Product Description

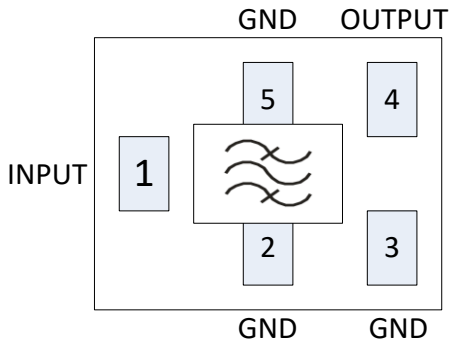
The NS92141FE is a high-performance Band-pass Filter designed for use in Band41 full band.

The NS92141FE is designed with NewSonic's innovative D-BAW technology and exhibits ultra small insertion loss with a miniaturized package size of only 1.1 x 0.9 mm and maximum height of 0.65 mm.

Applications

- Band41 TRX Application

Functional Block Diagram



Top Thru View

Product Features

- Low Insertion Loss
- Standard Size: 1.1 x 0.9 mm
- Operating Temperature -30 to +85°C
- Single Ended Operation
- RoHS2.0 Compliant, Halogen Free Pb-free Module Package, MSL3

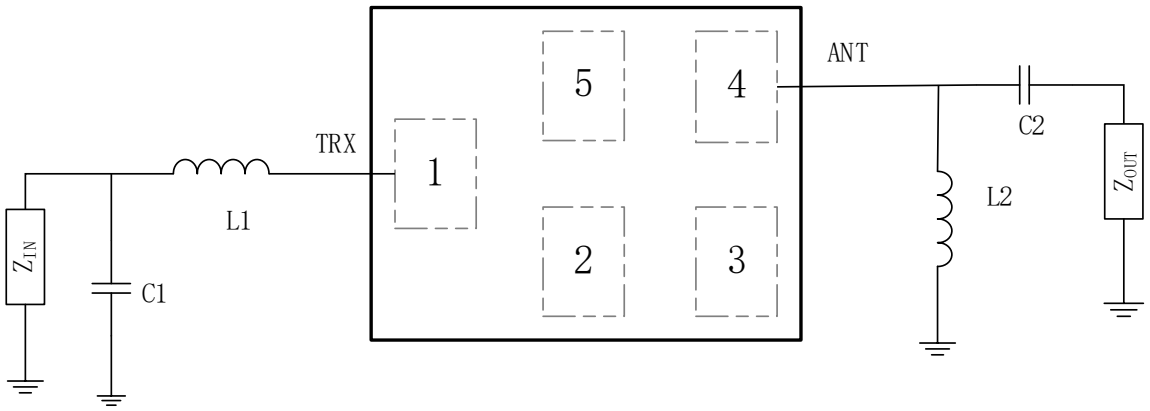
Ordering Information

Part No.	Description
NS92141FE	Packaged Part
NS92141FE_EVB	Evaluation Board

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40°C ~ +85°C
Operating Temperature	-30°C ~ +85°C
RF Input Power	+32dBm, +50 °C for 5000 hours.
ESD Voltage	325 V (max.) Human Body Model
Maximum DC Voltage	3V

Testing Circuit



Z_{IN}	50 ohm
Z_{OUT}	50 ohm
L1*	4.0 nH
C1*	0.8 pF
L2*	2.8 nH
C2*	1.2 pF
Pin1	TRX
Pin4	ANT
Pin2/3/5	GND

