

Product Description

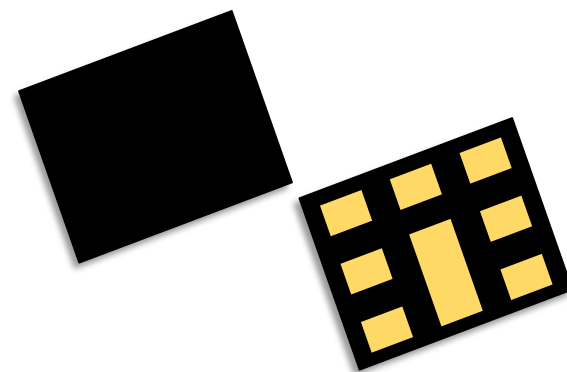
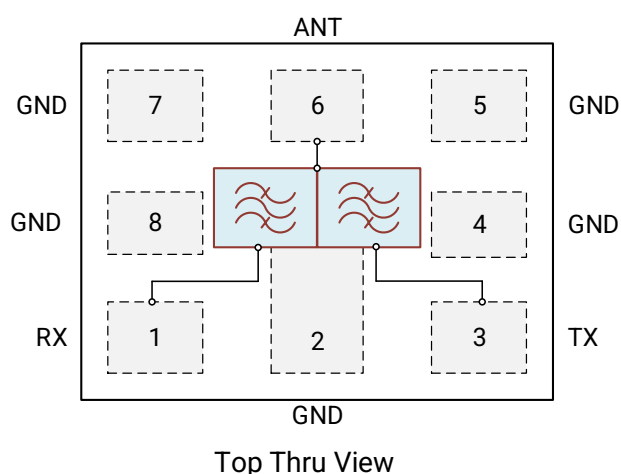
The NS83211B is a high performance Surface Acoustic Wave (SAW) Duplexer for B11 application with low insertion loss and high isolation.

The NS83211B 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

- Band11 Duplexer Application

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

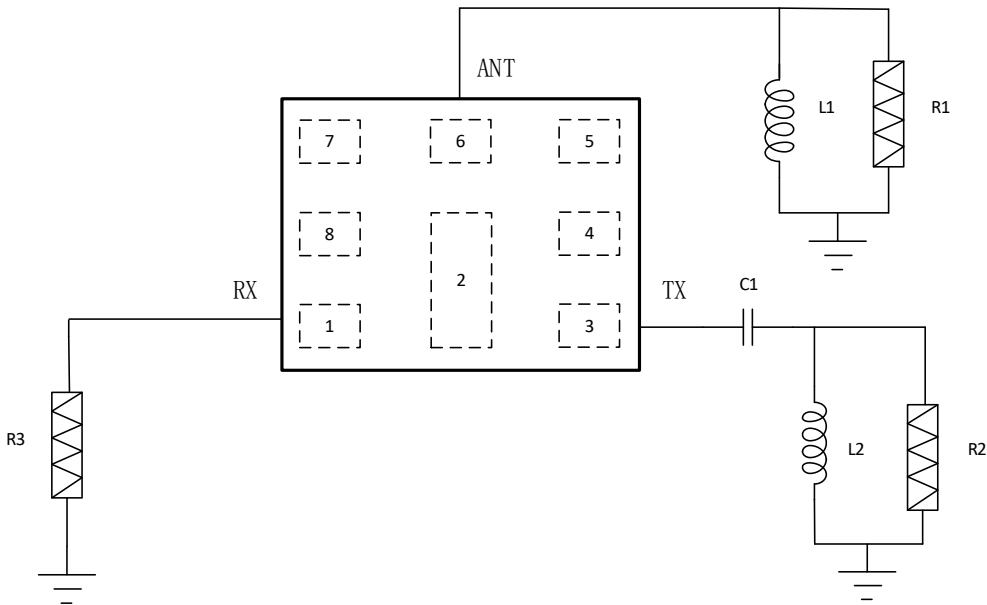
Ordering Information

Part No.	Description
NS83211B	Packaged Part
NS83211B_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*	8.0 nH
L2*	10.0 nH
C1*	4.0 pF
Pin1	RX
Pin3	TX
Pin6	ANT
Pin 2/4/5/7/8	GND

