

Product Description

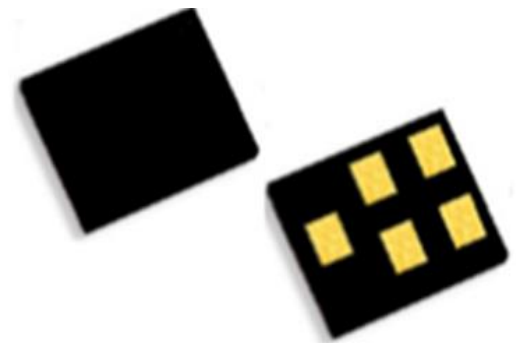
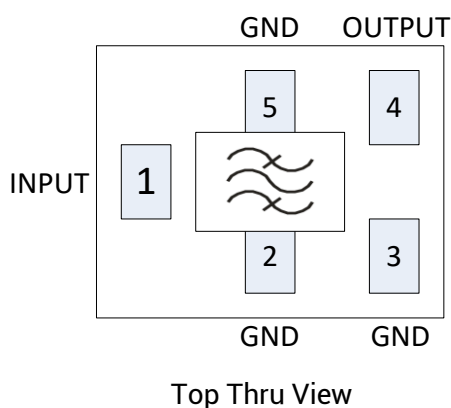
The NS7228XB is a high-performance Surface Acoustic Resonator (SAW) based band-pass filter with Newsonic's unique **α -SAW** technology to realize both low insertion loss in pass band, and high rejection level at B20 RX and n28F RX band.

The NS7228XB uses Chip Scale Packaging (CSP) techniques to achieve the industrial standard 1.4 x 1.1 mm footprint, and 0.55 mm typical height. The filter exhibits excellent reliability capabilities.

Applications

- B20 & n28F RX Application

Functional Block Diagram



Product Features

- Low Insertion Loss
- **α -SAW** Technology
- Standard Size: 1.4 x 1.1 mm
- Operating Temperature: -30 to +85°C
- Single Ended Operation
- RoHS2.0 Compliant, Halogen Free
Pb-free Module Package, MSL3

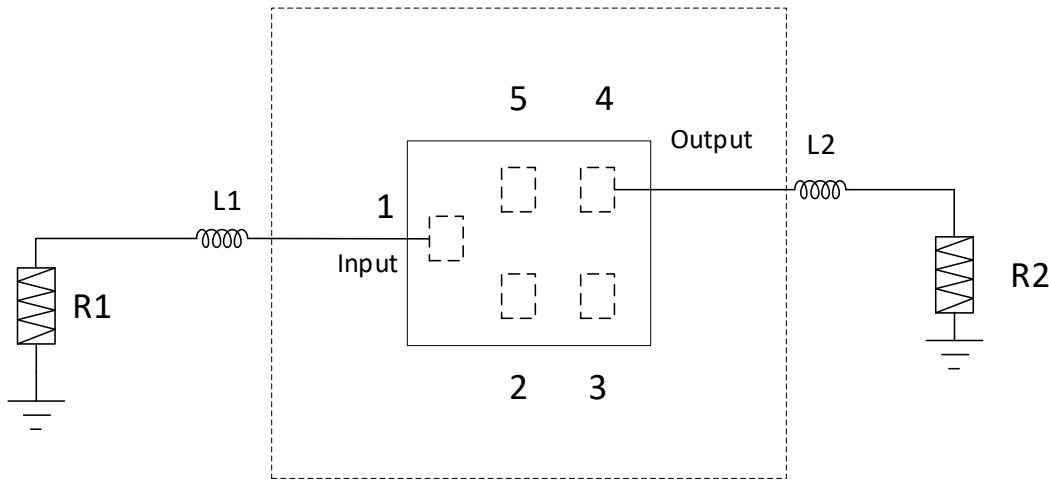
Ordering Information

Part No.	Description
NS7228XB	Packaged Part
NS7228XB_EVB	Evaluation Board

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature	-40°C ~ +85°C
Operating Temperature	-30°C ~ +85°C
RF Input Power	+15dBm, +50°C for 5000 hours
ESD Voltage	300 V (max.) Human Body Model 1000 V (max.) Charged Device Model 150 V (max.) Machine Model
Maximum DC Voltage	3V

