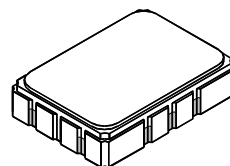


- *Designed for SDARS IF*
- *SAW Diplexer 72.54 MHz / 80.46 MHz*
- *5.0 X 7.0 mm Surface-mount Case*
- *Complies with Directive 2002/95/EC (RoHS)*


SF2143B
**72.54 / 80.46 MHz
SAW Diplexer**

SMP-03
Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage Between any Two Terminals	0	VDC
Operating Temperature Range	-40 to +105	°C
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Peak Solder Reflow Temperature, 10 seconds/5 cycles	260	°C

Electrical Characteristics TDM1 Filter

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_C			72.54		MHz
Passband Width:						
1 dB	BW_1		3.7	4.1		MHz
15 dB	BW_{15}			6.4	6.7	MHz
30 dB	BW_{30}			7.3	7.5	MHz
Passband Minimum Insertion Loss (including matching network) at f_C	IL_{MIN}			16	18	dB
Amplitude Ripple, $f_C \pm 1.85$ MHz				0.6	1.3	dB _{P-P}
Attenuation Relative to Minimum Insertion Loss:						
50.00 to 66.48 MHz			40	42		dB
66.48 to 68.08 MHz			37	42		dB
77.30 to 78.60 MHz			30	33		dB
78.60 to 86.50 MHz			30	33		dB
86.50 to 91.50 MHz			39	43		dB
91.50 to 100.0 MHz			42	46		dB
Group Delay Ripple				30	150	nsp-p
Source Impedance, Differential				27 ohms or 200 ohms		
Load Impedance, Differential				1K ohms or 1.5K ohms		

Electrical Characteristics TDM2 Filter

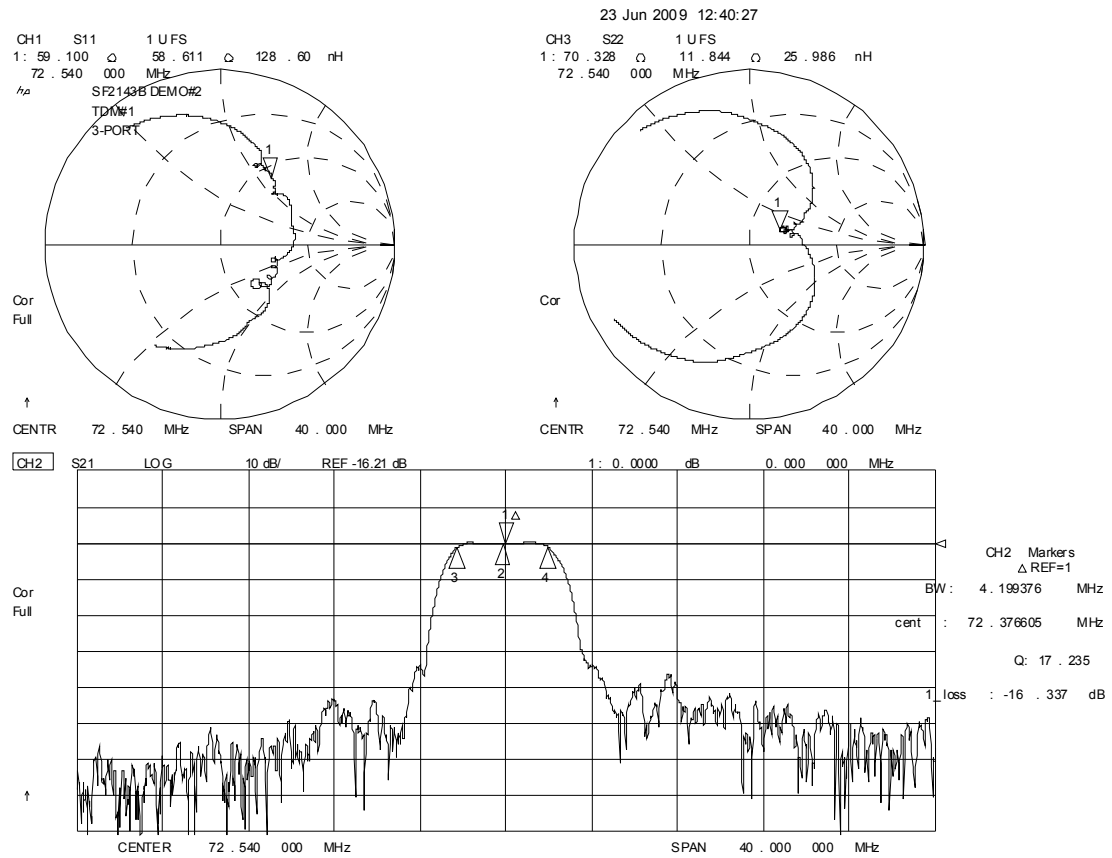
Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_C			80.46		MHz
Passband Width:						
1 dB	BW_1		3.7	4.2		MHz
15 dB	BW_{15}			6.4	6.7	MHz
30 dB	BW_{30}			7.2	7.5	MHz
Passband Minimum Insertion Loss (including the matching network) at f_C	IL_{MIN}			15	18	dB
Amplitude Ripple, $f_C \pm 1.85$ MHz				0.7	1.3	dB _{P-P}
Attenuation Relative to Minimum Insertion Loss:						
50.00 to 74.39 MHz			39	42		dB
74.39 to 75.99 MHz			33	38		dB
85.21 to 86.50 MHz			30	38		dB
86.50 to 91.50 MHz			35	40		dB
91.50 to 100.0 MHz			43	46		dB
Group Delay Ripple				40	150	nsp-p
Source Impedance, Differential				27 ohms or 200 ohms		
Load Impedance, Differential				1K ohms or 1.5K ohms		

