

Product Description

The NS63220XA is a high-performance, TF SAW Duplexer for B20TX+B20/28RX application with low insertion loss and high isolation.

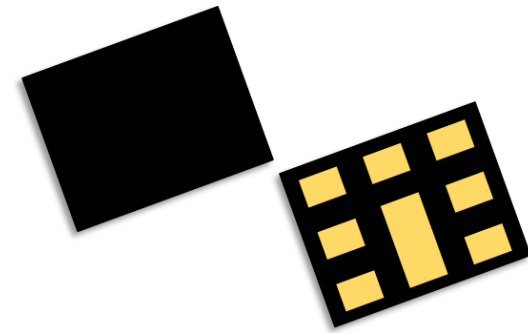
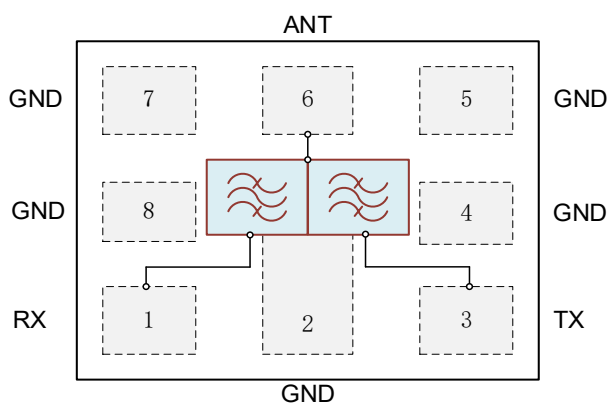
The NS63220XA uses Chip Scale Packaging (CSP) techniques to achieve the industry advanced 1.6 x 1.2 mm footprint and 0.55 mm typical height. The duplexer exhibits excellent power handling capabilities.

Applications

Cellular Phone

IOT Relevant Market

Functional Block Diagram



Product Features

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

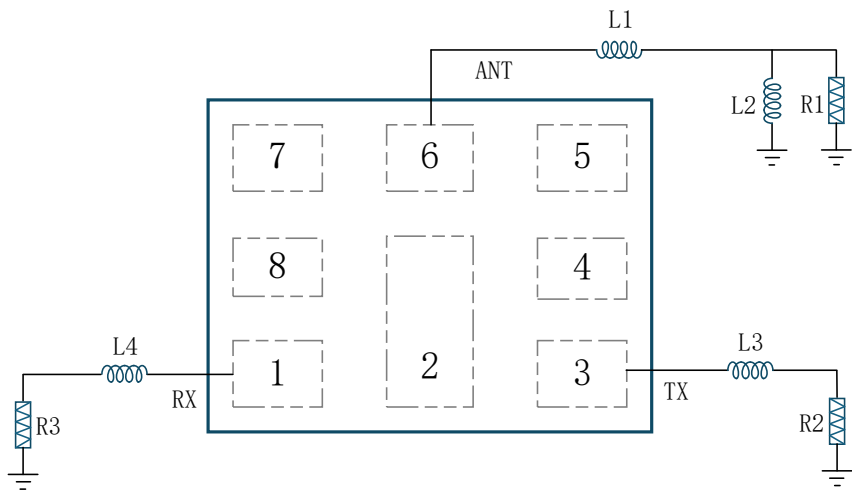
Ordering Information

Part No.	Description
NS63220XA	Packaged Part
NS63220XA_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	3 V

Testing Circuit (Top Thru View)



Top Thru View

R1	50 ohm
R2	50 ohm
R3	50 ohm
L1*	4.4 nH
L2*	13 nH
L3*	4.9 nH
L4*	10 nH
Pin1	RX
Pin3	TX
Pin6	ANT
Pin 2/4/5/7/8	GND

* Ideal Value

Electrical Specifications (TX)