Testing Circuit (Top Thru View)



Top Thru View

R1	50 ohm
R2	50 ohm
L1*	3.0 nH
L2*	7.5 nH
Pin1	Input
Pin4	Output
Pin 2/3/5	GND

* Ideal Value

Electrical Specifications

Temperature range for specification: $T_c = -30 \sim +85\text{ }^{\circ}\text{C}$

INPUT Terminating impedance: $Z_{IN} = 50\text{ ohm} + 3.0\text{ nH}$

OUTPUT Terminating impedance: $Z_{out} = 50\text{ ohm} + 7.5\text{ nH}$

Parameter	Frequency	Min.	Typ. ^[a]	Max.	Unit	Note
		-30°C to +85°C				
Insertion Loss	758 to 821 MHz		1.7	2.3	dB	
Ripple ^[b]	758 to 821 MHz		1.4	2.0	dB	
VSWR_INPUT	758 to 821 MHz		1.4	1.5		
VSWR_OUTPUT	758 to 821 MHz		1.5	1.7		
Attenuation	450 to 703 MHz	30	33		dB	
	705.5 to 730.5 MHz	52	58		dB _{int}	B28A TX, Any 4.5MHz
	720.5 to 745.5 MHz	30	53		dB _{int}	B28B TX, Any 4.5MHz
	832 to 862 MHz	33	45		dB	B20 TX
	880 to 915 MHz	32	35		dB	B8 TX
	1710 to 1785 MHz	40	43		dB	B3 TX
	1805 to 1880 MHz	44	47		dB	B3 RX
	1920 to 1980 MHz	47	50		dB	B1 TX
	2300 to 2400 MHz	48	52		dB	B40 TX
	2496 to 2690 MHz	50	54		dB	B41 TX
	3300 to 4200 MHz	50	53		dB	N77
	4400 to 5000 MHz	51	54		dB	N79
	4900 to 5950 MHz	51	55		dB	WIFI 5G
	5925 to 7125 MHz	39	42		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.

Typical Transmission Coefficient ($T_c=+25^{\circ}\text{C}$)