Case Style			SMP-03 7 x 5 mm Nominal Footprint			
Lid Symbolization (YY=year, WW=week, S=shift)			RFM, SF2143B ,YYWWS			

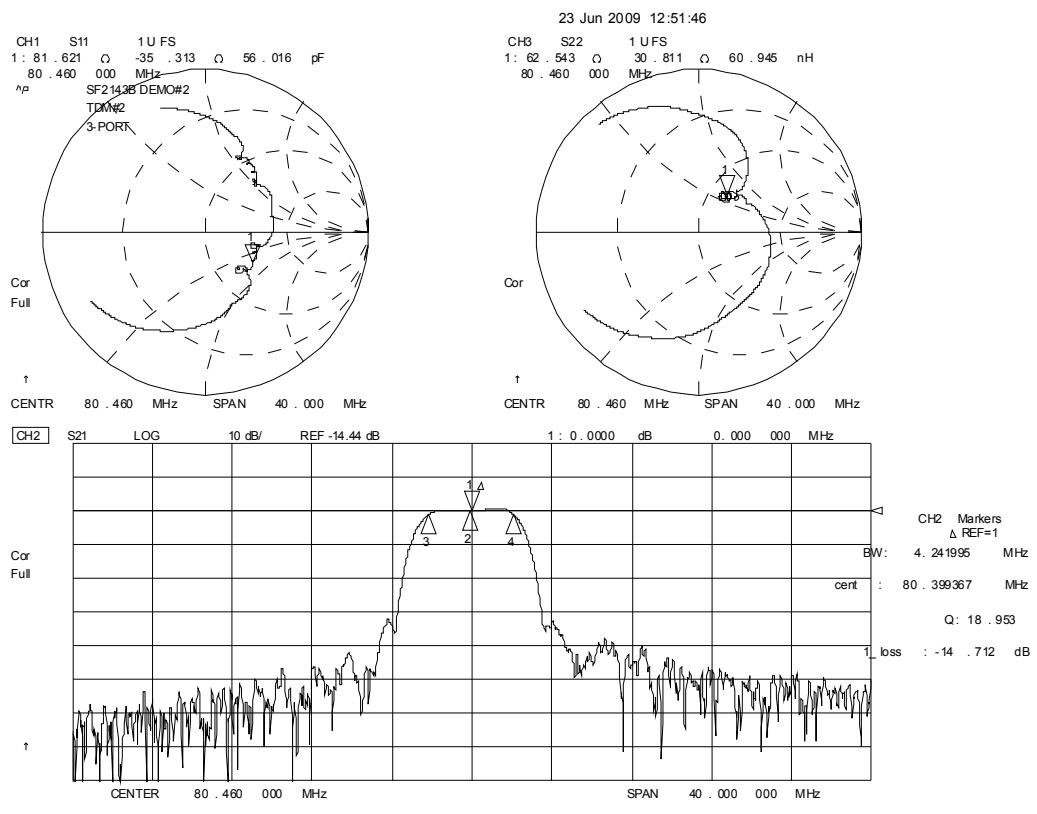

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.