*Ideal Value

Electrical Specifications (TX)

Temperature Range for Specification: Tc = -30 ~ +85 °C

ANT Terminating Condition: 50Ω // 8.0 nH

TX Terminating Condition: 50Ω// 10.0 nH + 4.0 pF

RX Terminating Condition: 50Ω

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	1427.9 to 1447.9 MHz		1.8	2.0	dB	
Ripple ^[b]	1427.9 to 1447.9 MHz		0.6	0.9	dB	
VSWR_TX	1427.9 to 1447.9 MHz		1.6	1.7		
VSWR_ANT	1427.9 to 1447.9 MHz		1.8	1.9		
Attenuation	699 to 960 MHz	35	38		dB	LB
	1166 to 1250 MHz	36	39		dB	
	1475.9 to 1495.9 MHz	50	55		dB	
	1559 to 1606 MHz	37	40		dB	
	1710 to 1785 MHz	37	41		dB	B3 TX
	1805 to 1880 MHz	39	42		dB	B3 RX
	1920 to 1980 MHz	40	43		dB	B1 TX
	2110 to 2170 MHz	40	44		dB	B1 RX
	2300 to 2400 MHz	43	46		dB	B40
	2400 to 2500 MHz	43	46		dB	WIFI 2.4G
	2496 to 2690 MHz	44	47		dB	B41
	3300 to 4200 MHz	29	32		dB	N77
	4400 to 5000 MHz	18	21		dB	N79
	4900 to 5950 MHz	17	20		dB	WIFI 5G
	5925 to 7125 MHz	18	21		dB	WIFI 6G

[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)

Temperature Range for Specification: Tc = -30 ~ +85 °C

ANT Terminating Condition: 50Ω // 8.0 nH

TX Terminating Condition: 50Ω// 10.0 nH + 4.0 pF

RX Terminating Condition: 50Ω

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	1475.9 to 1495.9 MHz		2.2	2.4	dB	
Ripple ^[b]	1475.9 to 1495.9 MHz		0.3	0.6	dB	
VSWR_RX	1475.9 to 1495.9 MHz		1.5	1.6		
VSWR_ANT	1475.9 to 1495.9 MHz		1.4	1.5		
Attenuation	699 to 960 MHz	39	42		dB	
	1427.9 to 1447.9 MHz	50	55			
	1710 to 1785 MHz	41	44		dB	
	1920 to 1980 MHz	42	45		dB	
	2400 to 2500 MHz	43	46		dB	
	2496 to 2690 MHz	42	46		dB	
	3300 to 4200 MHz	35	38		dB	
	4400 to 5000 MHz	29	31		dB	
	4900 to 5950 MHz	29	32		dB	
	5925 to 7125 MHz	30	33		dB	

[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)

Temperature Range for Specification: Tc = -30 ~ +85 °C

ANT Terminating Condition: 50Ω // 8.0 nH

TX Terminating Condition: 50Ω// 10.0 nH + 4.0 pF

RX Terminating Condition: 50Ω

Parameter	Frequency	Min.	Typ.	Max.	Unit	Note
		-30°C to +85°C				
Isolation	1427.9 to 1447.9 MHz	54	56		dB	
	1475.9 to 1495.9 MHz	53	55		dB	