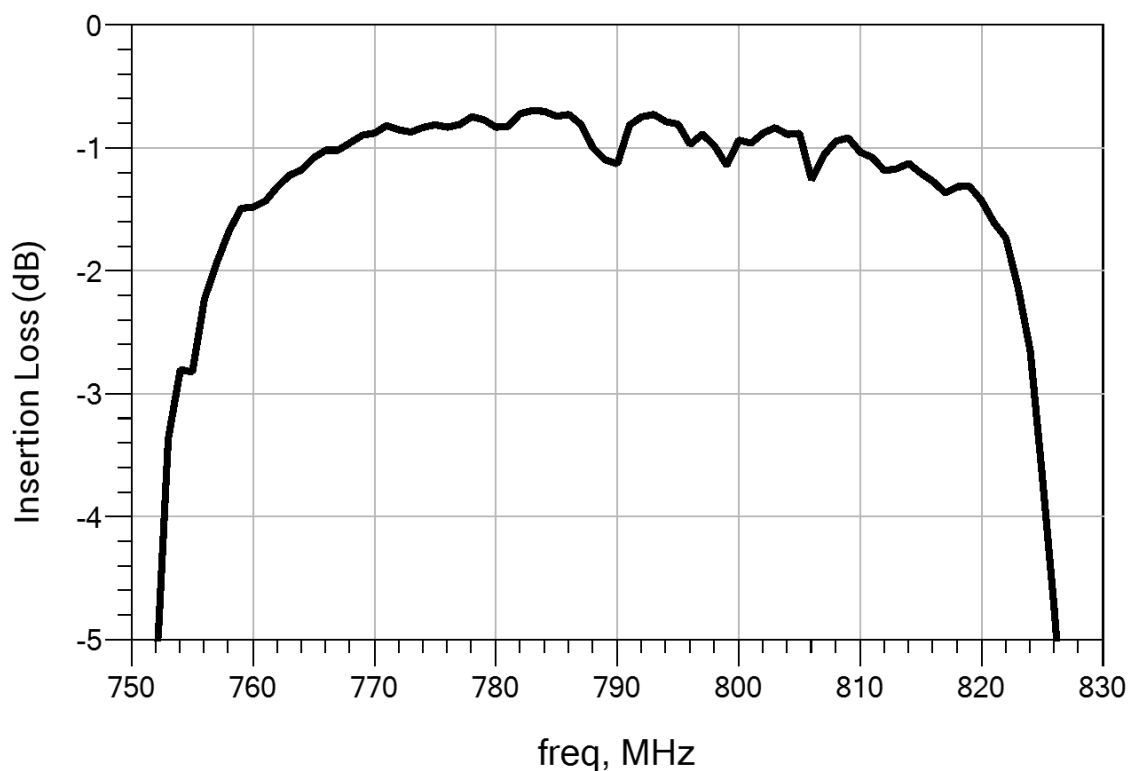


Figure 1. Passband Insertion Loss, 758 – 821 MHz

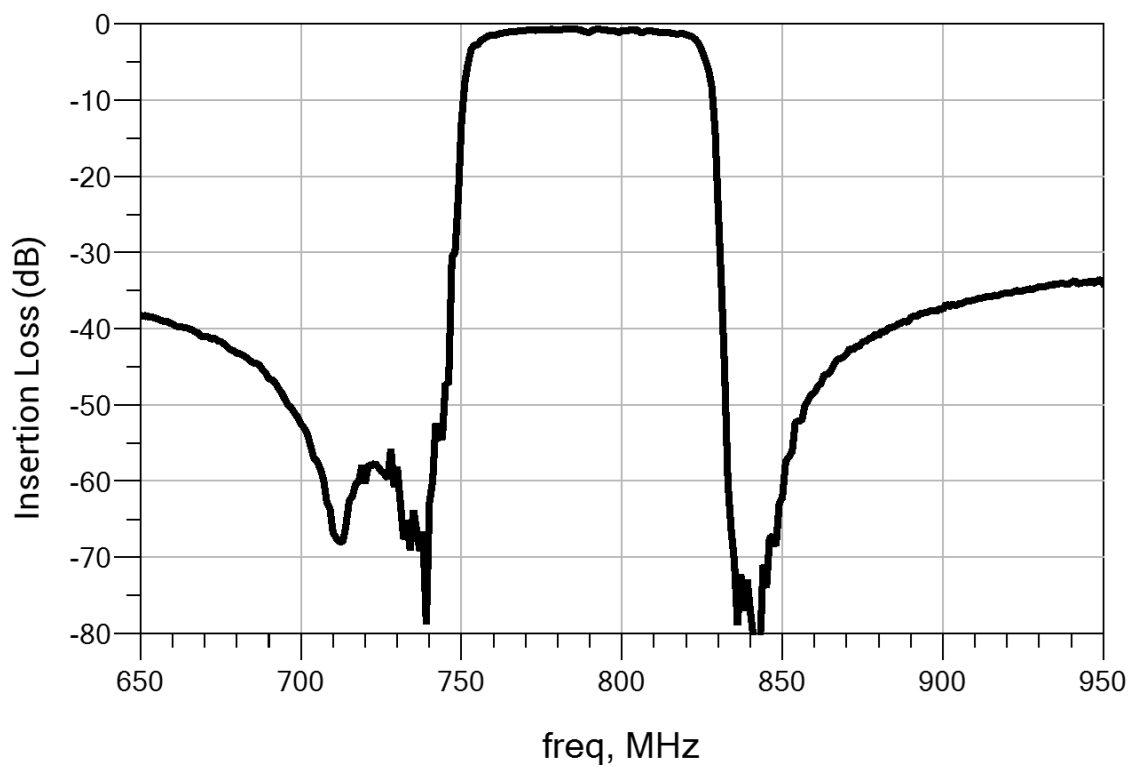