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	832 to 862 MHz		1.7	2.0	dB	
Ripple ^[b]	832 to 862 MHz		1.2	1.6	dB	
VSWR_TX	832 to 862 MHz		1.4	1.7		
VSWR_ANT	832 to 862 MHz		1.4	1.7		
Attenuation	617 to 698 MHz	38	43		dB	B71
	703 to 733 MHz	40	45		dB	B28A TX
	718 to 748 MHz	42	47		dB	B28B TX
	758 to 803 MHz	50	56		dB	B28F RX
	791 to 821 MHz	50	56		dB	B20 RX
	925 to 960 MHz	43	48		dB	B8 RX
	1166 to 1187 MHz	38	43		dB	L5
	1225 to 1250 MHz	43	48		dB	L2
	1559 to 1606 MHz	46	51		dB	L1
	1664 to 1724 MHz	44	49		dB	2f0
	1710 to 2200 MHz	43	48		dB	MB TRX
	2300 to 2400 MHz	43	48		dB	B40
	2400 to 2500 MHz	44	49		dB	WLAN 2.4G
	2496 to 2586 MHz	43	48		dB	3f0
	2500 to 2570 MHz	43	48		dB	B7 TX
	2496 to 2690 MHz	43	48		dB	B41
	3328 to 3348 MHz	50	55		dB	4f0
	3300 to 4200 MHz	33	38		dB	n77
	4400 to 5950MHz	30	34		dB	n79/WLAN 5G

[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)

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	758 to 821 MHz		1.6	2.1	dB	
Ripple ^[b]	758 to 821 MHz		1.2	1.7	dB	
VSWR_RX	758 to 821 MHz		1.5	1.8		
VSWR_ANT	758 to 821 MHz		1.5	1.9		
Attenuation	617 to 703 MHz	28	31		dB	
	703 to 733 MHz	27	30		dB	B28A TX
	718 to 748 MHz	26	29		dB	B28B TX
	832 to 862 MHz	50	55		dB	B20 TX
	880 to 915 MHz	30	34		dB	B8 TX
	1710 to 2025 MHz	31	35		dB	MB TX
	2300 to 2400 MHz	43	48		dB	B40
	2401 to 2483 MHz	43	48		dB	WLAN 2.4G
	2500 to 2570 MHz	43	48		dB	B7 TX
	2496 to 2690 MHz	43	48		dB	B41 TX
	3300 to 4200 MHz	33	38		dB	n77
	4400 to 5950 MHz	30	33		dB	n79/WLAN 5G

[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)

Parameter	Frequency	Min.	Typ.	Max.	Unit	Note
		-30°C to +85°C				
Isolation	758 to 821 MHz	52	56		dB	RX
	832 to 862 MHz	55	59		dB	TX

