

Product Description

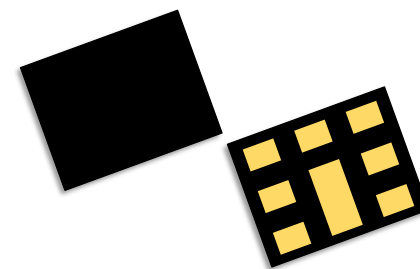
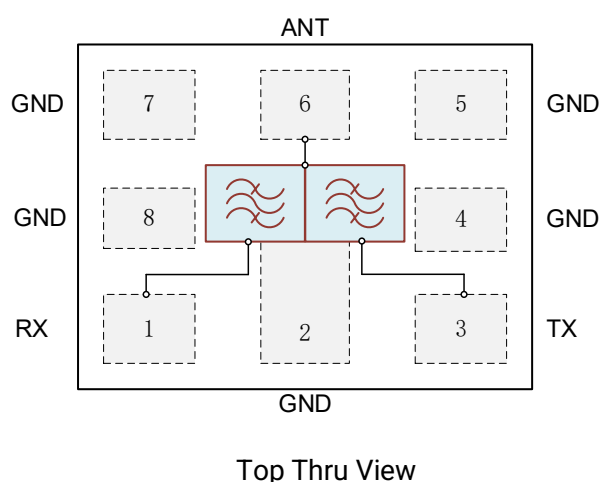
The NS73128A is a high performance, Surface Acoustic Wave (Alpha-SAW) Duplexer for LTE-B28/5G NR-n28 application with low insertion loss and high isolation.

The NS73128A uses common module packaging techniques to achieve the industry standard 1.8 x 1.4 mm footprint. The duplexer exhibits excellent power handling capabilities.

Applications

- LTE Band 28 Duplexer Application
- 5G n28 Duplexer Application

Functional Block Diagram



Product Features

- Low Insertion Loss
- High Isolation
- Standard Size: 1.8 x 1.4 mm
- Operating Temperature: -30 to +85°C
- Single Ended Operation
- RoHS2.0 Compliant, Halogen Free
Pb-free Module Package, MSL3

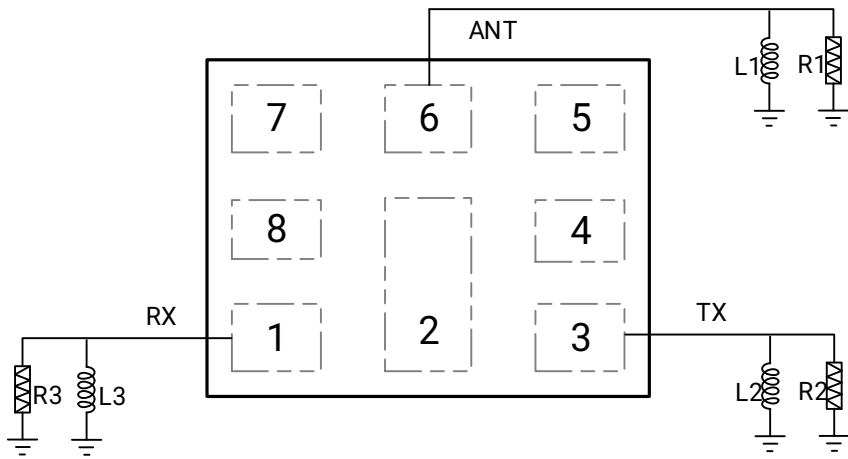
Ordering Information

Part No.	Description
NS73128A	Packaged Part
NS73128A_EVB	Evaluation Board

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40°C ~ +85°C
Operating Temperature	-30°C ~ +85°C
RF Input Power	+30dBm, +55°C for 5000 hours
Maximum DC Voltage	3V

Testing Circuit (Top Thru View)



R1	50 ohm
R2	50 ohm
R3	50 ohm
L1*	13 nH
L2	NC
L3	NC
Pin1	RX
Pin3	TX
Pin6	ANT
Pin 2/4/5/7/8	GND

*Ideal Value

Electrical Specifications (TX)

ANT terminating impedance: 50 Ω // 13 nH
TX terminating impedance: 50 Ω
RX terminating impedance: 50 Ω

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	703 to 748 MHz		1.9	2.7	dB	
Ripple ^[b]	703 to 748 MHz		1.2	1.9	dB	
VSWR_TX	703 to 748 MHz		1.8	2.0		
VSWR_ANT	703 to 748 MHz		1.8	1.9		
Attenuation	450 to 670 MHz	36	39		dB	
	670 to 694 MHz	28	30		dB	
	694 to 698 MHz	11	17		dB	
	758 to 803 MHz	41	58		dB	
	859 to 894 MHz	36	39		dB	
	1225 to 1606 MHz	37	40		dB	
	1406 to 1466 MHz	43	45		dB	2f ₀
	1710 to 1785 MHz	36	38		dB	
	1805 to 1880 MHz	35	38		dB	
	1920 to 1980 MHz	35	37		dB	B1 TX
	2110 to 2200 MHz	33	36		dB	
	2401 to 2483 MHz	33	35		dB	2.4G WIFI
	2109 to 2244 MHz	33	35		dB	3f ₀
	2500 to 2570 MHz	31	33		dB	B7 TX
	2496 to 2690 MHz	31	33		dB	B41 TX
	2812 to 2932 MHz	30	32		dB	4f ₀

[a]. Typical data is the worst value of the parameter over the indicated band at +25°C.