Figure 2. Narrow Band Attenuation, 650 – 950 MHz

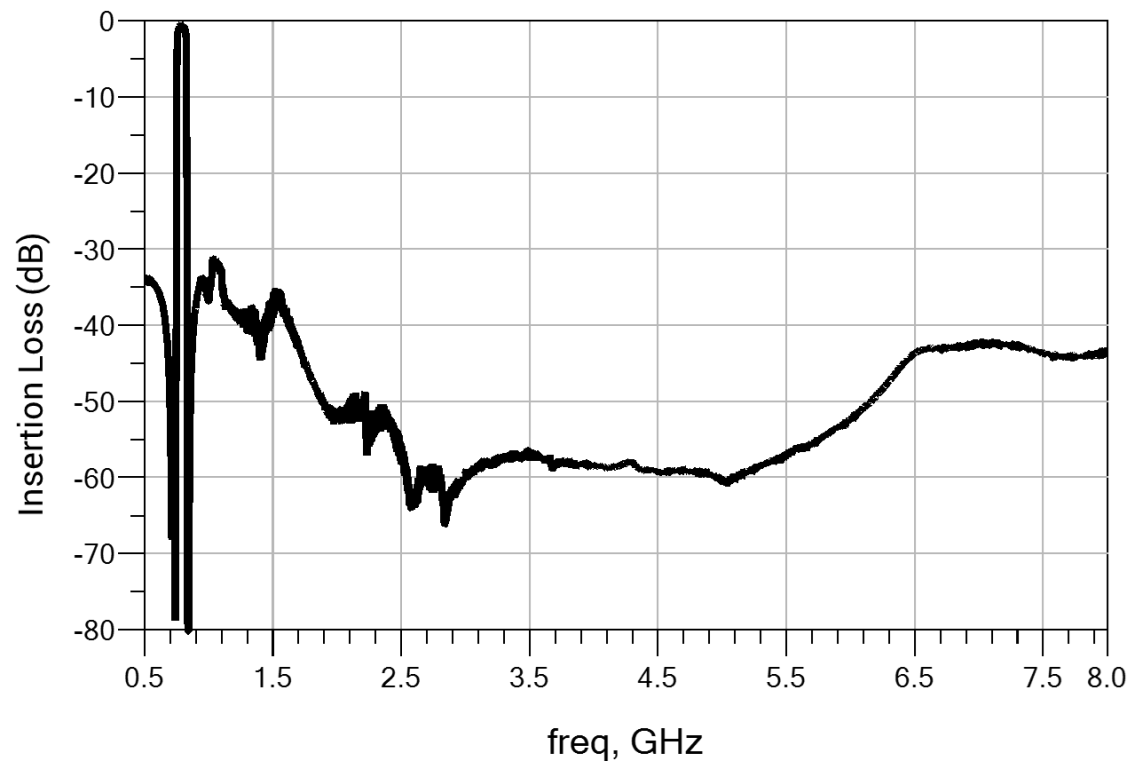
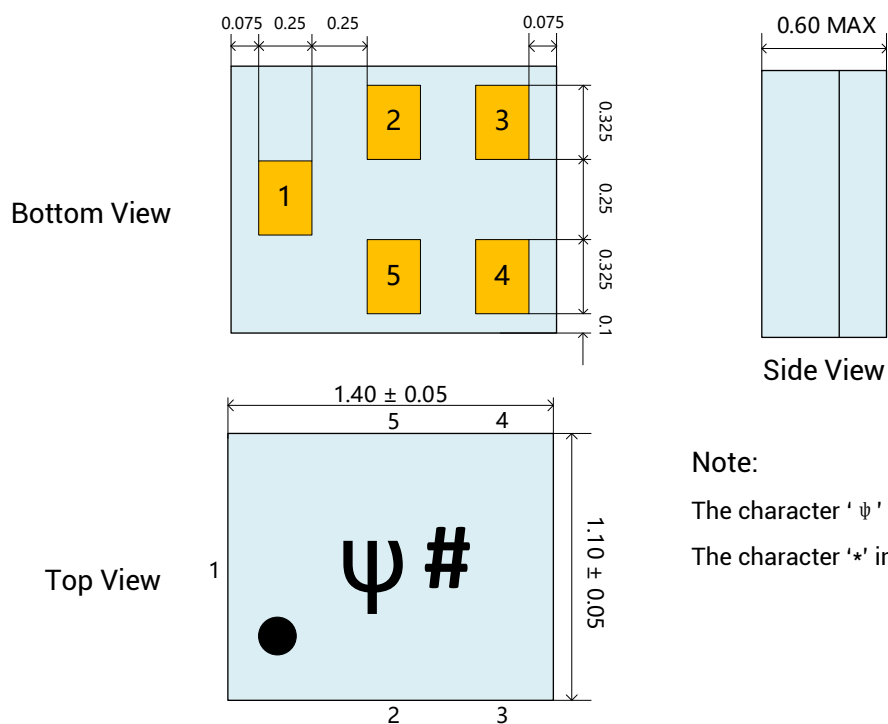
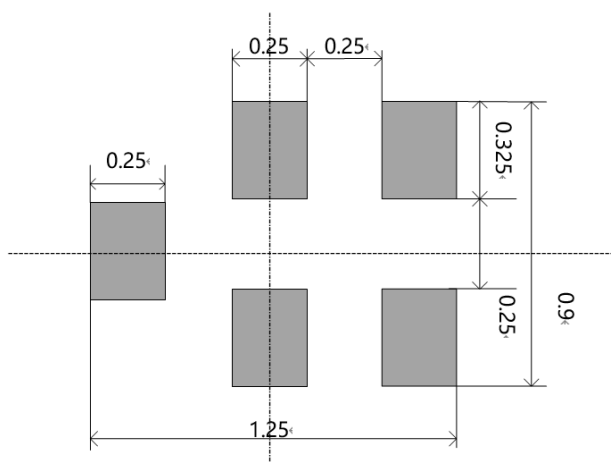


