

Product Description

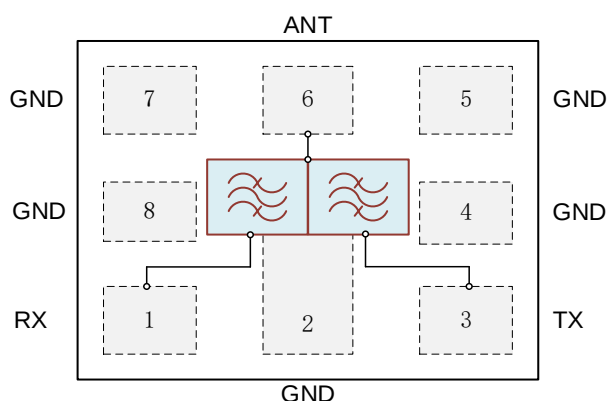
The NS73220B is a high-performance, Surface Acoustic Wave (SAW) Duplexer for B20 application with low insertion loss and high isolation.

The NS73220B uses Chip Scale Packaging (CSP) techniques to achieve the industry advanced 1.6 mm x 1.2 mm footprint and 0.55 mm typical height. The duplexer exhibits excellent power handling capabilities.

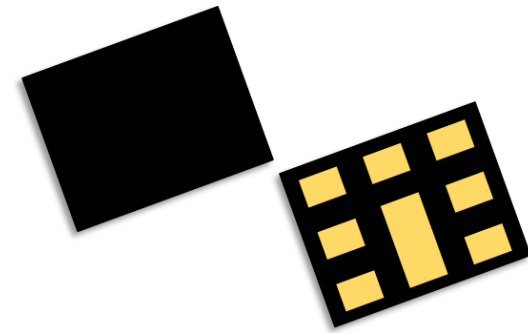
Applications

Band20 Duplexer Application

Functional Block Diagram



Top Thru View



Product Features

- Low Insertion Loss
- High Isolation
- Standard Size: 1.6 mm x 1.2 mm
- Operating Temperature -30 to +85°C
- Single Ended Operation
- RoHS2.0 Compliant, Halogen Free
Pb-free Module Package, MSL3

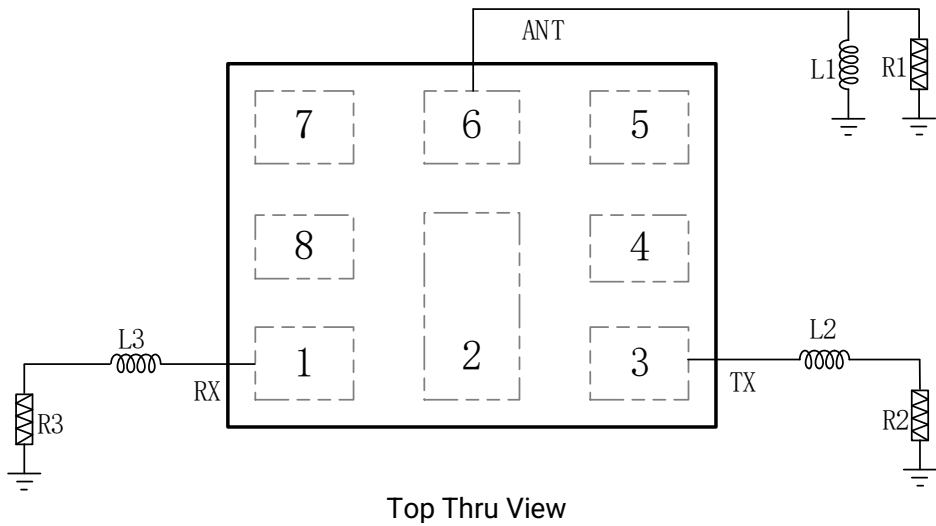
Ordering Information

Part No.	Description
NS73220B	Packaged Part
NS73220B_EVB	Evaluation Board

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40°C ~ +85°C
Operating Temperature	-30°C ~ +85°C
RF Input Power	+30dBm, +50°C for 5000 hours
Maximum DC Voltage	3 V

Testing Circuit (Top Thru View)



R1	50 ohm
R2	50 ohm
R3	50 ohm
L1*	12 nH
L2*	6.8 nH
L3*	3.9 nH
Pin1	RX
Pin3	TX
Pin6	ANT
Pin 2/4/5/7/8	GND