* Ideal Value

Electrical Specifications

INPUT terminating impedance: Z_{IN} = 50 ohm // 0.8pF + 4.0 nH

OUTPUT terminating impedance: Z_{OUT} = 50 ohm + 1.2pF //2.8 nH

Parameter	Frequency	Min.	Typ.	Max.	Unit	Note
		-30℃ ~ +85℃				
Insertion Loss	2496 to 2690 MHz		1.7	1.9	dB	
	2515 to 2675 MHz		1.3	1.5	dB	
Ripple[a]	2496 to 2690 MHz		0.9	1.3	dB	
	2515 to 2675 MHz		0.5	0.9	dB	
VSWR_INPUT	2496 to 2690 MHz		1.3	1.4		
VSWR_OUTPUT	2496 to 2690 MHz		1.3	1.4		
Attenuation	450 to 960 MHz	41	44		dB	
	1427 to 1606 MHz	25	29		dB	
	1710 to 1785 MHz	30	33		dB	
	1805 to 1880 MHz	35	38		dB	
	1920 to 1980 MHz	30	33		dB	
	2110 to 2170 MHz	23	26		dB	
	2300 to 2400 MHz	23	26		dB	
	2402 to 2422 MHz	33	35		dB_{int}	WiFi Ch1
	2407 to 2427 MHz	36	38		dB_{int}	WiFi Ch2
	2412 to 2432 MHz	38	41		dB_{int}	WiFi Ch3
	2417 to 2437 MHz	42	45		dB_{int}	WiFi Ch4
	2422 to 2442 MHz	46	49		dB_{int}	WiFi Ch5
	2427 to 2447 MHz	47	50		dB_{int}	WiFi Ch6
	2432 to 2452 MHz	44	46		dB_{int}	WiFi Ch7
	2437 to 2457 MHz	39	42		dB_{int}	WiFi Ch8
	2442 to 2462 MHz	27	34		dB_{int}	WiFi Ch9
	2447 to 2467 MHz	16	21		dB_{int}	WiFi Ch10
	2452 to 2472 MHz	10	13		dB_{int}	WiFi Ch11
	2457 to 2477 MHz	6	8		dB_{int}	WiFi Ch12
	2462 to 2482 MHz	4	5		dB_{int}	WiFi Ch13
	3300 to 4200 MHz	19	21		dB	N77/N78
	4400 to 5000 MHz	27	30		dB	N79
	4992 to 5380 MHz	33	36		dB	2nd fo
	5150 to 5850 MHz	34	37		dB	Wi-Fi 5GHz

	5925 to 7125 MHz	39	42		dB	Wi-Fi 6E
	7488 to 8000 MHz	46	49		dB	3f0

[a].Ripple is the difference between the max and min value in passband.

Typical Transmission Coefficient (+25℃)