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

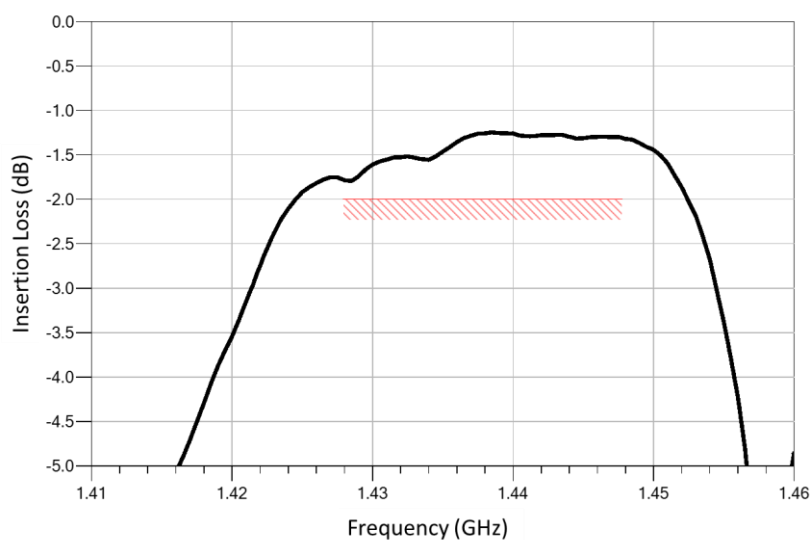


Figure 1. Passband Insertion Loss, 1427.9 – 1447.9 MHz

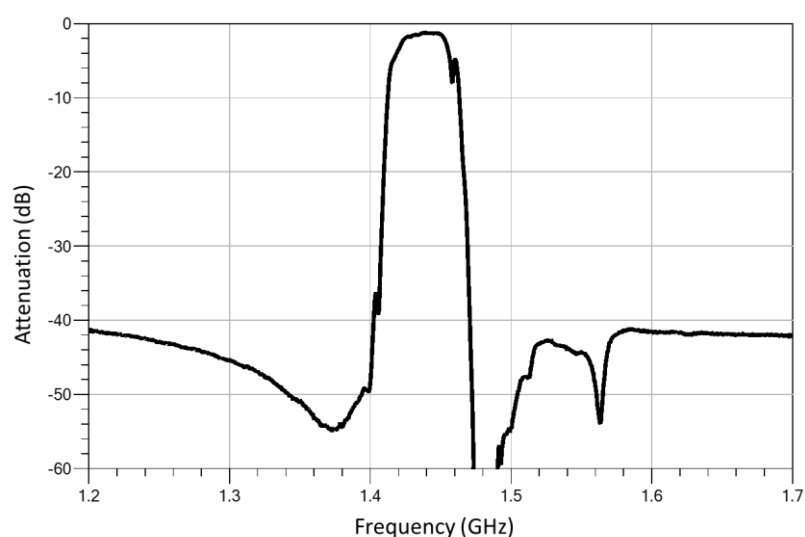


Figure 2. Narrow Band Attenuation, 1200 – 1700 MHz