* Ideal Value

Electrical Specifications (TX)

ANT Terminating Condition: 50Ω // 12 nH
TX Terminating Condition: 50Ω + 6.8 nH
RX Terminating Condition: 50Ω + 3.9 nH

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	832.25 to 861.75 MHz		1.6	1.8	dB	
Ripple ^[b]	832 to 862 MHz		1.0	1.4	dB	
VSWR_TX	832 to 862 MHz		1.6	1.8		
VSWR_ANT	832 to 862 MHz		1.7	1.9		
Attenuation	450 to 771 MHz	35	38		dB	
	791 to 821 MHz	53	56		dB	B20 RX
	925 to 960 MHz	35	39		dB	B8_RX
	1559 to 1606 MHz	50	53		dB	GPS L1
	1664 to 1724 MHz	50	53		dB	2f0
	1710 to 1785 MHz	50	54		dB	B3 TX
	1805 to 1880 MHz	48	51		dB	B3 RX
	1920 to 1980 MHz	47	51		dB	B1 TX
	2496 to 2586 MHz	47	50		dB	3f0
	2401 to 2483 MHz	46	50		dB	2.4G WIFI
	2500 to 2570 MHz	47	50		dB	B7 TX
	2496 to 2690 MHz	43	47		dB	B41 TX
	4900 to 5950 MHz	40	43		dB	5G WIFI

[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 Condition: 50Ω // 12 nH
TX Terminating Condition: 50Ω + 6.8 nH
RX Terminating Condition: 50Ω + 3.9 nH

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	791.25 to 820.75 MHz		1.4	1.8	dB	
Ripple ^[b]	791 to 821 MHz		0.8	1.2	dB	
VSWR_RX	791 to 821 MHz		1.7	2.0		
VSWR_ANT	791 to 821 MHz		1.7	1.9		
Attenuation	450 to 770 MHz	45	49		dB	
	832 to 862 MHz	58	61		dB	B20 TX
	880 to 915 MHz	48	52		dB	B8 TX
	1710 to 1785 MHz	50	54		dB	B3 TX
	1920 to 1980 MHz	44	47		dB	B1 TX
	2401 to 2483 MHz	46	50		dB	2.4G WIFI
	2496 to 2690 MHz	43	47		dB	B41 TX
	3300 to 4200 MHz	42	46		dB	N77
	4400 to 5000 MHz	40	44		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 Condition: 50Ω // 12 nH
TX Terminating Condition: 50Ω + 6.8 nH
RX Terminating Condition: 50Ω + 3.9 nH

Parameter	Frequency	Min.	Typ.	Max.	Unit	Note
		-30°C to +85°C				
Isolation	791 to 821 MHz	55	58		dB	
	832 to 862 MHz	57	60		dB	