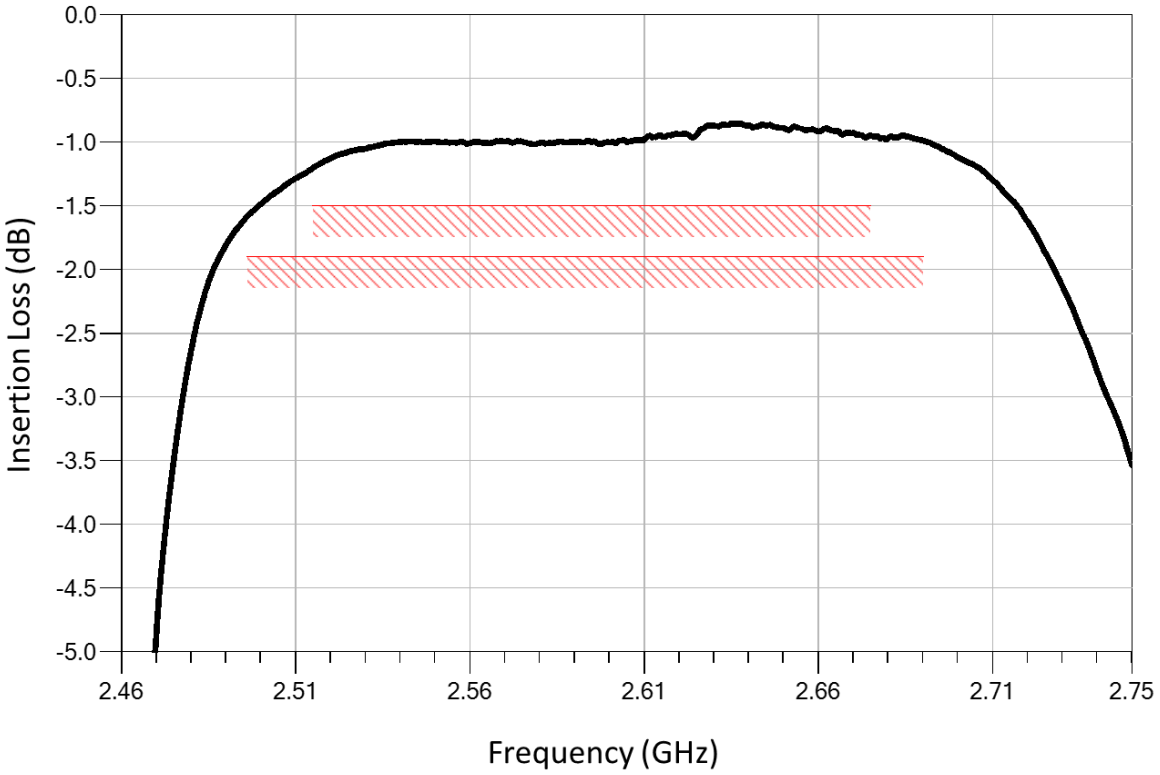


Figure 1. Passband Insertion Loss, 2496 – 2690 MHz

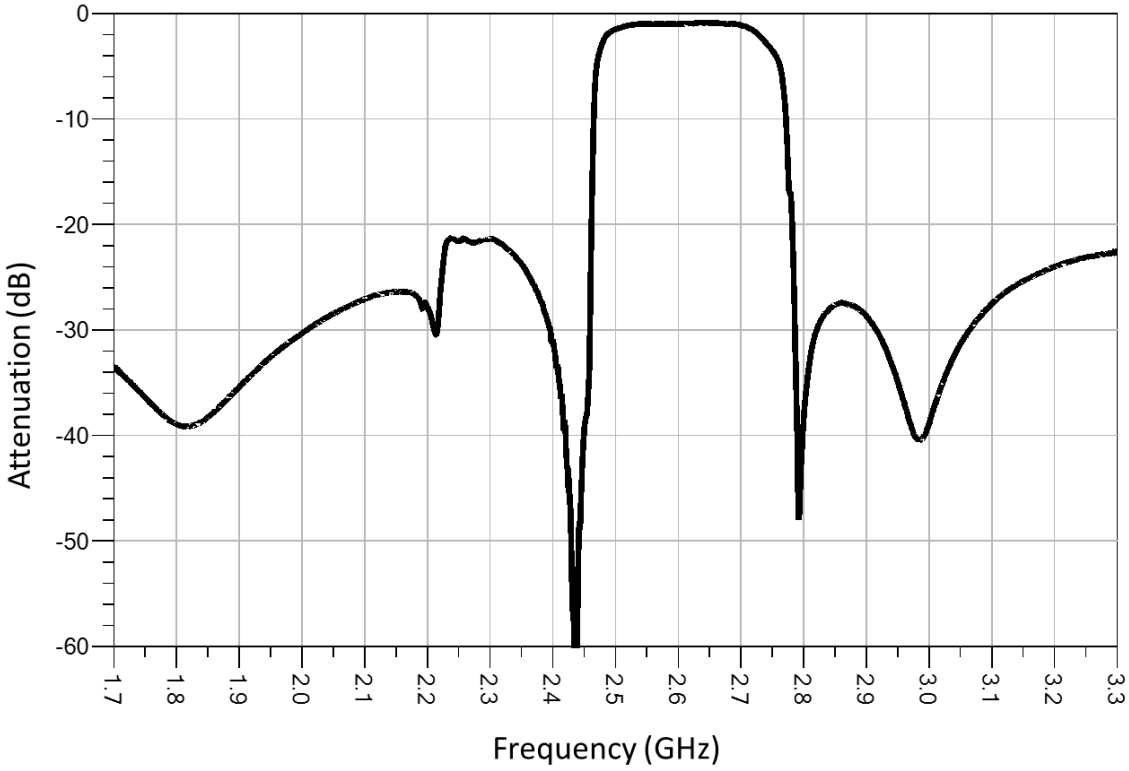


Figure 2. Narrow Band Attenuation, 1700 – 3300 MHz