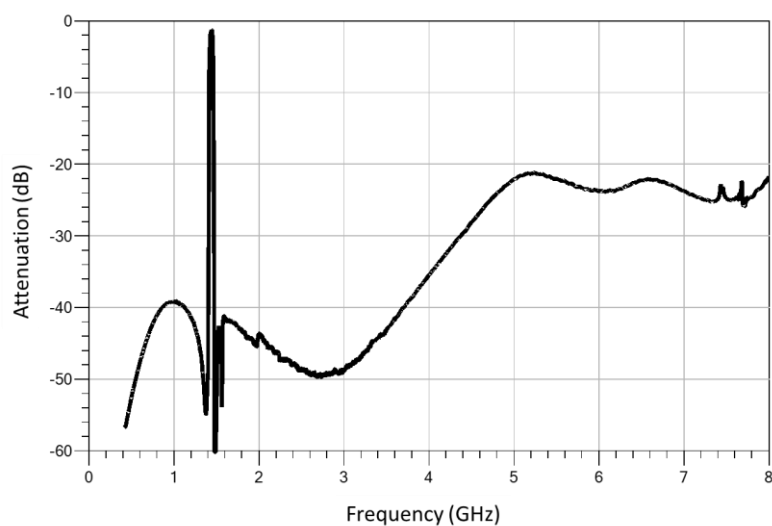


Figure 3. Wide Band Attenuation, 450 – 8000 MHz

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

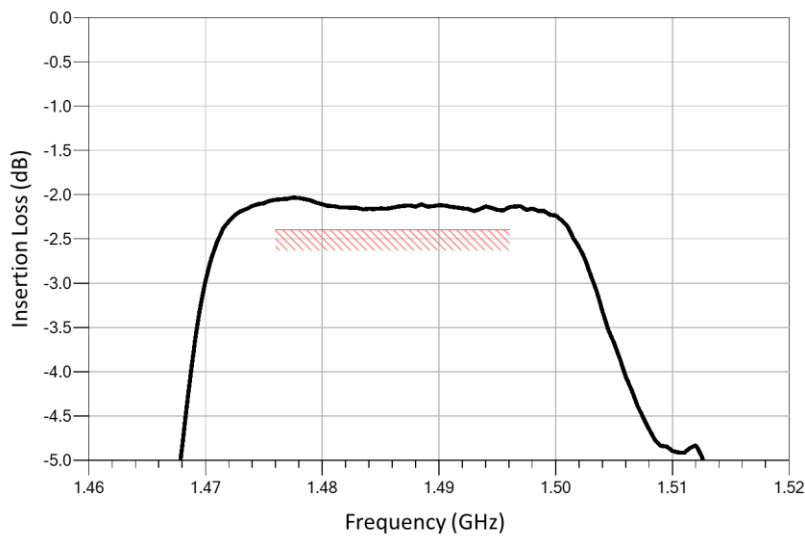


Figure 4. Passband Insertion Loss, 1475.9 – 1495.9 MHz