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

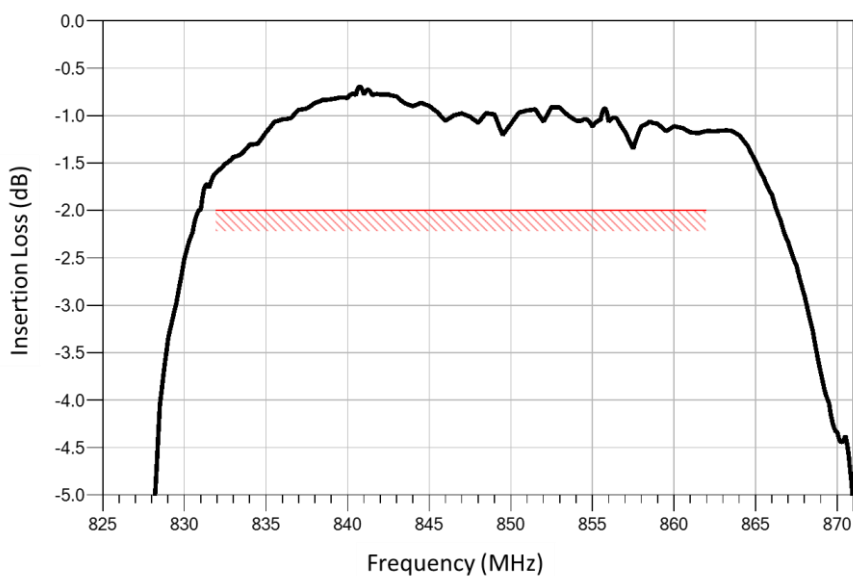


Figure 1. Passband Insertion Loss, 832 – 862 MHz

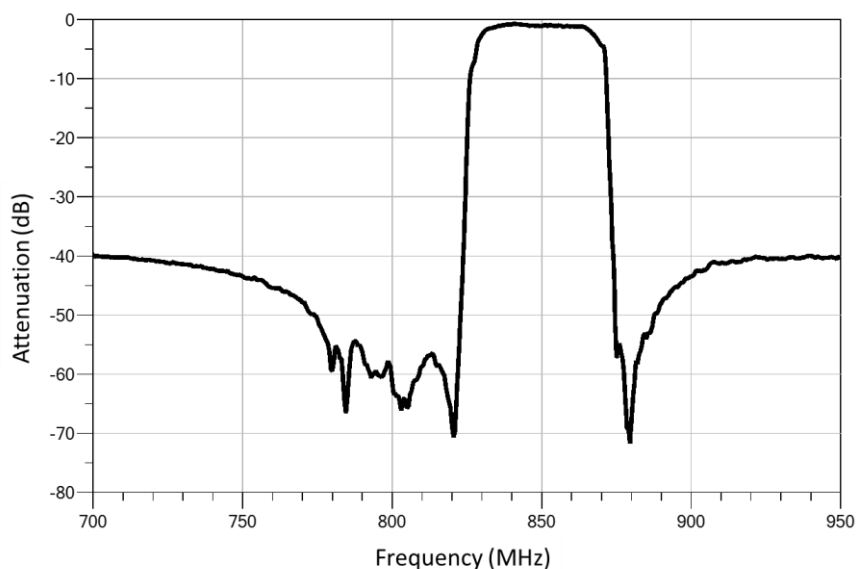


Figure 2. Narrow Band Attenuation, 700 – 950 MHz