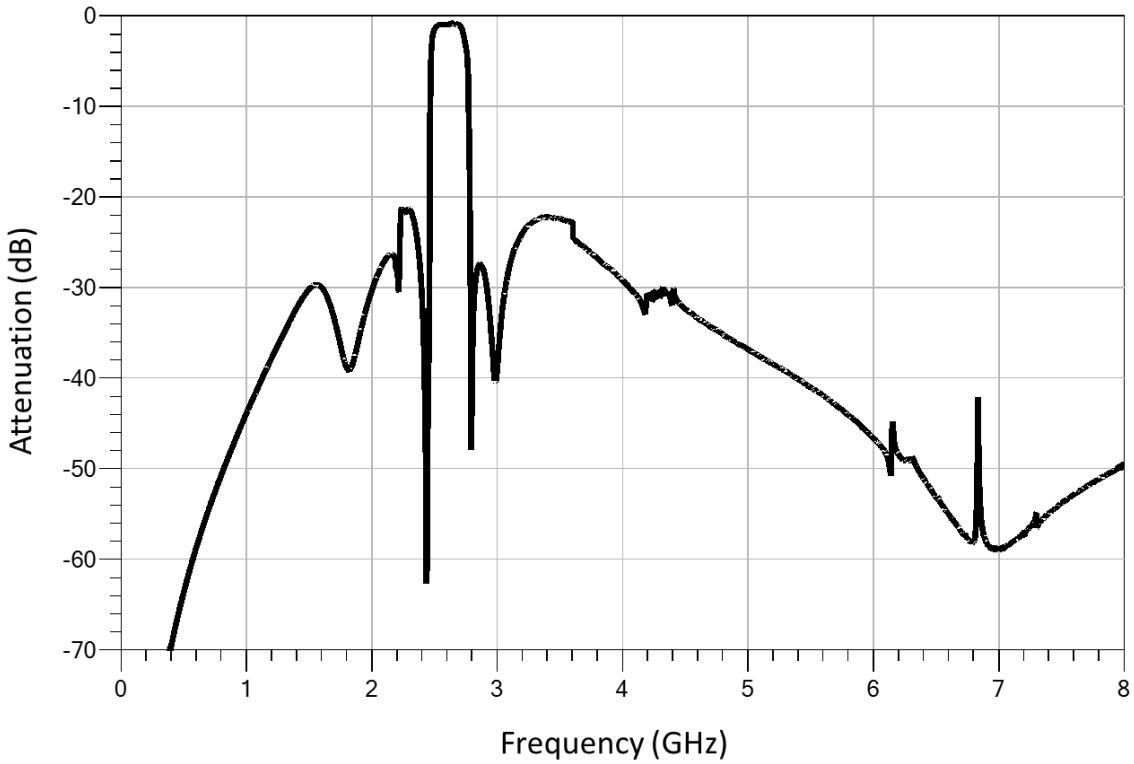
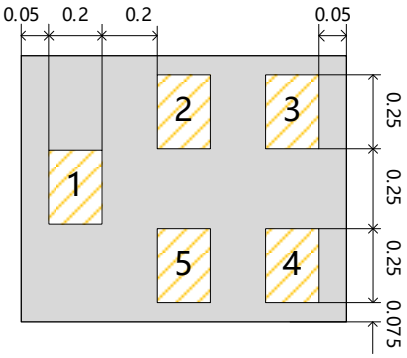
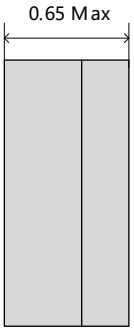


Figure 3. Wide Band Attenuation, 450 – 8000 MHz

Package & Dimensions (Unit: mm)