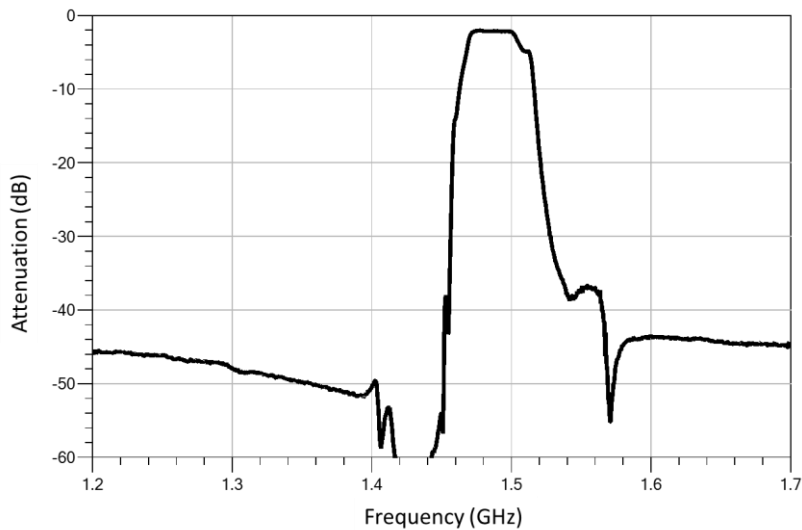


Figure 5. Narrow Band Attenuation, 1200 – 1700MHz

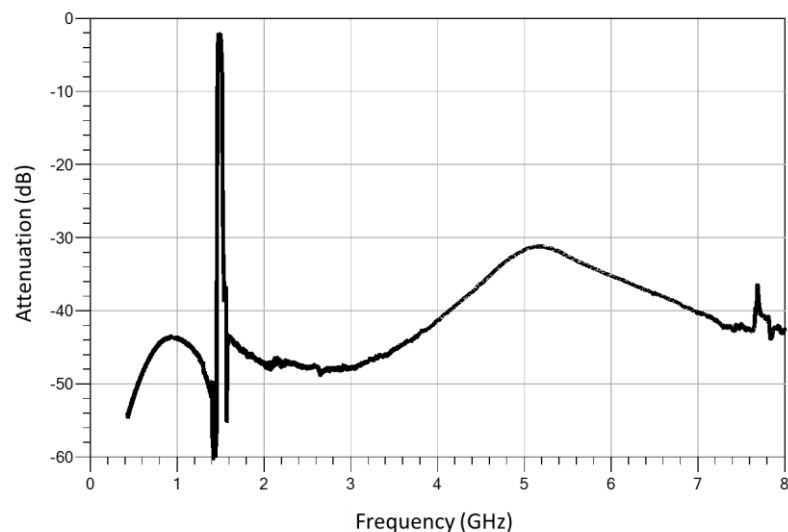
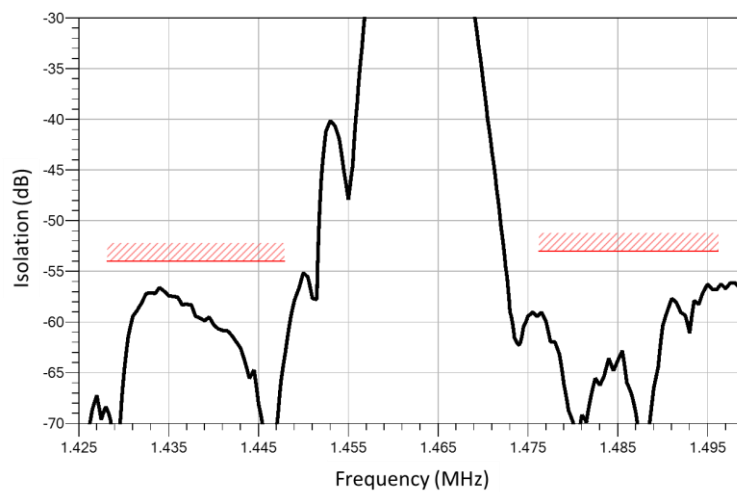
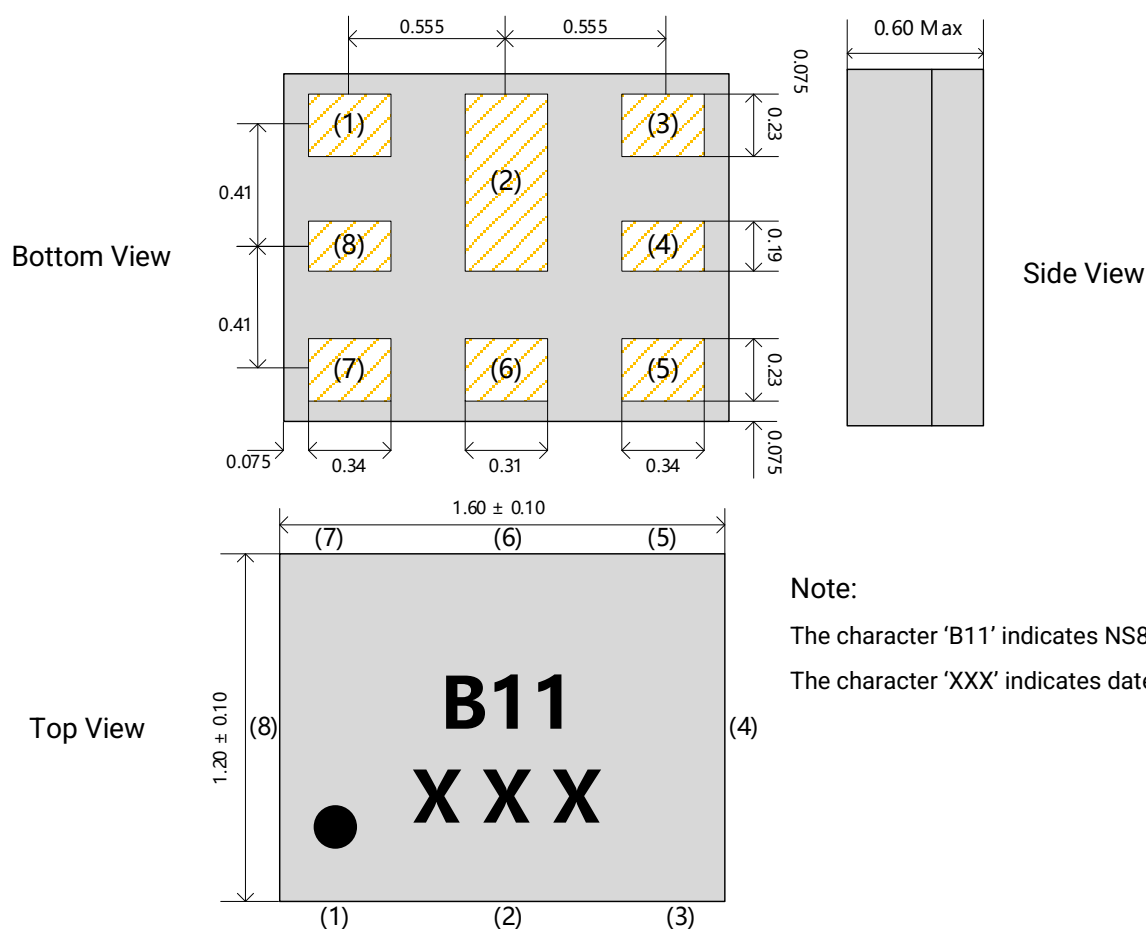