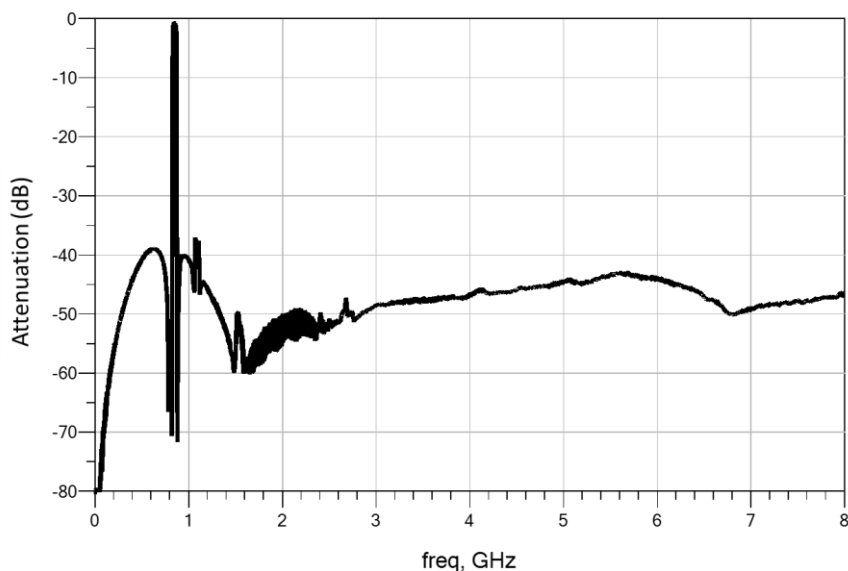


Figure 3. Wide Band Attenuation, 0 – 8000 MHz

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

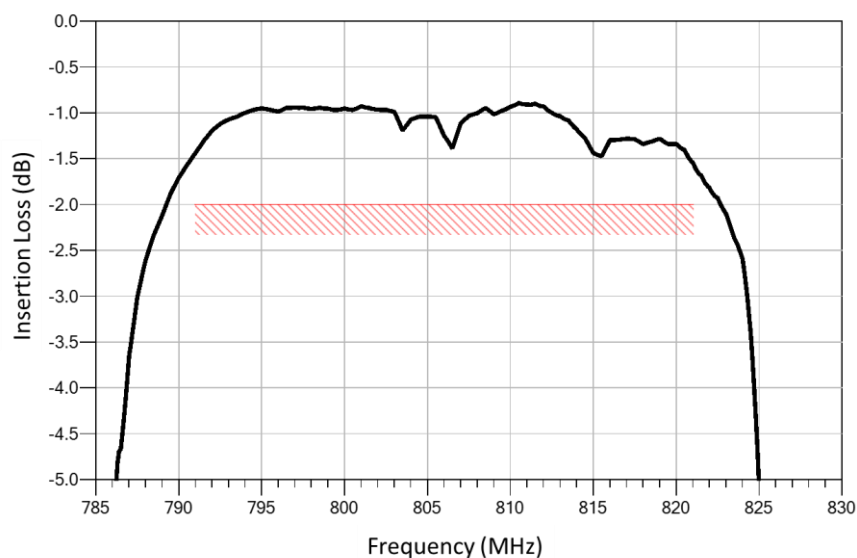


Figure 4. Passband Insertion Loss, 791 – 821 MHz