TDM1 Amplitude and Impedance Plots

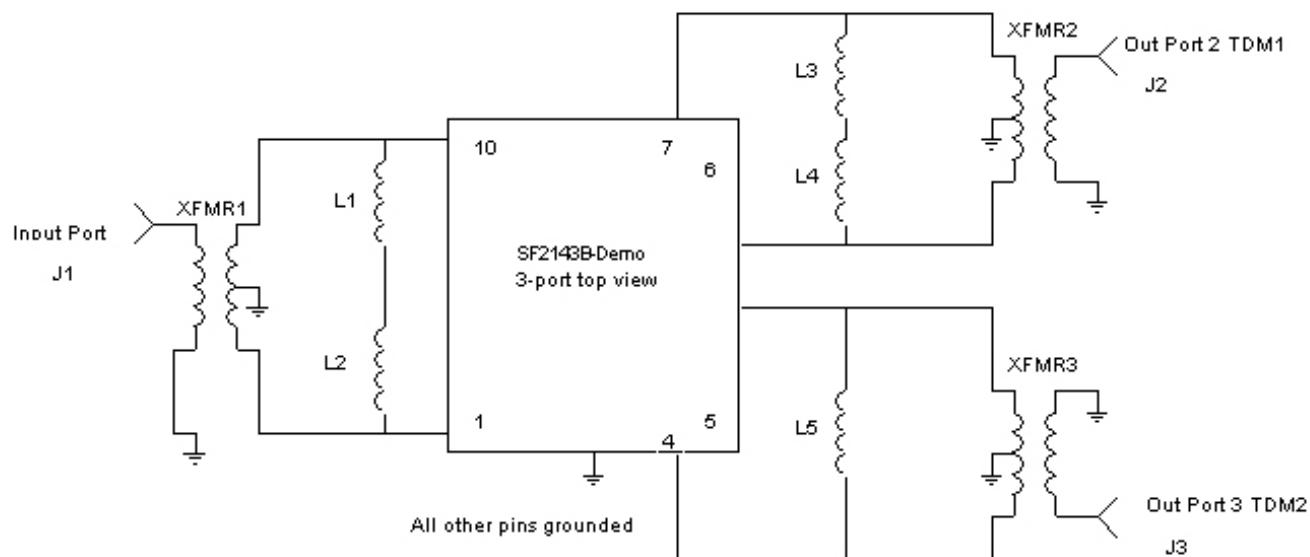


TDM2 Amplitude and Impedance Plots



Test Circuit

SF2143B Demo Board



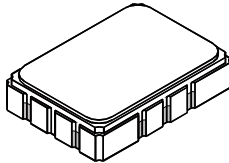
J1-J3	500-0248-002 4 hole flange SMA connector
PCB	400-1768-001 Gold 7 × 5 mm pkg PCB
XFMR2, XFMR3	501-0912-004 16:1 Transformer
XFMR1	501-0912-001 4:1 Transformer

L1	501-0782-101 100nH 0805 Ind
L2	501-0782-270 27nH 0805 Ind
L3	501-0782-390 390nH 0805 Ind
L4	501-0782-120 12nH 0805 Ind
L5	501-0782-331 330 nH 0805 Ind