Figure 6. Wide Band Attenuation, 450 – 8000 MHz

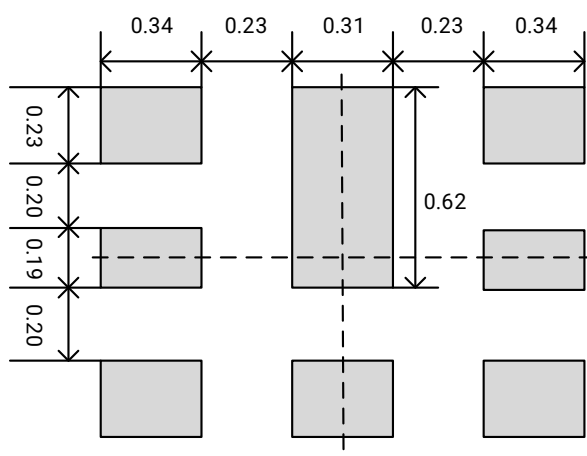
Typical Isolation (+25°C)



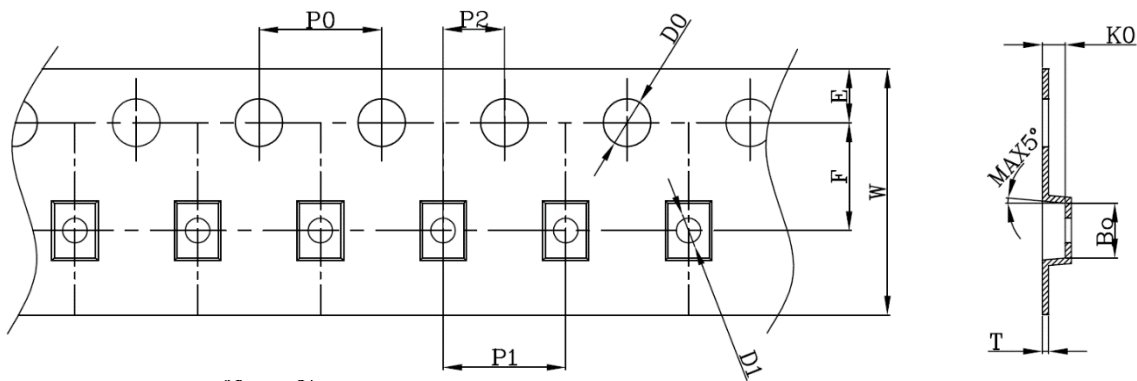
Package & Dimensions (Unit: mm)



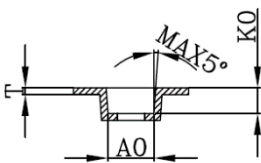
PCB Mounting Pattern (Unit: mm)



Tape and Reel Information (Unit: mm)