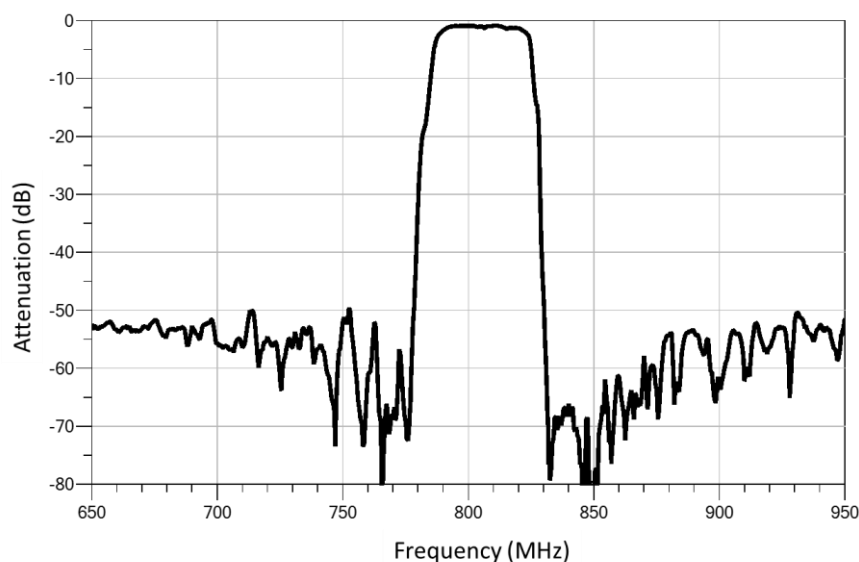


Figure 5. Narrow Band Attenuation, 650 – 950MHz

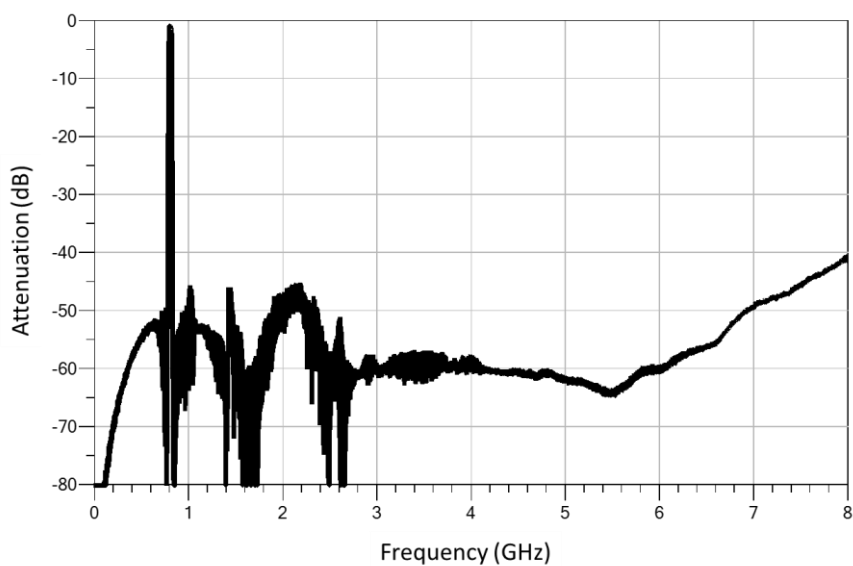
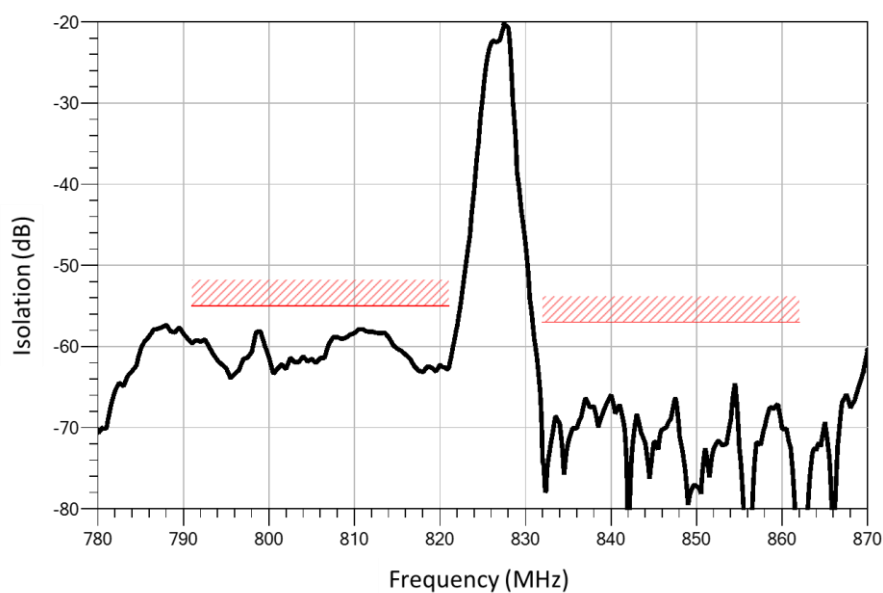
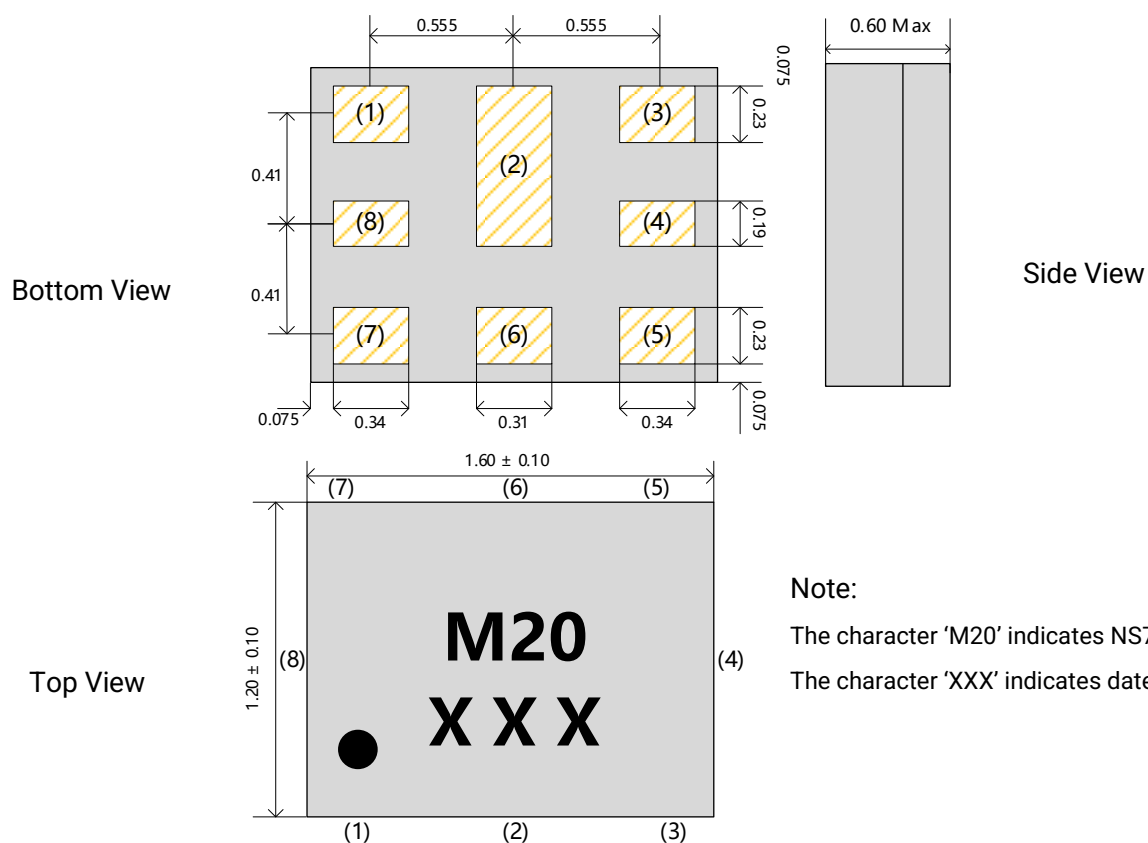