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

Electrical Specifications (RX)

ANT terminating impedance: 50 Ω // 13 nH

TX terminating impedance: 50 Ω

RX terminating impedance: 50 Ω

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	758 to 803 MHz		2.3	3.0	dB	
Ripple ^[b]	758 to 803 MHz		1.6	2.3	dB	
VSWR_RX	758 to 803 MHz		1.5	1.8		
VSWR_ANT	758 to 803 MHz		1.5	1.8		
Attenuation	617 to 703 MHz	38	41		dB	
	703 to 748 MHz	47	52		dB	
	880 to 915 MHz	42	44		dB	
	1710 to 1785 MHz	45	48		dB	B3 TX
	1805 to 1880 MHz	46	49		dB	B3 RX
	1920 to 1980 MHz	46	49		dB	B1 TX
	2401 to 2483 MHz	48	52		dB	2.4G WIFI
	2500 to 2570 MHz	50	53		dB	B7 TX
	2496 to 2690 MHz	50	53		dB	B41 TX
	4400 to 5000 MHz	55	58		dB	n79
	4900 to 5950 MHz	47	50		dB	n79

[a]. Typical data is the worst value of the parameter over the indicated band at +25°C.

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

Electrical Specifications (Isolation)

ANT terminating impedance: 50 Ω // 13 nH

TX terminating impedance: 50 Ω

RX terminating impedance: 50 Ω

Parameter	Frequency	Min.	Typ.	Max.	Unit	Note
		-30°C to +85°C				
Isolation	703 to 748 MHz	49	52		dB	
	703.7 to 747.3 MHz	51	52		dB	For LTE 1.4MHz
	758 to 803 MHz	47	55		dB	
	758.7 to 802.3 MHz	53	57		dB	For LTE 1.4MHz

Typical TX to ANT Transmission Coefficient (+25°C)