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

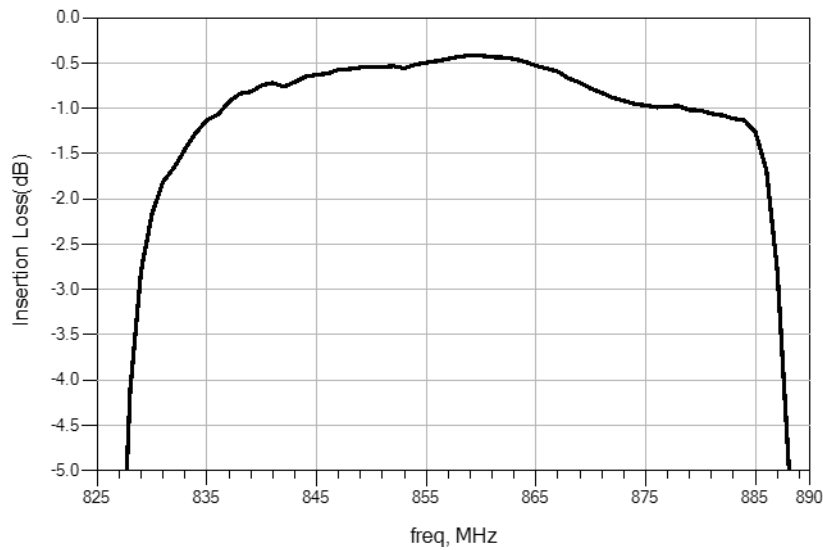


Figure 1. Passband Insertion Loss, 832 – 862 MHz

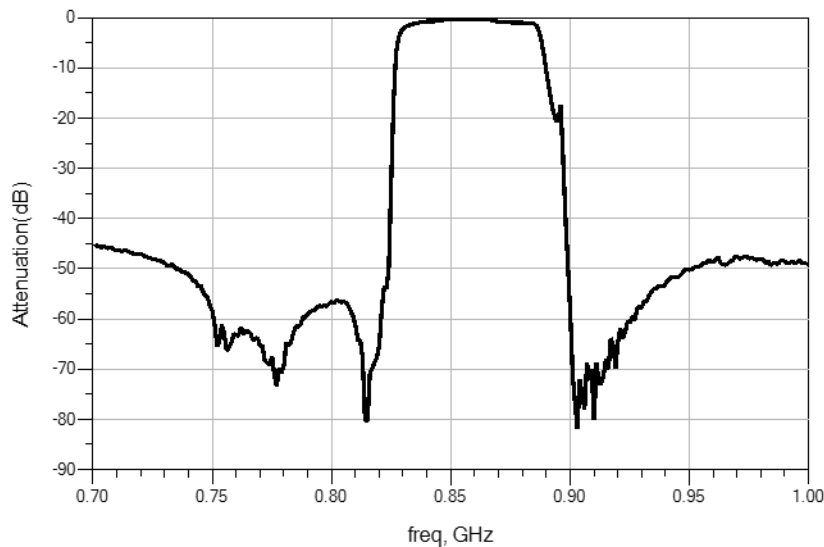


Figure 2. Narrow Band Attenuation, 700 – 1000 MHz