Figure 6. Wide Band Attenuation, 0– 8000 MHz

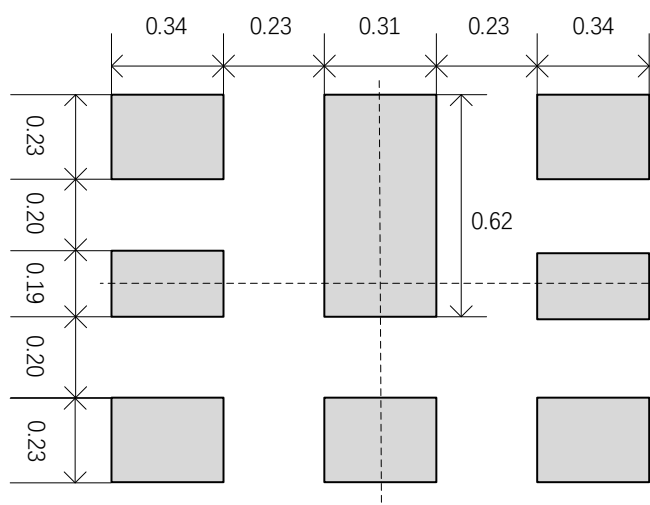
Typical Isolation (+25°C)



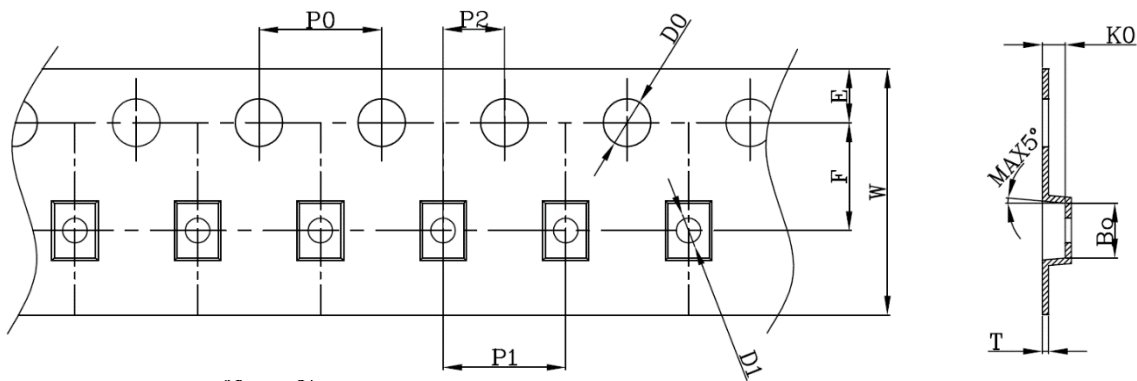
Package & Dimensions (Unit: mm)



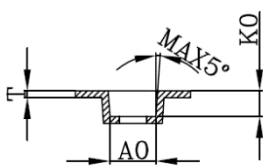
PCB Mounting Pattern (Unit: mm)



Tape and Reel Information (Unit: mm)