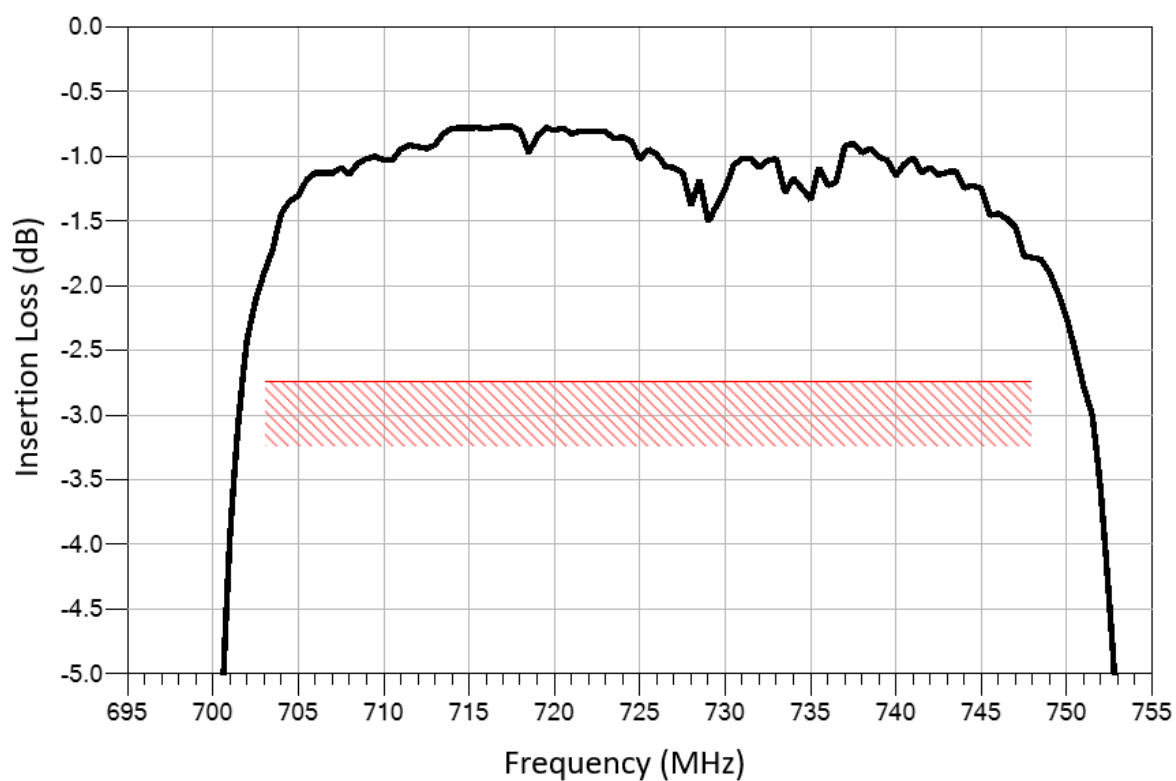


Figure 1. Passband Insertion Loss, 703 – 748 MHz

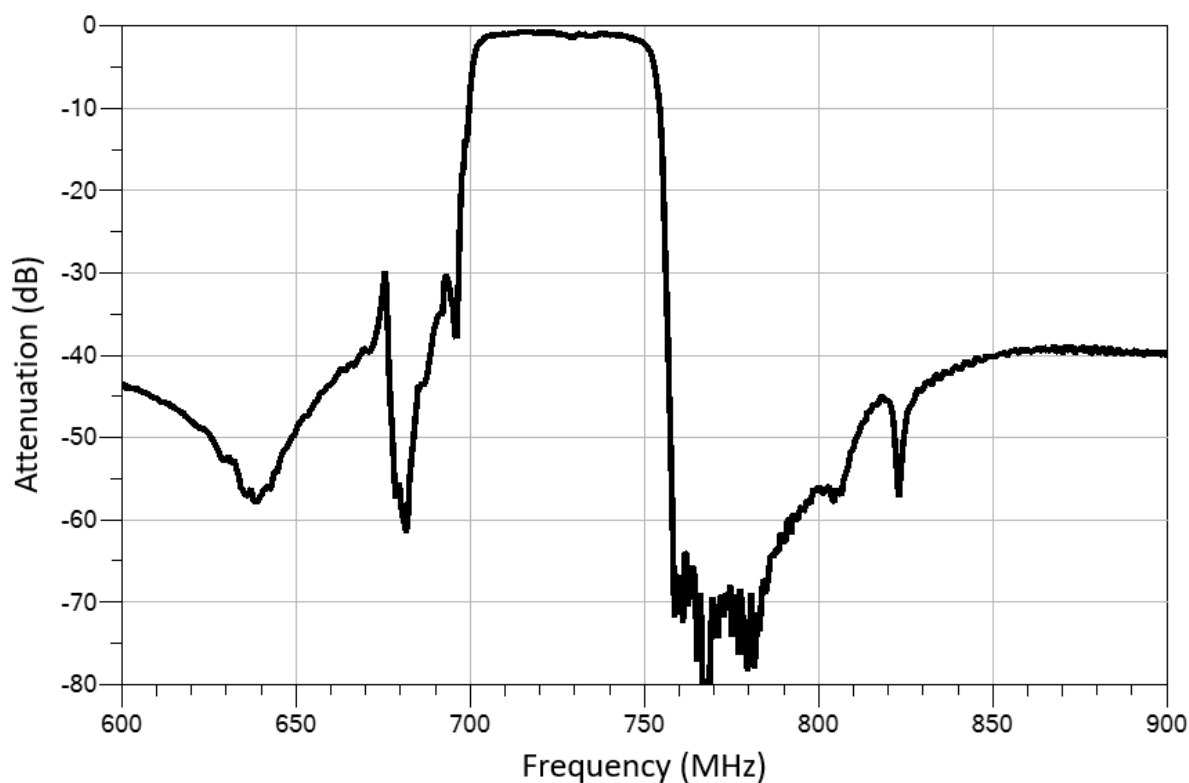


Figure 2. Narrow Band Attenuation, 600 – 900 MHz

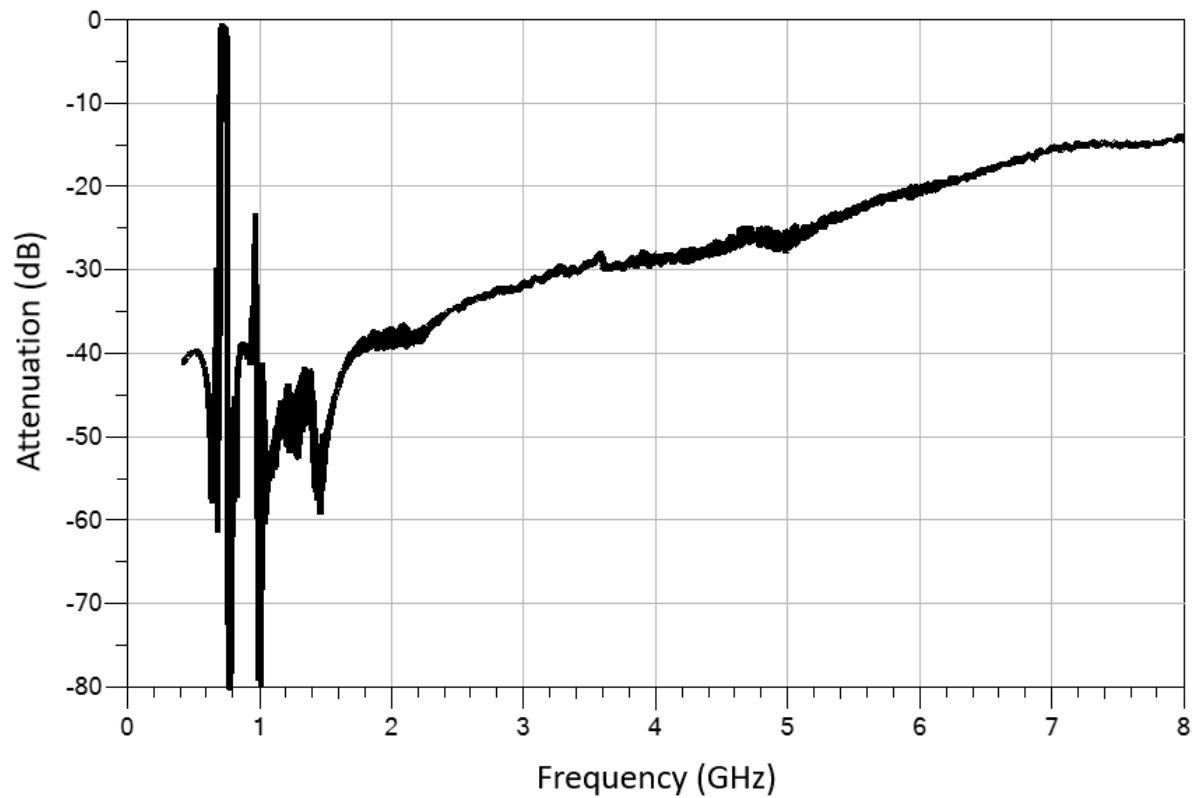


Figure 3. Wide Band Attenuation, 450 – 8000 MHz

Typical ANT to RX Transmission Coefficient (+25°C)