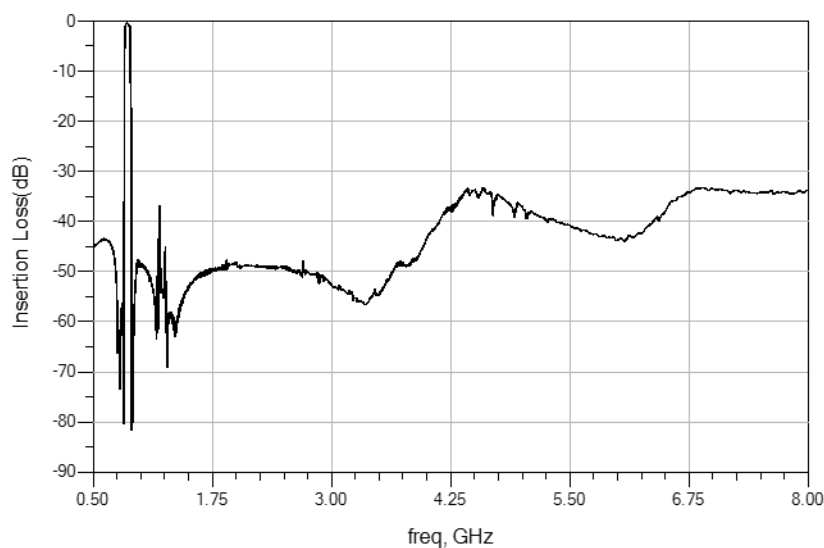


Figure 3. Wide Band Attenuation, 500 – 8000 MHz

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

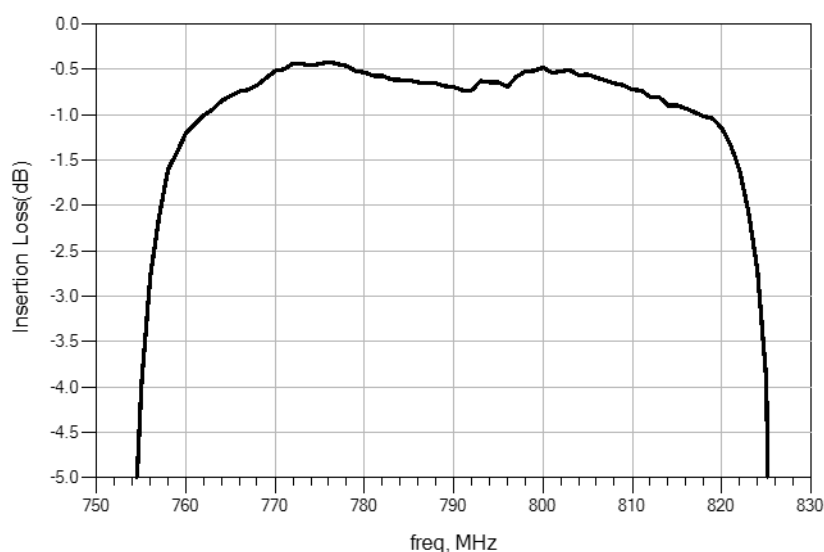


Figure 4. Passband Insertion Loss, 758 – 821 MHz