Figure 3. Wide Band Attenuation, 0.5 – 8 GHz

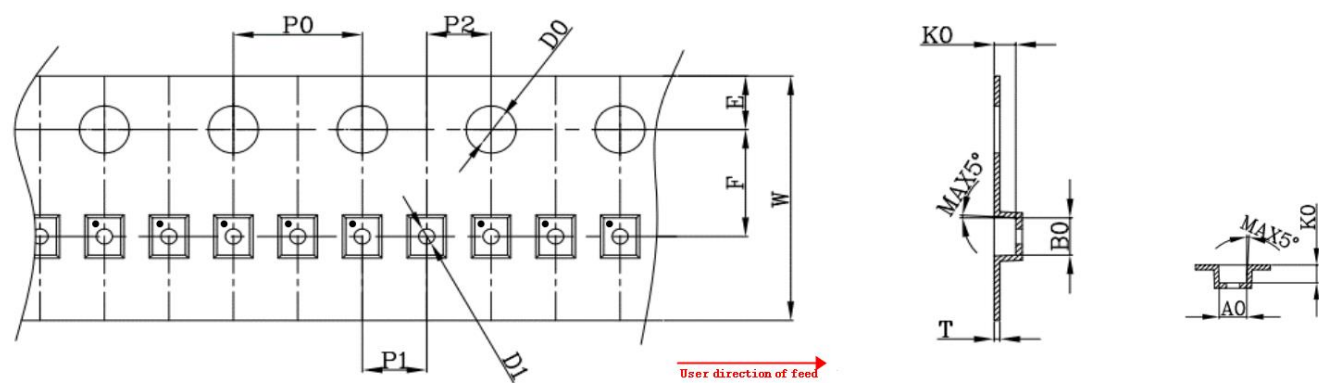
Package & Dimensions (Unit: mm)



PCB Mounting Pattern (Unit: mm)