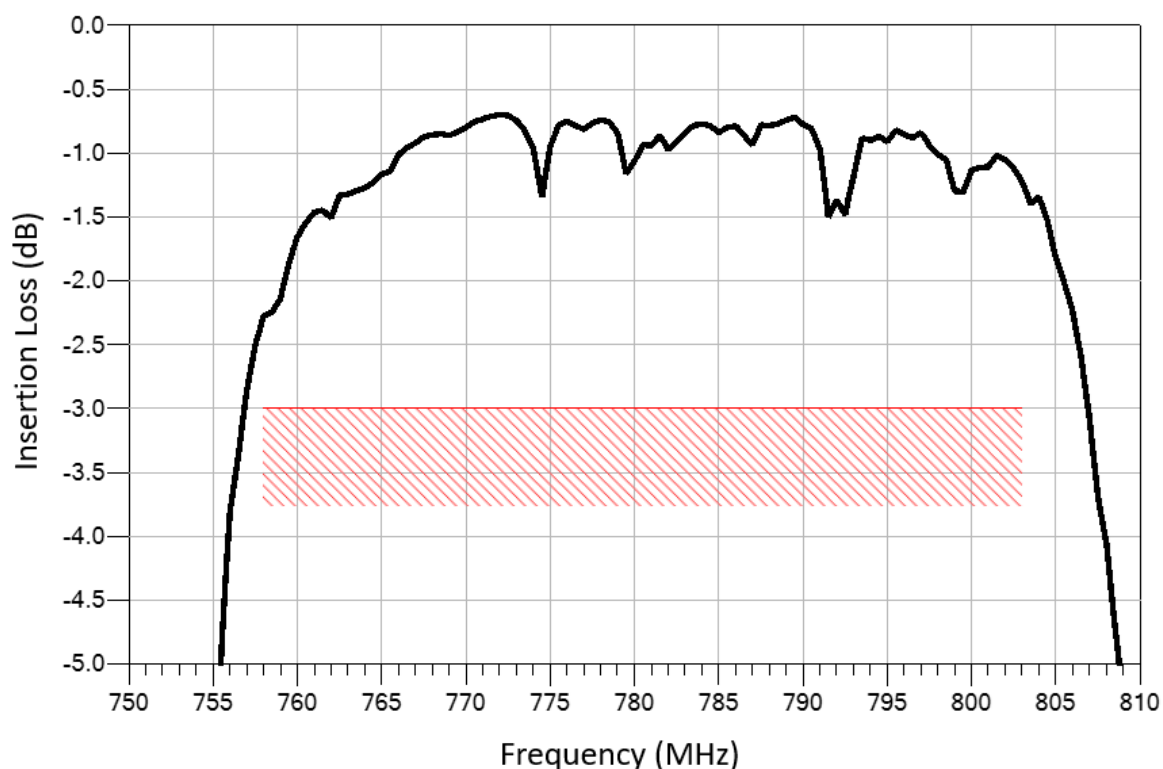


Figure 4. Passband Insertion Loss, 758 – 803 MHz

