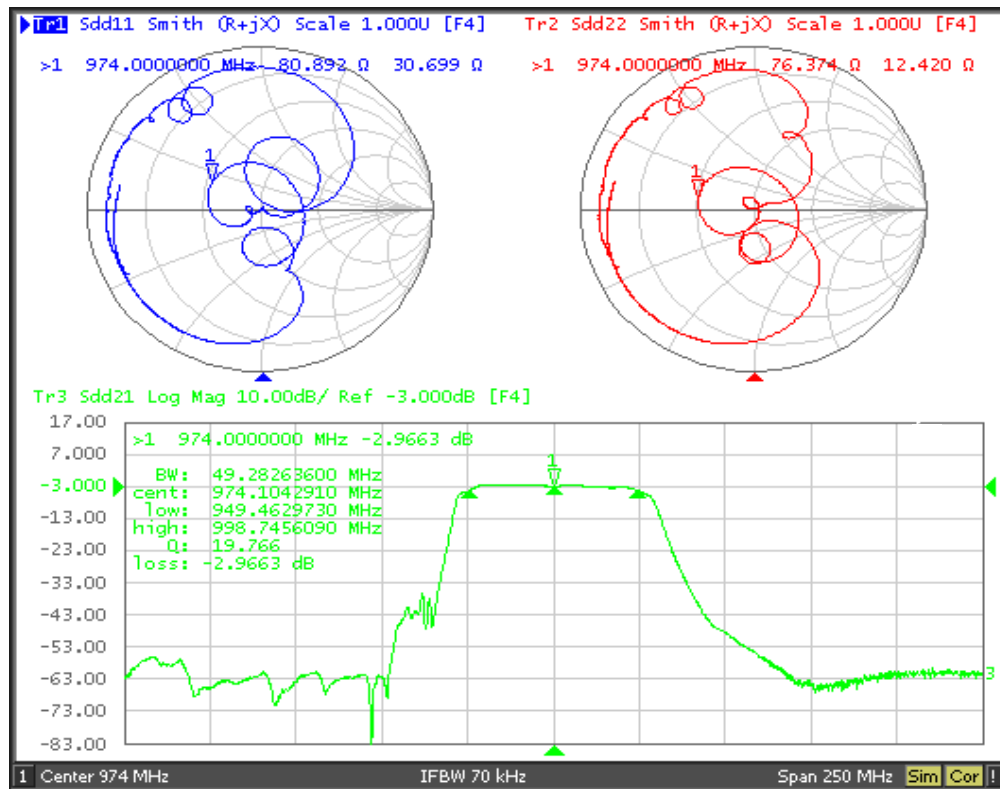


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

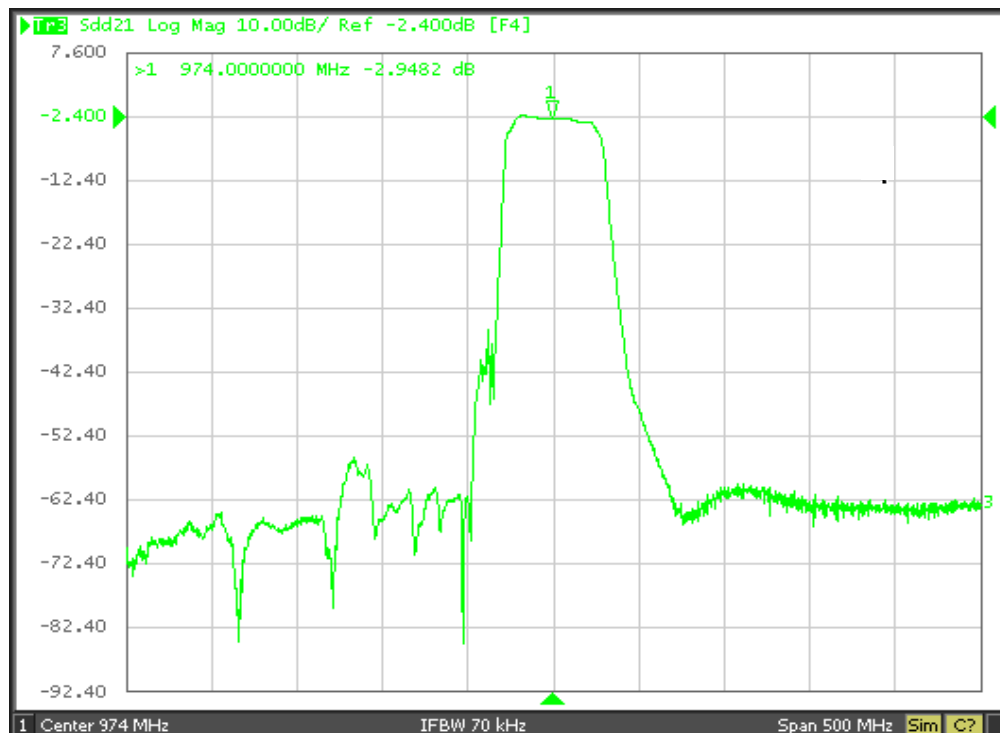
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