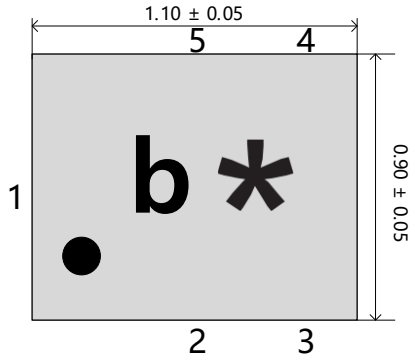
Bottom View





Side View

Top View

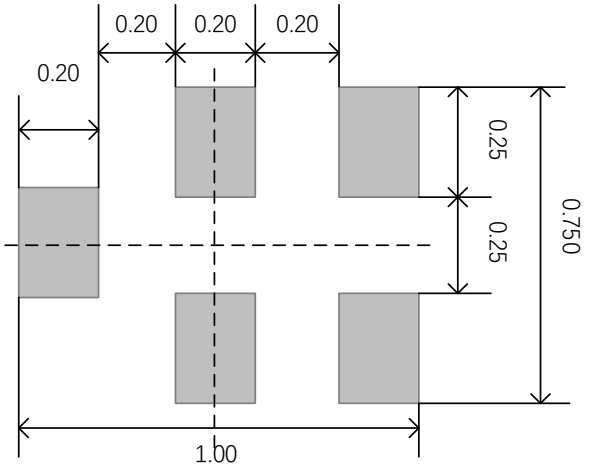


Note:

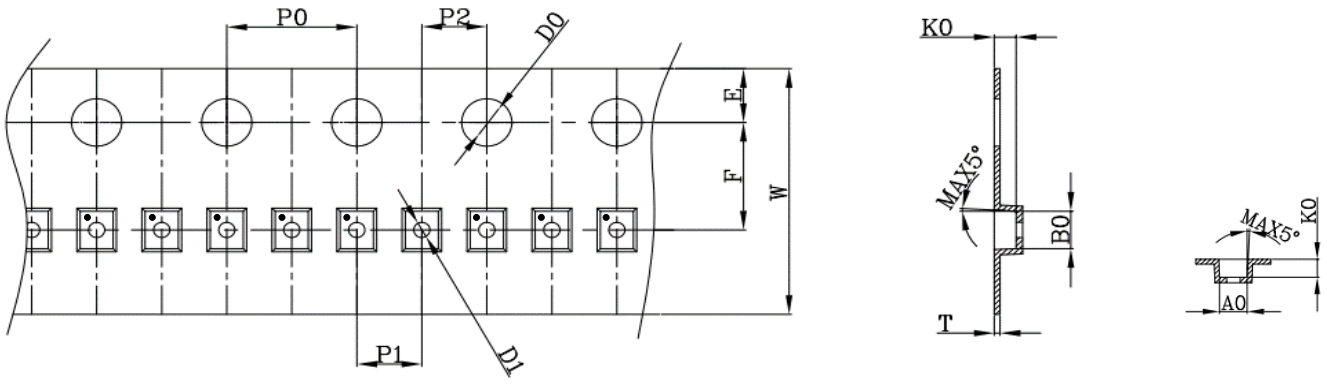
The character 'b' Indicates NS92141FE.

The character '*' indicates date code.

PCB Mounting Pattern (Unit: mm)



Tape and Reel Information (Unit: mm)