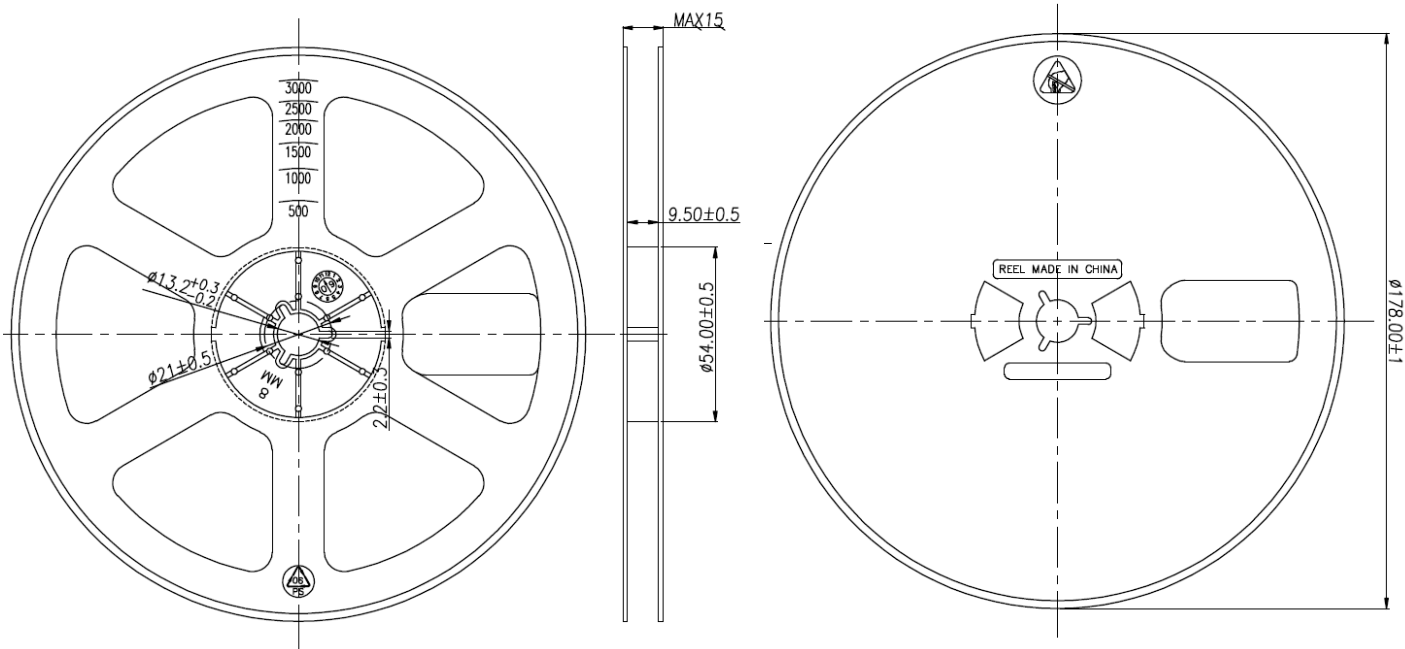
A0	B0	K0	P0	P1	P2
1.35±0.05	1.78±0.05	0.70±0.05	4.00±0.10	4.00±0.10	2.00±0.05
T	E	F	D0	D1	W
0.20±0.05	1.75±0.05	3.50±0.05	1.55±0.05	0.80±0.10	8.00±0.10



Note:

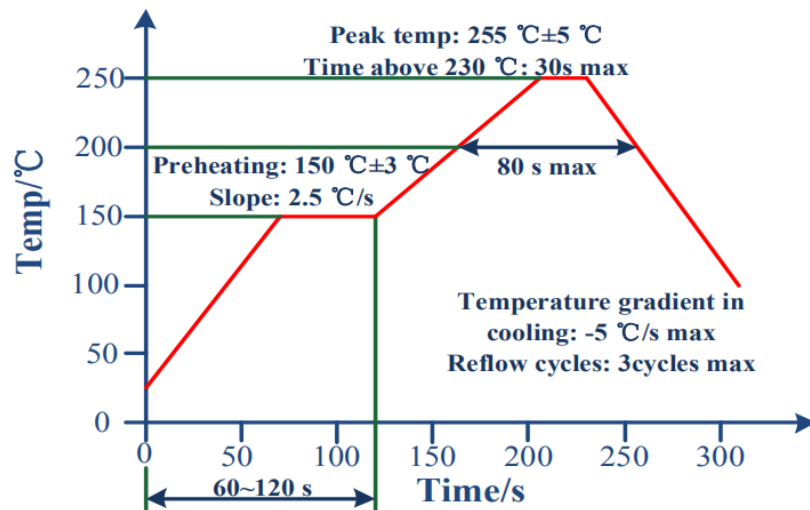
- (1) Black antistatic composite PC.
- (2) Cumulative tolerance of 10 sprocket holes is ± 0.20.
- (3) All dimensions meet EIA-481-E requirements.
- (4) The sector of 250mm straps shall not exceed 2mm.

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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