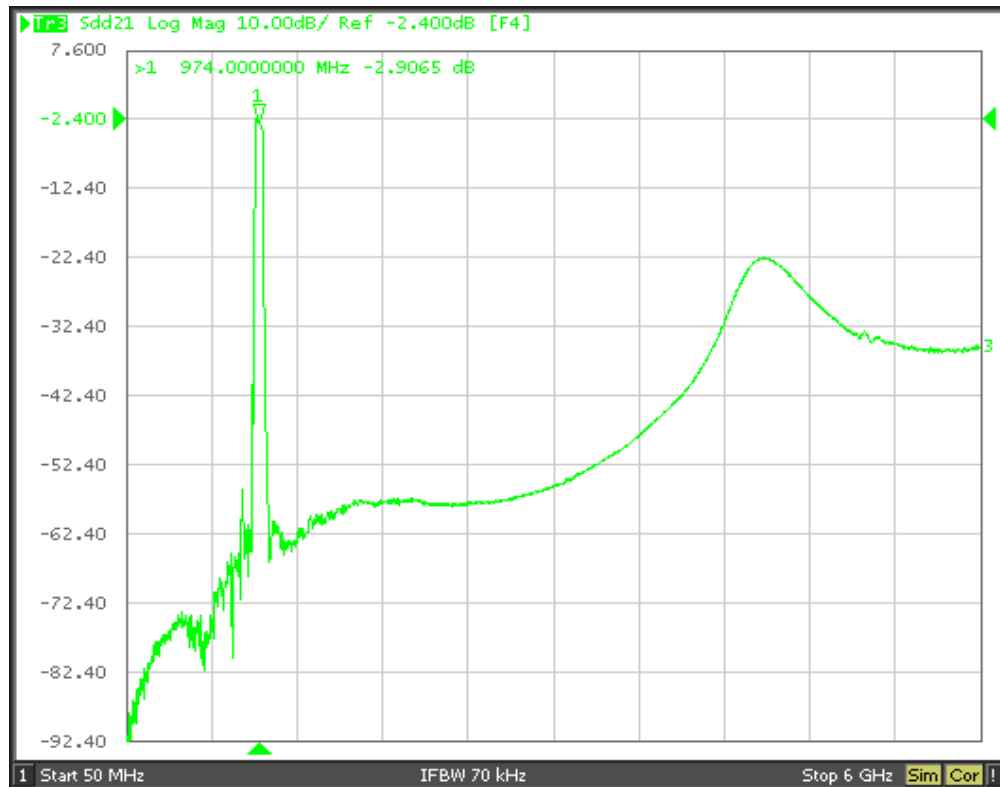
Filter S_{11} , S_{22} and S_{21} Plots



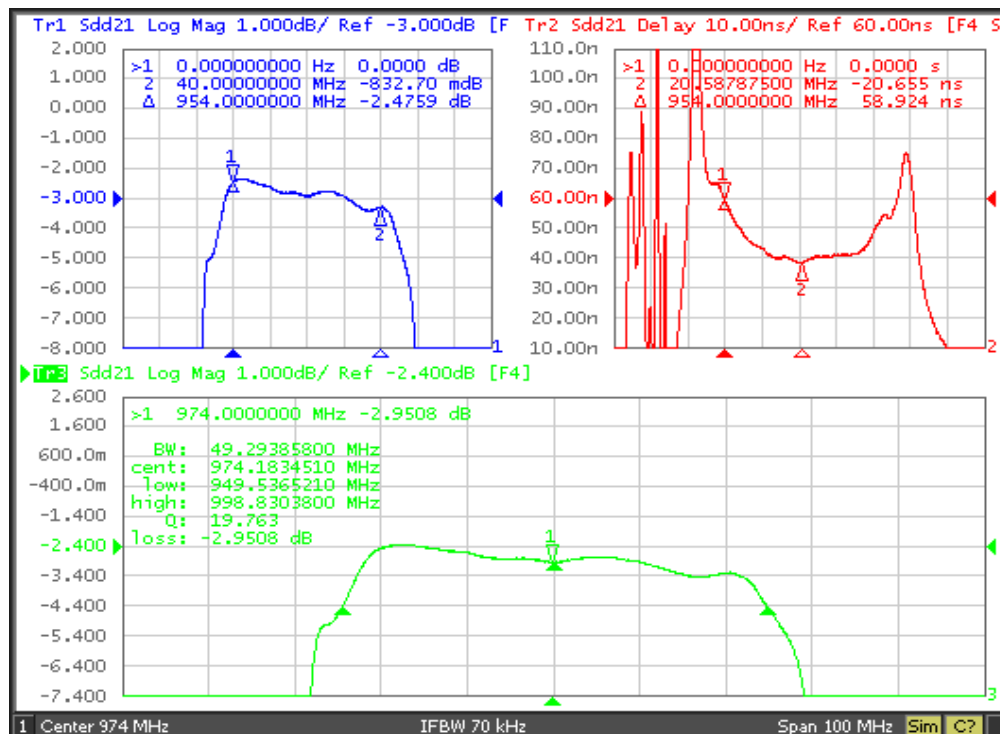
Filter Near-in Rejection



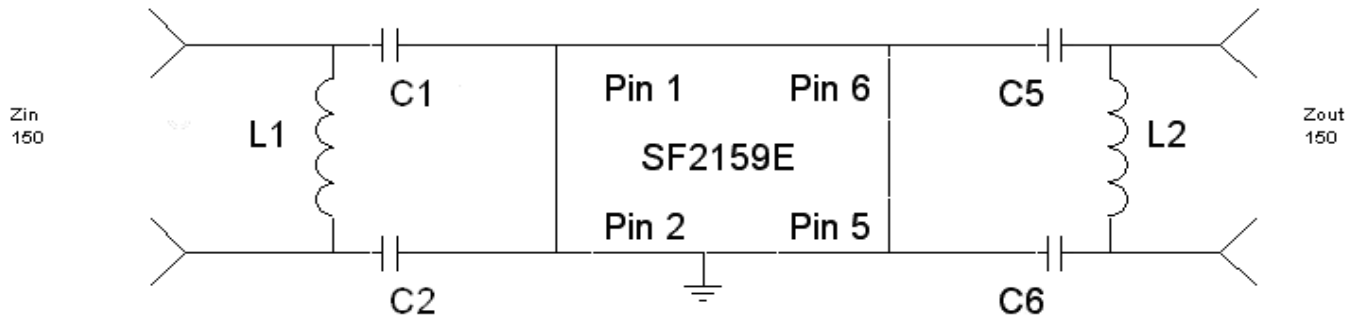
Filter Broadband Rejection



Filter Passband Amplitude and Group Delay Detail



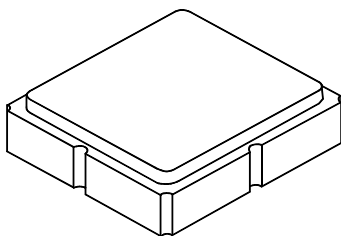
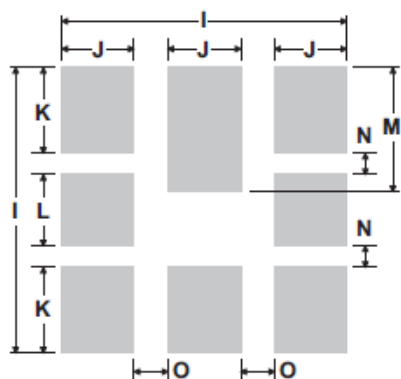
Tuning Network, 150 ohm Balanced Source/Load