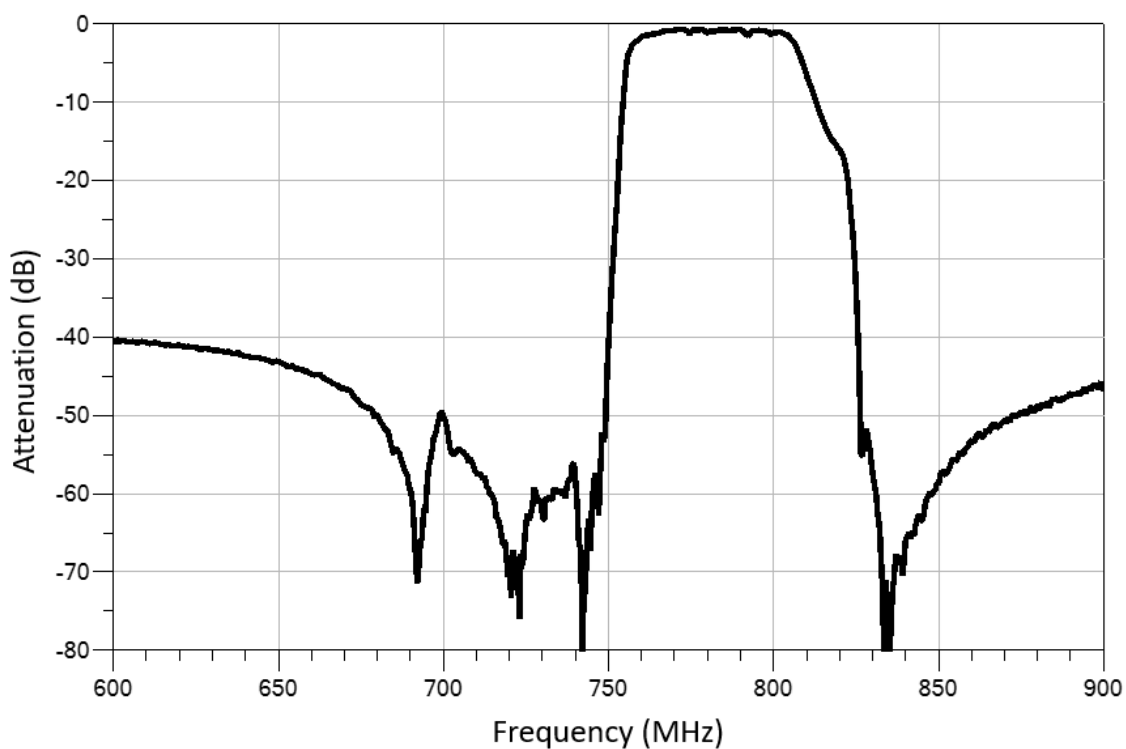


Figure 5. Narrow Band Attenuation, 600 – 900 MHz

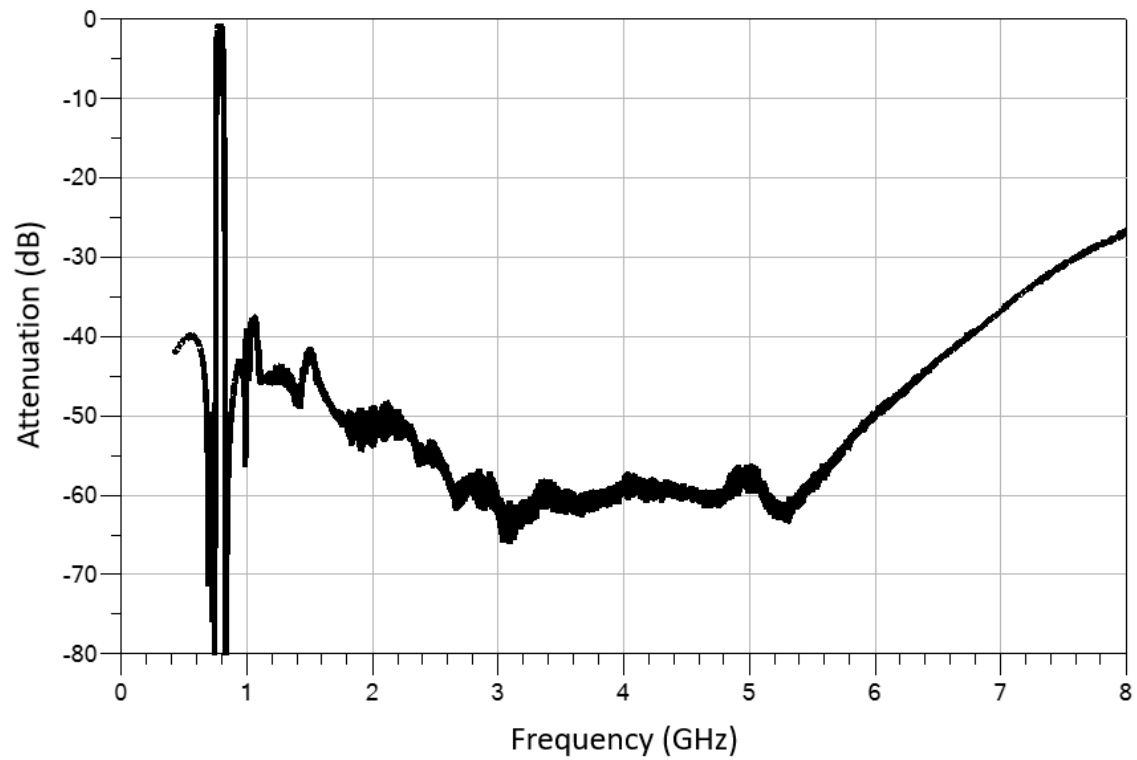