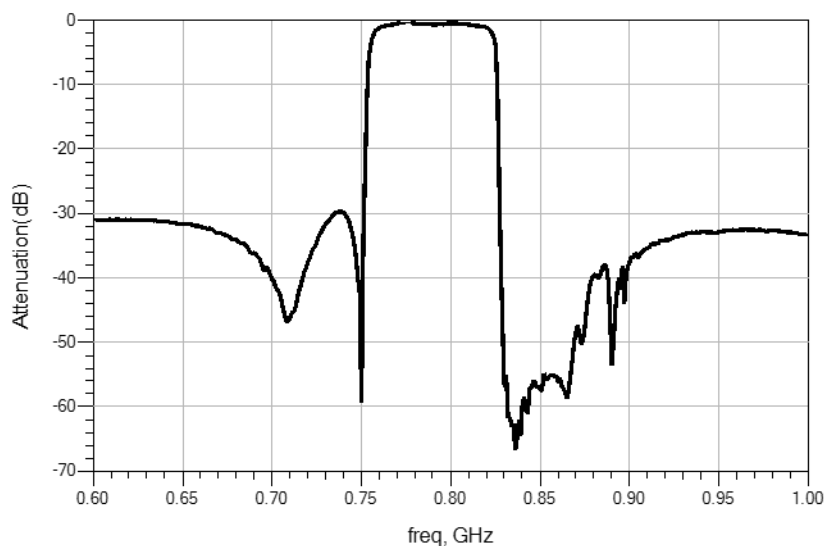


Figure 5. Narrow Band Attenuation, 650 – 950MHz

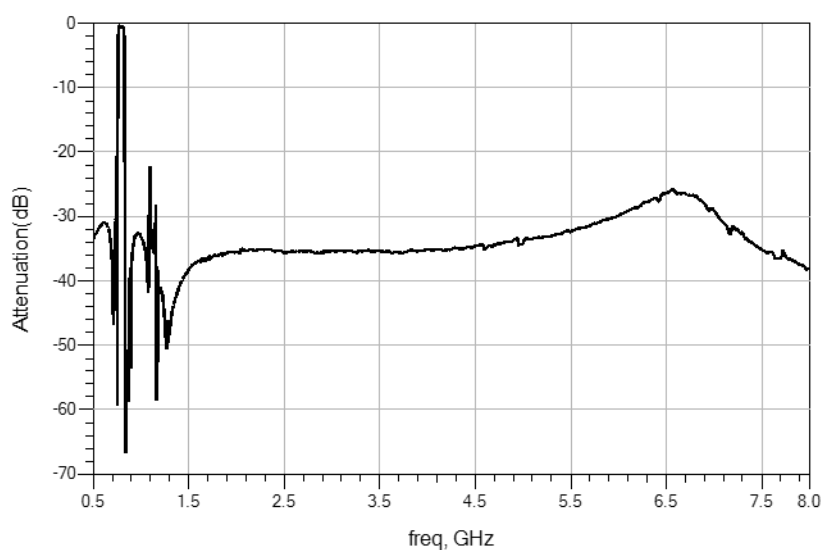
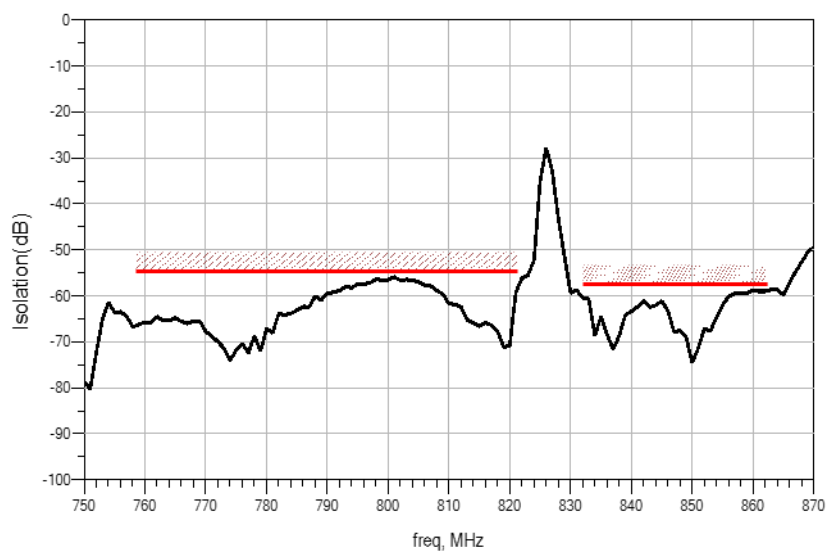
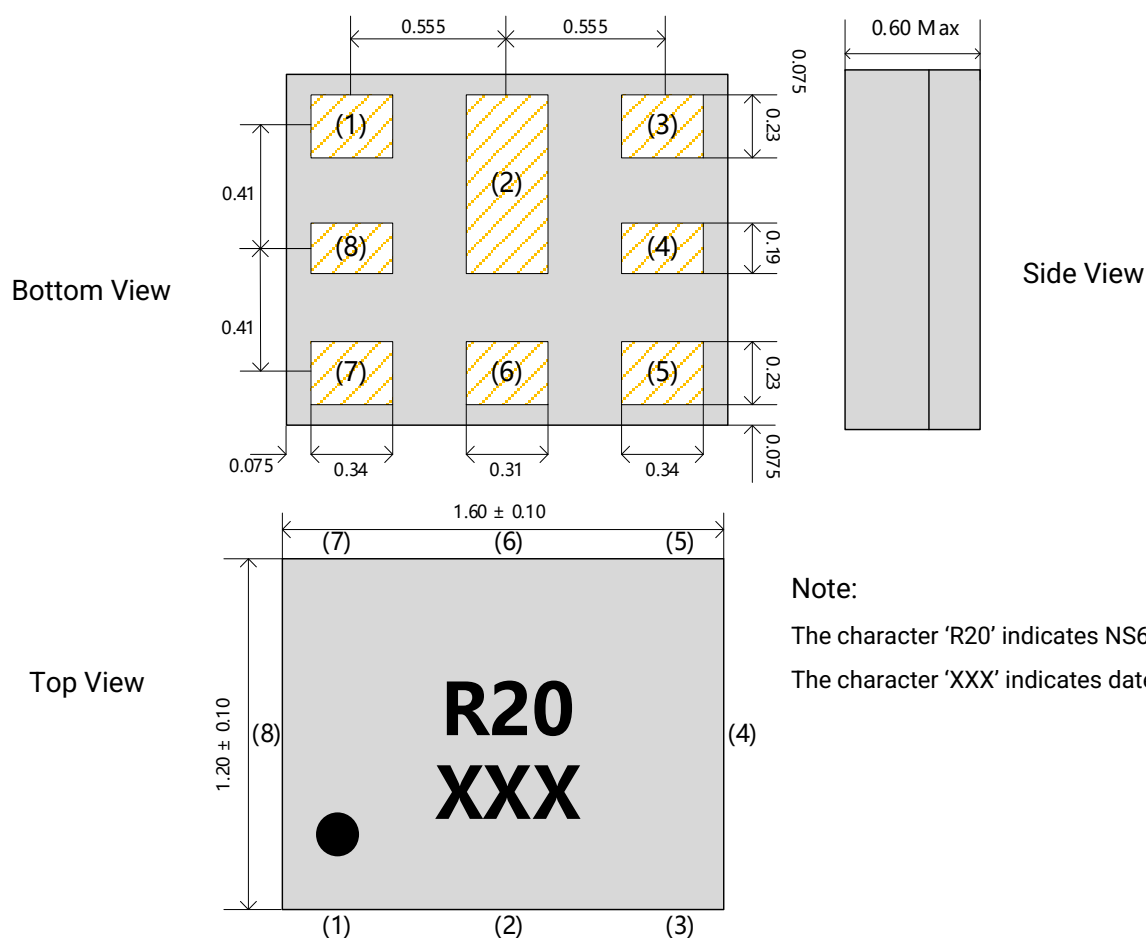