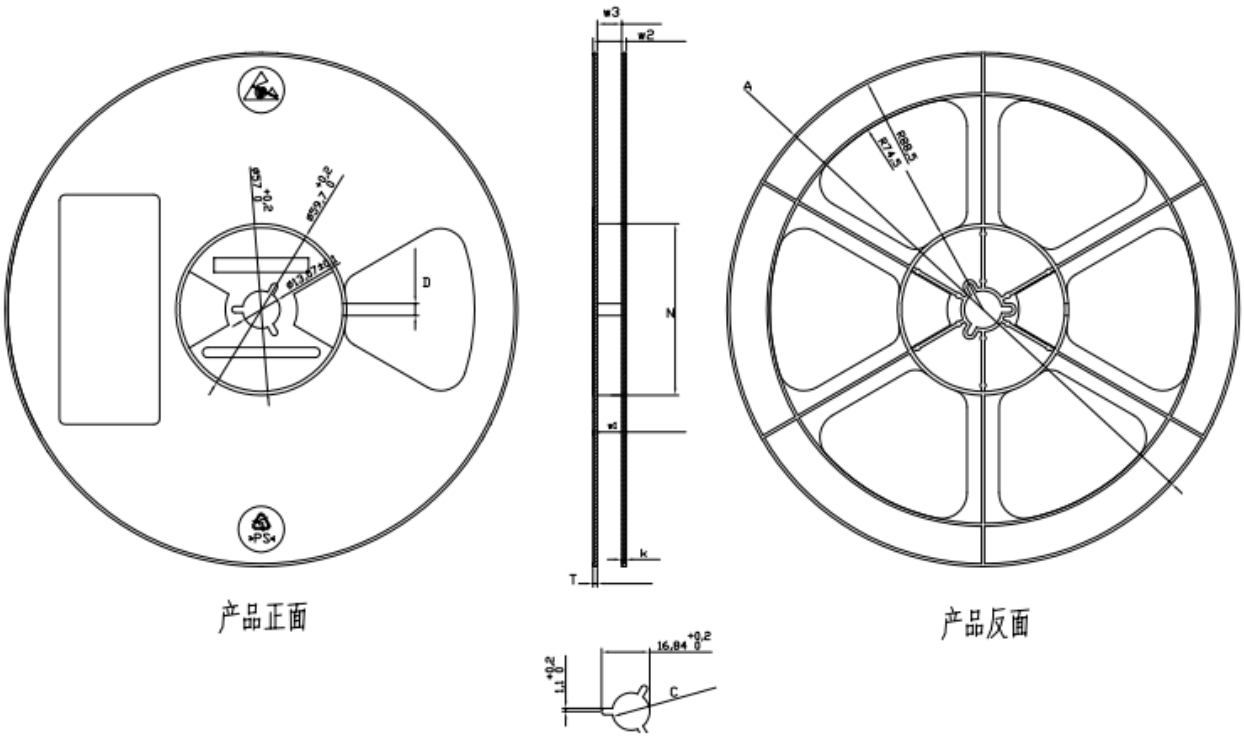
A0	1.02+/-0.05	T	0.20+/-0.03
B0	1.22+/-0.05	E	1.75+/-0.10
K0	0.67+/-0.05	F	3.50+/-0.05
P0	4.00+/-0.10	D0	1.55+/-0.05
P1	2.00+/-0.05	D1	0.50+/-0.10
P2	2.00+/-0.05	W	8.00+0.30/-0.10

(1) Black antistatic composite PC.

(2) Cumulative tolerance of 10 sprocket holes is ± 0.20.

(3) All dimensions meet EIA-481-E requirements.

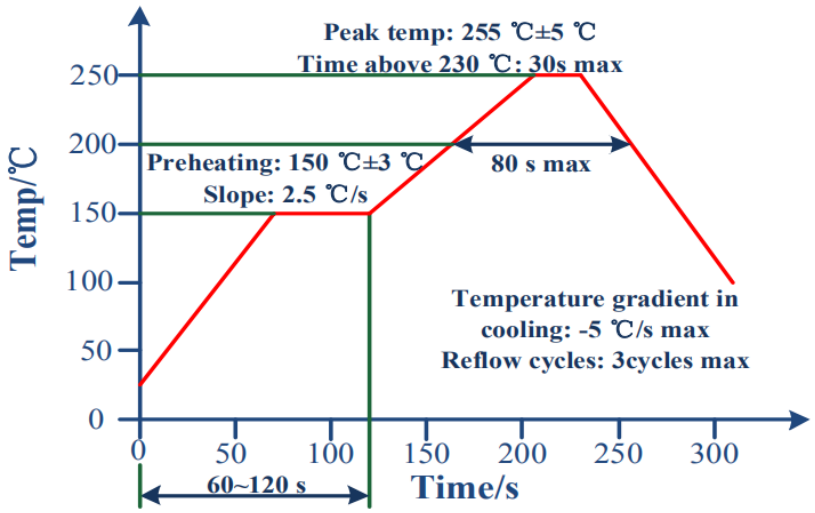
(4) The sector of 250mm straps shall not exceed 2mm.



Reeling Quantity: 10000 pcs / Reel

Type	A	N	C	D	w1	w2	w3	T	k
8mm	$\Phi 180^{+2}_{-2}$	$\Phi 60^{+1}_{-1}$	$\Phi 13.1^{+0.2}_{-0.2}$	$\Phi 4.2^{+0.5}_{-0.5}$	8.4^{+1}_{-0}	11.6^{+1}_{-1}	8.75^{+1}_{-1}	$1.5^{+0.15}_{-0.15}$	$1.25^{+0.1}_{-0.05}$

Recommended IR Reflow Profile



Important Notes

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