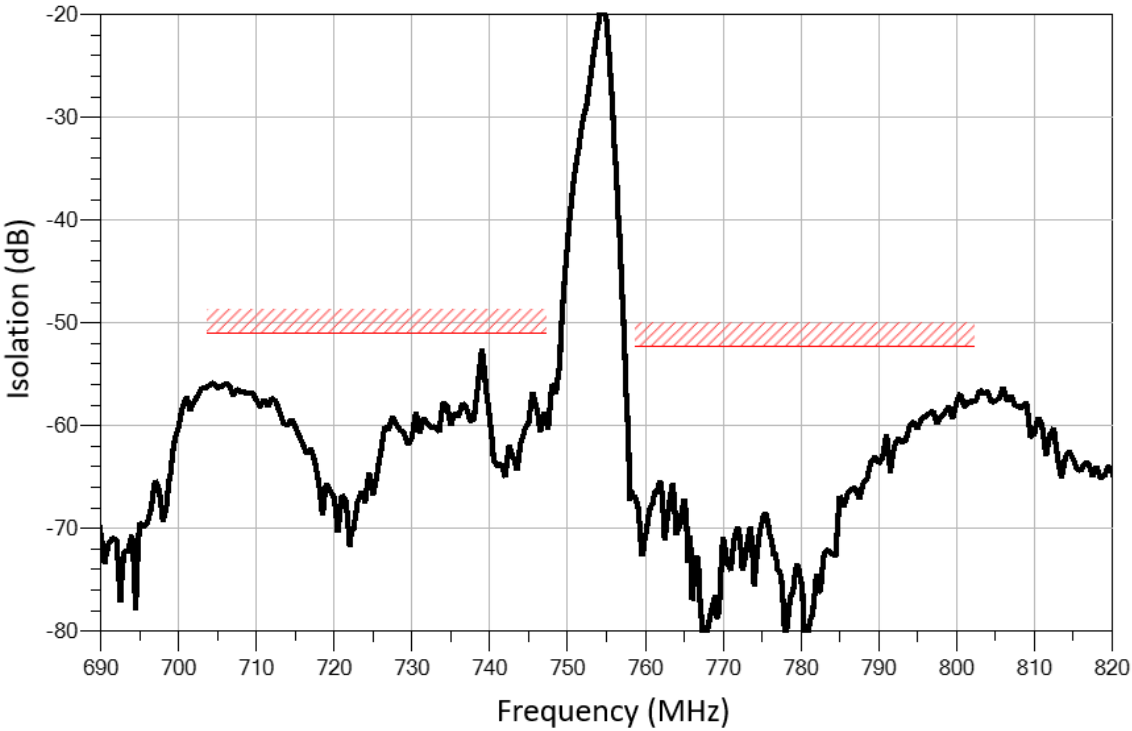
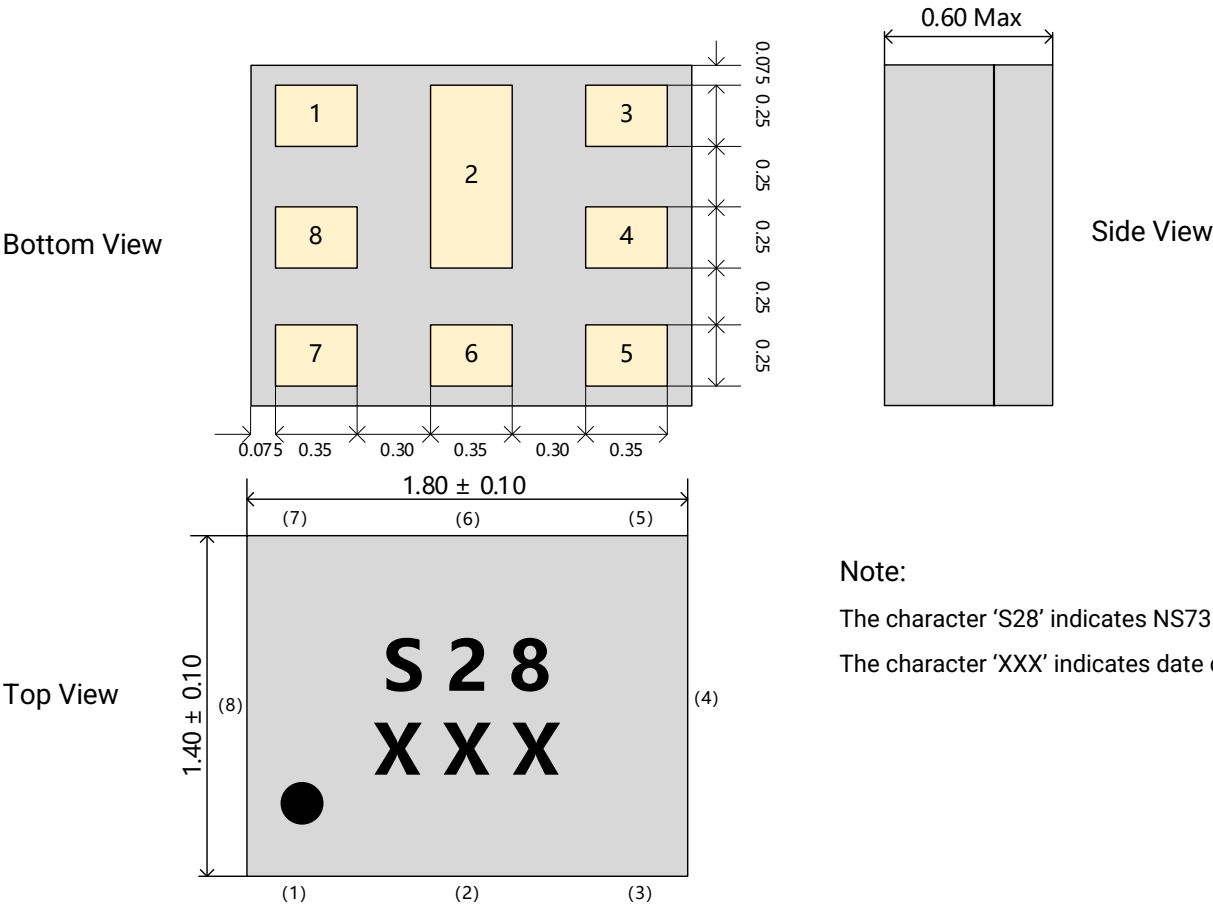