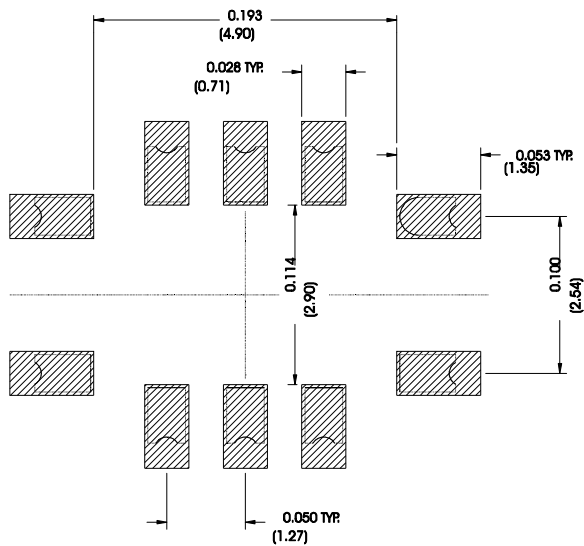
SMP-03 Case

10-Terminal Ceramic Surface-Mount Case

7 x 5 mm Nominal Footprint



Recommended PCB Footprint



Case Dimensions

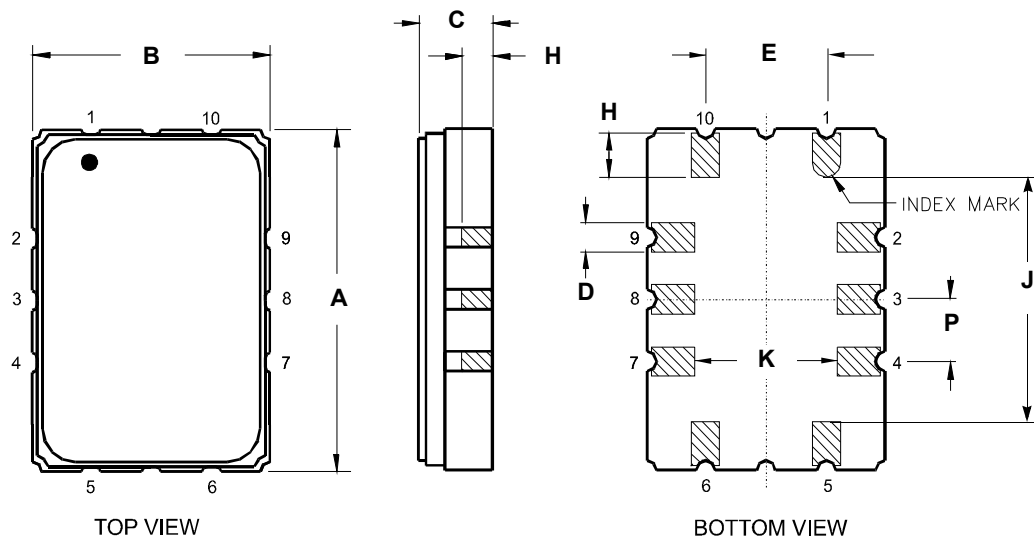
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	6.80	7.00	7.20	0.268	0.276	0.283
B	4.80	5.00	5.20	0.189	0.197	0.205
C	-	1.65	2.00	-	0.065	0.079
D	0.47	0.60	0.73	0.019	0.024	0.029
E	2.41	2.54	2.67	0.095	0.100	0.105
H	0.87	1.00	1.13	0.034	0.039	0.044
J	4.87	5.00	5.13	0.192	0.197	0.202
K	2.87	3.00	3.13	0.113	0.118	0.123
P	1.14	1.27	1.40	0.045	0.050	0.055

Electrical Connections

Connection		Terminals
Port 1	Input	1
	Input	10
Port 2	Output TDM1	6
	Output TDM1	7
Port 3	Output TDM2	4
	Output TDM2	5
Ground		All others