Figure 6. Wide Band Attenuation, 450 – 8000 MHz

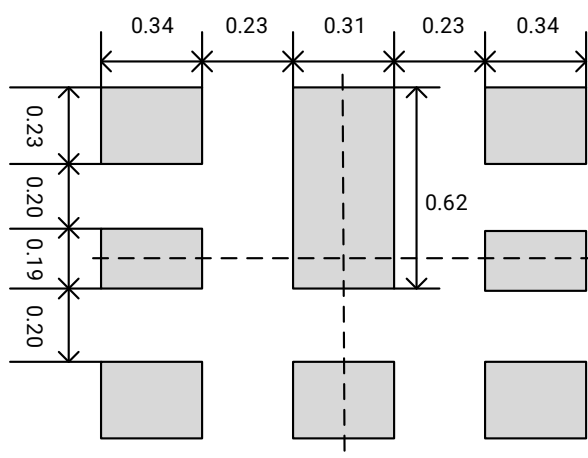
Typical Isolation(+25°C)



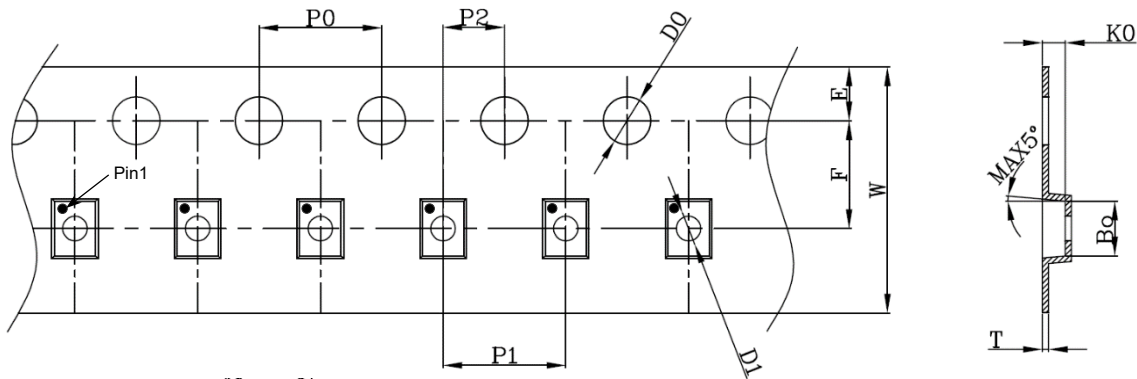
Package & Dimensions (Unit: mm)



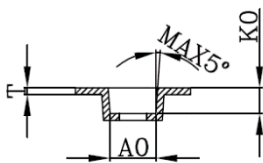
PCB Mounting Pattern (Unit: mm)



Tape and Reel Information (Unit: mm)