Figure 6. Wide Band Attenuation, 450 – 8000 MHz

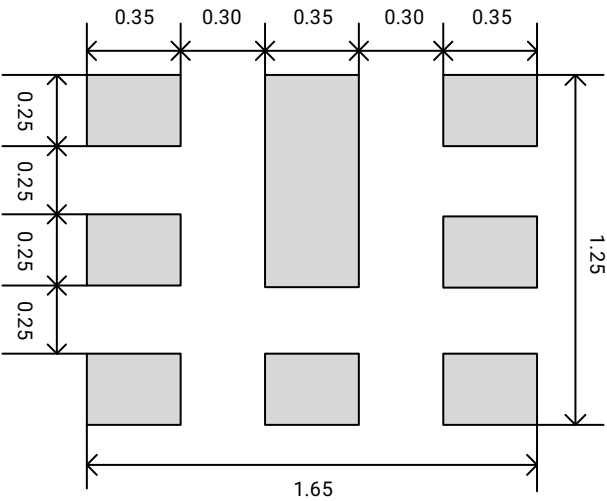
Typical Isolation (+25°C)



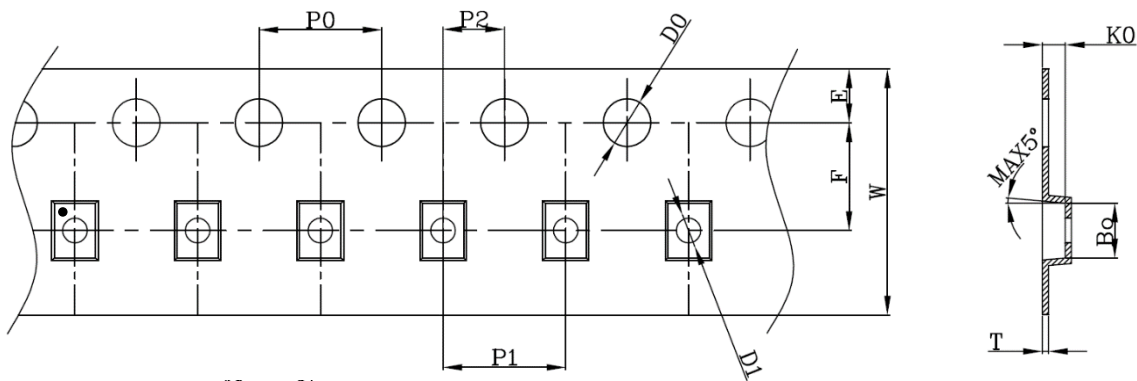
Package & Dimensions (Unit: mm)



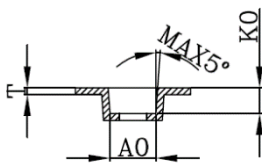
PCB Mounting Pattern (Unit: mm)



Tape and Reel Information (Unit: mm)