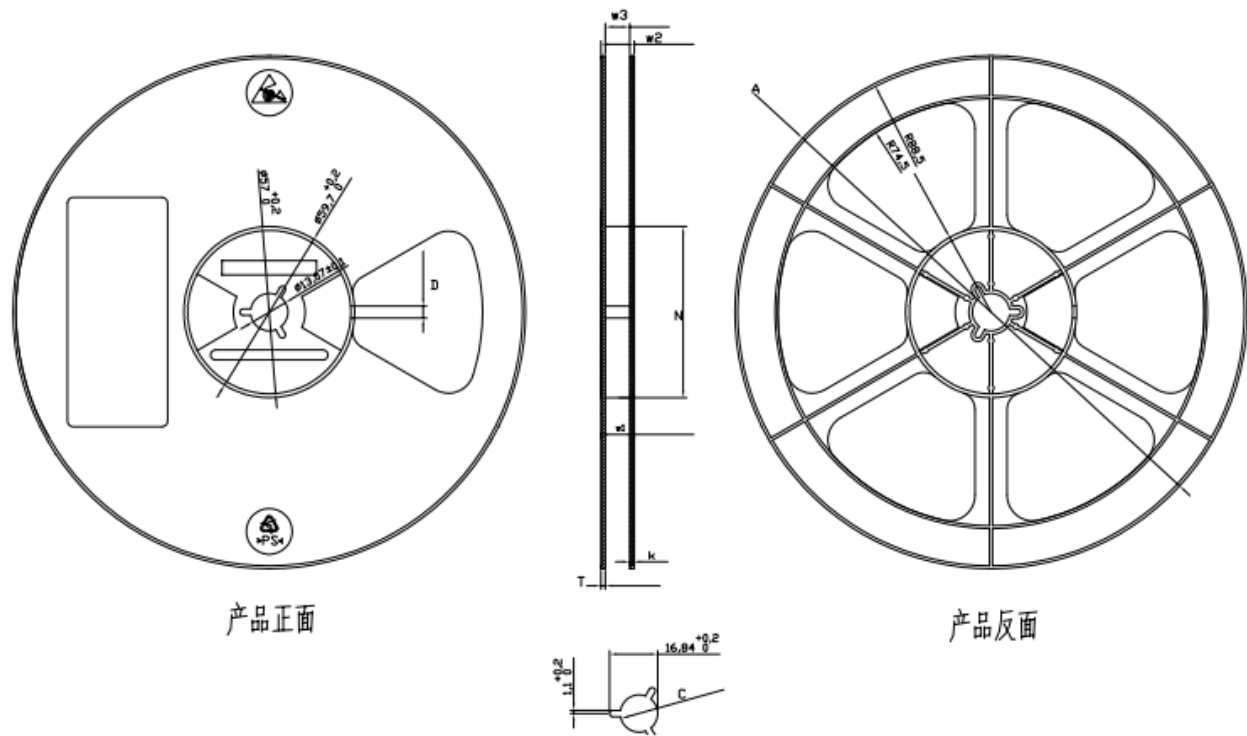


Tape and Reel Information (Unit: mm)



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

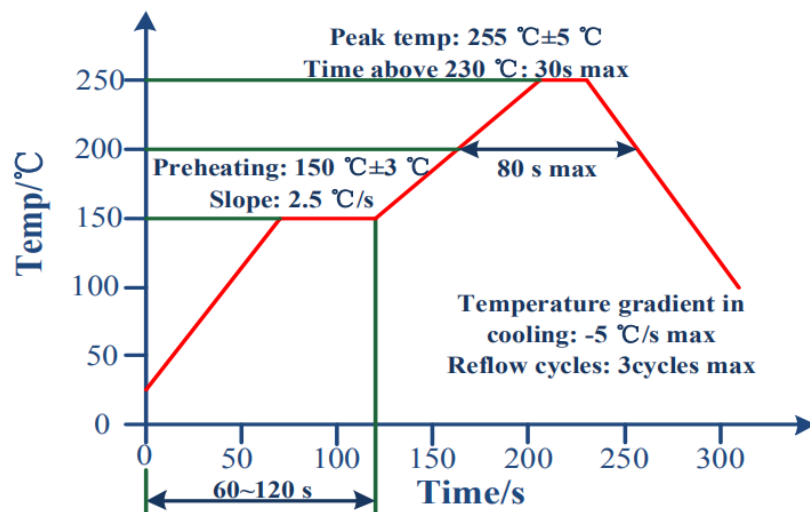
- (1) Black antistatic composite PC.
- (2) Cumulative tolerance of 10 sprocket holes is ± 0.20 .
- (3) All dimensions meet EIA-481-E requirements.
- (4) The sector of 250mm straps shall not exceed 2mm.



Reeling Quantity: 5000 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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