All other pins grounded

L1, L2	24 nH
C1, C2, C3, C4	22 pF

8-Terminal Ceramic Surface-Mount Case 3.0 X 3.0 mm Nominal Footprint



PCB Footprint Top View

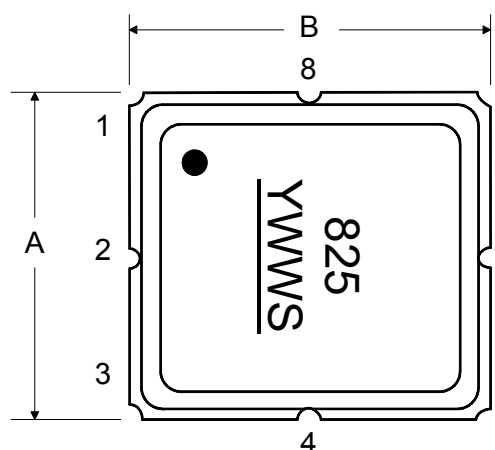
Case and PCB Footprint Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.0	3.13	0.113	0.118	0.123
B	2.87	3.0	3.13	0.113	0.118	0.123
C	1.14	1.27	1.40	0.045	0.050	0.055
D	0.79	0.92	1.05	0.031	0.036	0.041
E	0.62	0.75	0.88	0.024	0.029	0.034
F	0.47	0.60	0.73	0.018	0.024	0.029
G	0.47	0.60	0.73	0.018	0.024	0.029
H	1.07	1.20	1.33	0.042	0.047	0.052
I		3.19			0.126	
J		0.81			0.032	
K		0.96			0.038	
L		0.81			0.032	
M		1.39			0.055	
N		0.23			0.009	
O		0.38			0.015	

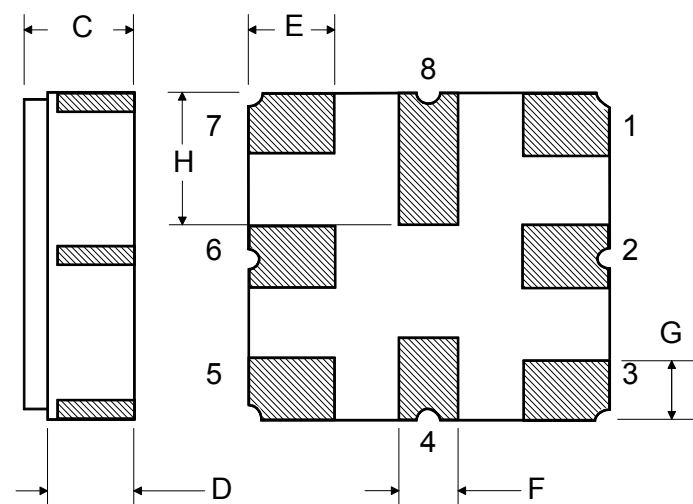
Case Materials

Materials	
Solder Pad Plating	0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel
Lid Plating	2.0 to 3.0 μm Nickel
Body	Al_2O_3 Ceramic

TOP VIEW



BOTTOM VIEW



Tape and Reel Standard per ANSI/EIA-481

See Detail "A"

100 REF.
"B" REF.

12.0

13.0
20.2
2.0

Carrier Tape Dimensions	
Ao	3.35 mm
Bo	3.35 mm
Ko	1.4 mm
Pitch	8.0 mm
W	12.0 mm

0.3 ± 0.05

RO.3 (MAX.)

PIN #1

2.0

4.0

Ø1.50

A

1.75

5.5

12.0

Bo

B

Pitch

Ao

A

Ø1.5

RO.5 (MAX.)

SECTION A-A

SECTION B-B

USER DIRECTION OF FEED

Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