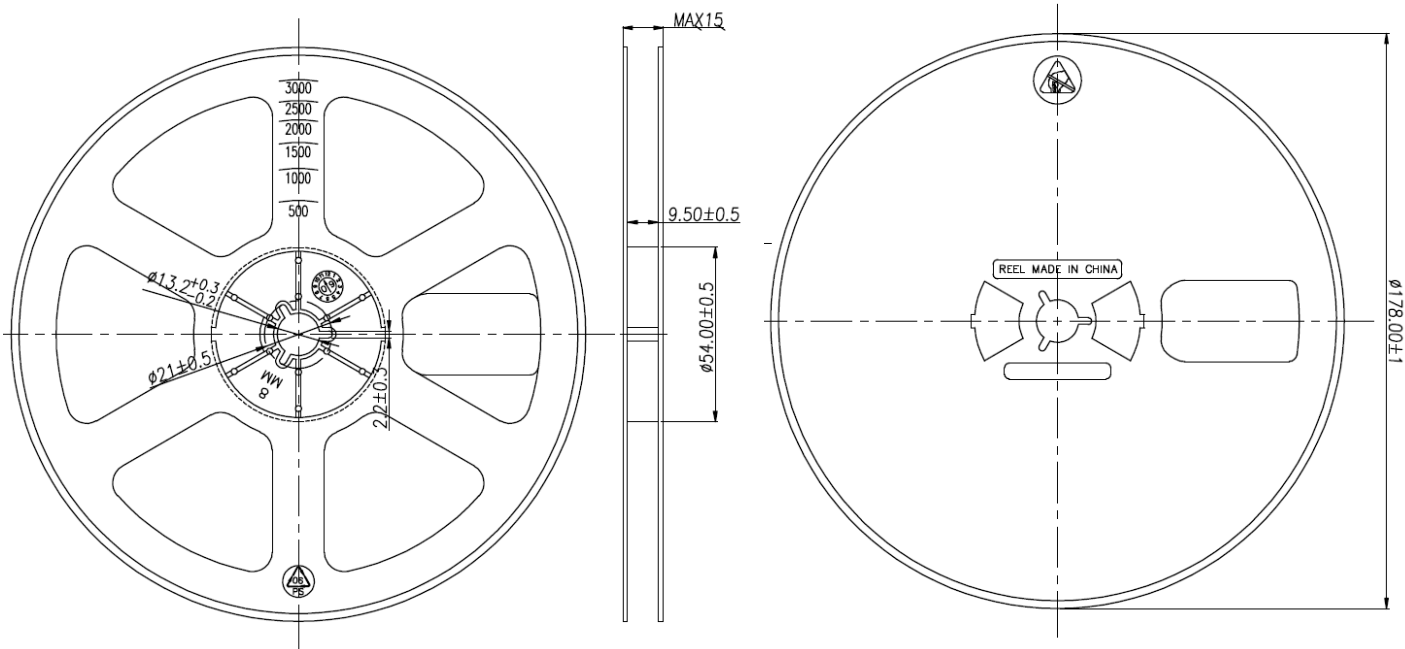
A0	B0	K0	P0	P1	P2
1.35±0.05	1.78±0.05	0.70±0.05	4.00±0.10	4.00±0.10	2.00±0.05
T	E	F	D0	D1	W
0.20±0.05	1.75±0.05	3.50±0.05	1.55±0.05	0.80±0.10	8.00±0.10



Note:

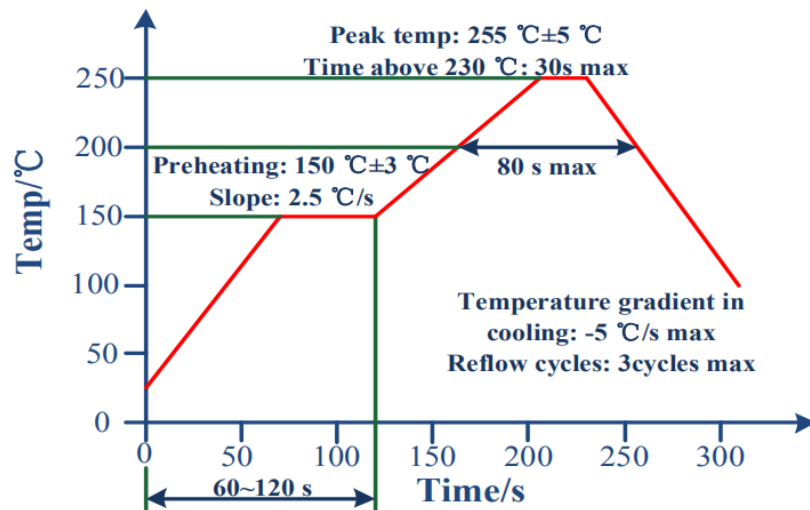
- (1) Black antistatic composite PC.
- (2) Cumulative tolerance of 10 sprocket holes is ± 0.20.
- (3) All dimensions meet EIA-481-E requirements.
- (4) The sector of 250mm straps shall not exceed 2mm.

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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