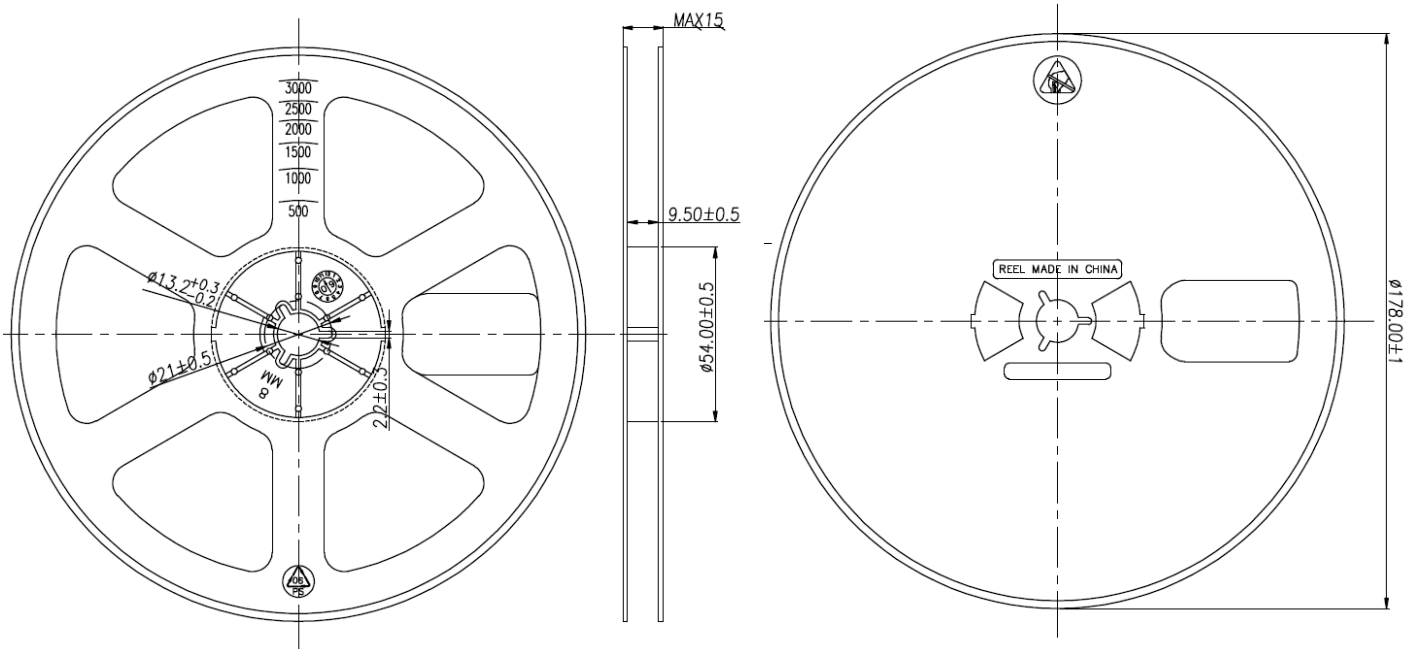
A0	B0	K0	P0	P1	P2
1.35±0.05	1.78±0.05	0.70±0.05	4.00±0.10	4.00±0.10	2.00±0.05
T	E	F	D0	D1	W
0.20±0.05	1.75±0.05	3.50±0.05	1.55±0.05	0.80±0.10	8.00±0.10



Note:

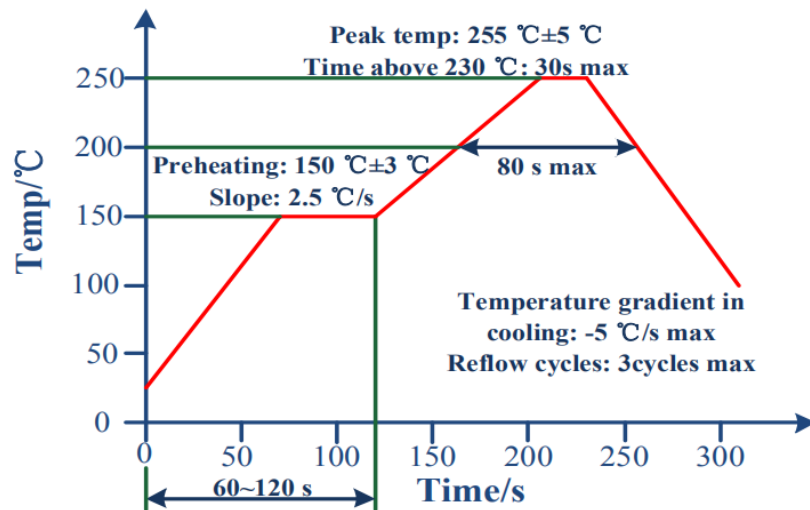
- (1) Black antistatic composite PC.
- (2) Cumulative tolerance of 10 sprocket holes is ± 0.20 .
- (3) All dimensions meet EIA-481-E requirements.
- (4) The sector of 250mm straps shall not exceed 2mm.

Reel



Reeling Quantity: 5000 PCS / Reel

Recommended IR Reflow Profile



Important Notes

1. All data or information contained herein are subject to change without prior notice. Please contact NEWSONIC for verifying details of product specification before ordering NEWSONIC product.
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