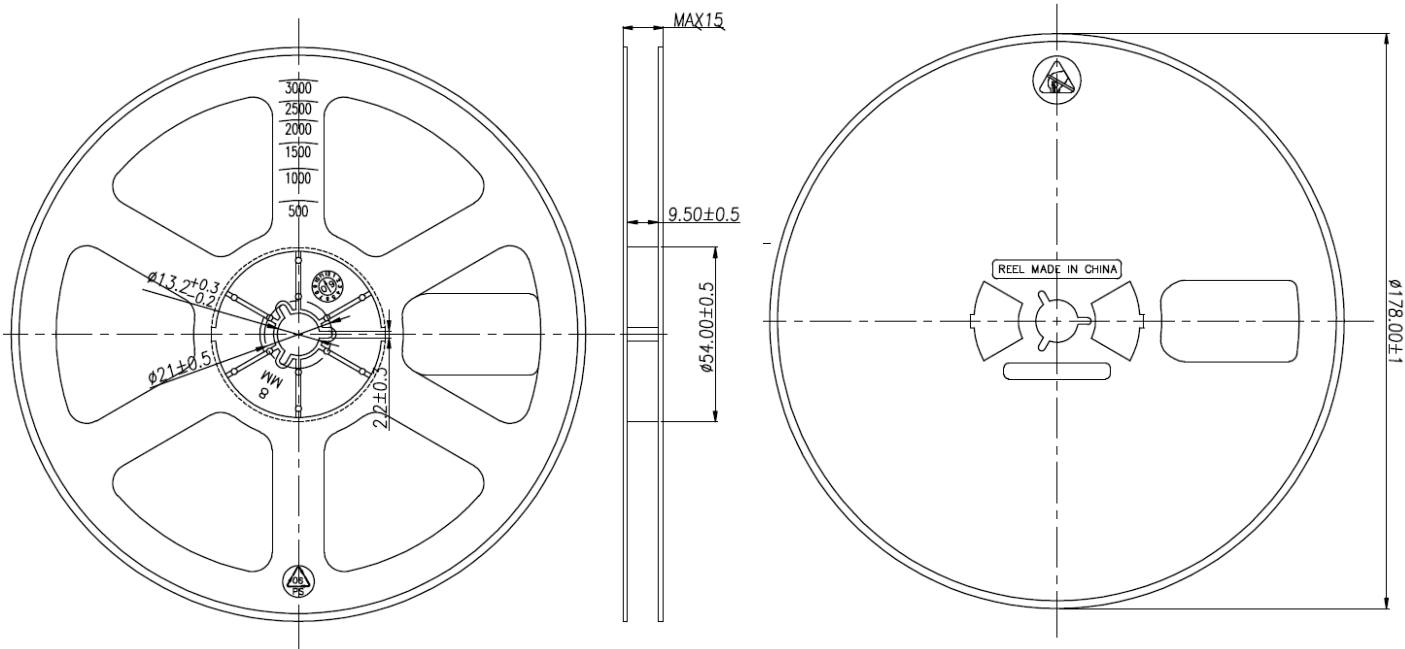
A0	B0	K0	P0	P1	P2
1.35±0.05	1.78±0.05	0.70±0.05	4.00±0.10	4.00±0.10	2.00±0.05
T	E	F	D0	D1	W
0.20±0.05	1.75±0.05	3.50±0.05	1.55±0.05	0.80±0.10	8.00±0.10



Note:

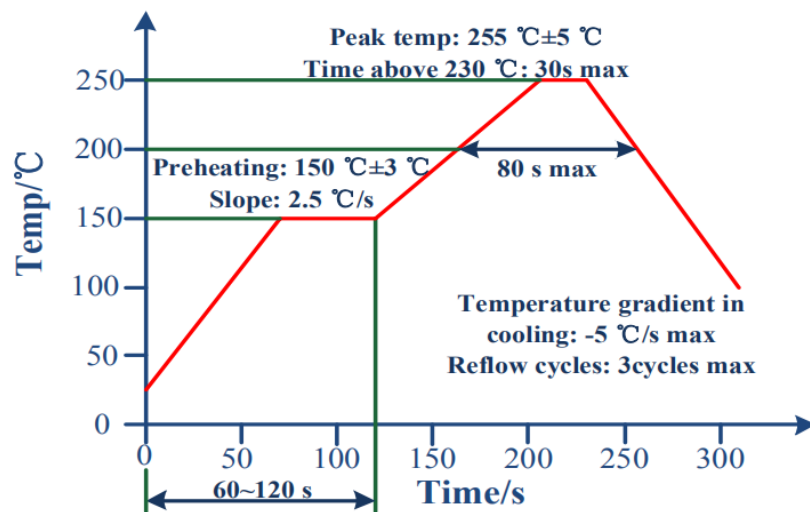
- (1) Black antistatic composite PC.
- (2) Cumulative tolerance of 10 sprocket holes is ± 0.20 .
- (3) All dimensions meet EIA-481-E requirements.
- (4) The sector of 250mm straps shall not exceed 2mm.

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.
2. Customers need to know all NEWSONIC products are for consumer market (Mobile-phone, PC-tablet, AP router or other general product). NEWSONIC products are not warranted or authorized for use as critical components in aircraft, plane, medical, life-saving and other high-reliability application environment which can cause severe results such as death.
3. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.
4. Not to be used, duplicated, reproduced, modified, republished and revealed in whole or in part to others without the express written permission of NEWSONIC.
5. NEWSONIC reject any liability or product warranty for engineering samples, so please don't use NEWSONIC engineering samples for mass-production.