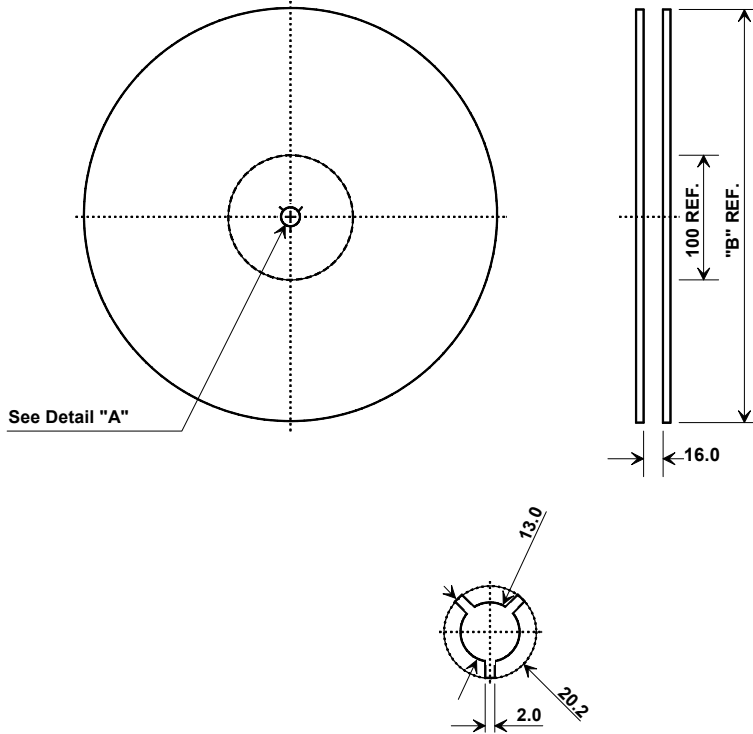
Materials

Solder Pad Plating	0.3 to 1.0 μ m Gold over 1.27 to 8.89 μ m Nickel
Lid Plating	2.0 to 3.0 μ m Nickel
Body	Al ₂ O ₃ Ceramic
Pb Free	



Tape and Reel Specifications

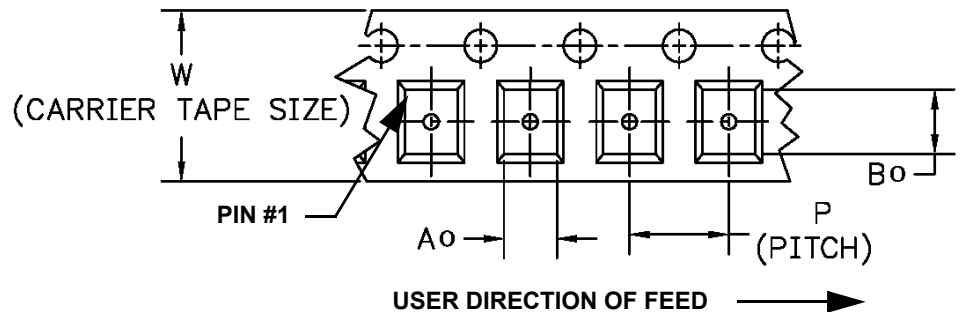
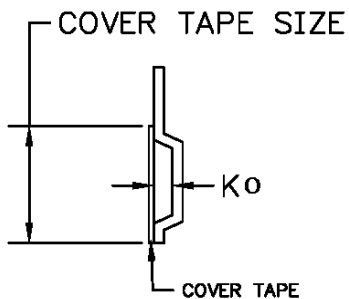
Tape and Reel Standard per ANSI/EIA-481



"B"		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	2000

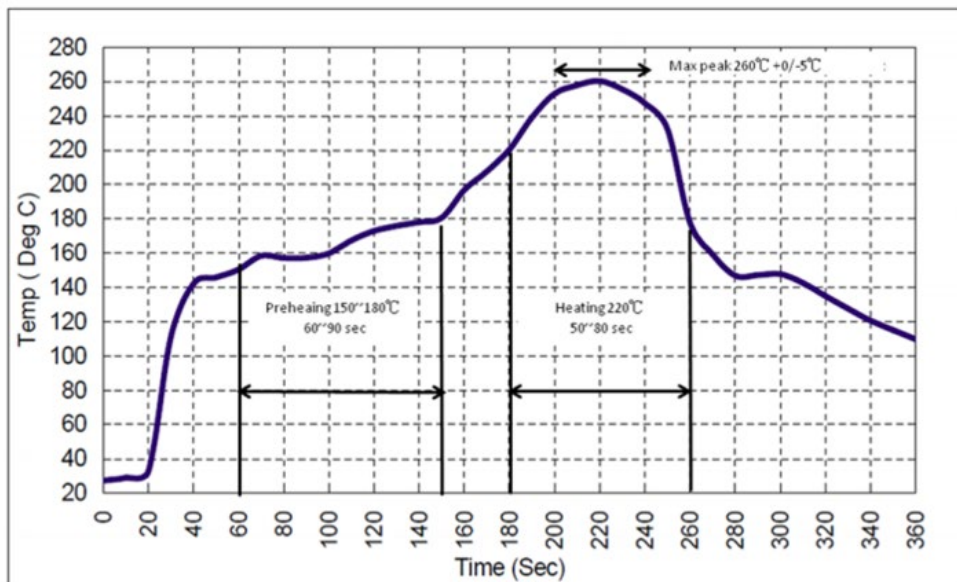
COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	5.5 mm
Bo	7.5 mm
Ko	2.0 mm
Pitch	8.0 mm
W	16.0 mm



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.



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