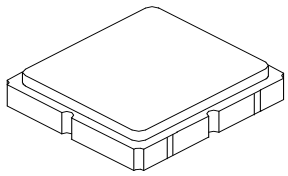
RFMi
A BRAND OF AKOUSTIS

RoHS compliant

SF1186B-2

1575.42 MHz SAW Filter

- ***Designed for Front-end GPS Applications***
- ***Low Insertion Loss***
- ***3.0 x 3.0 x 1.3 mm Surface-mount Case***
- ***No Matching Network Required***
- ***Complies with Directive 2002/95/EC (RoHS)***
- ***Moisture Sensitivity Level: 1***
- ***AEC-Q200 Qualified***



SM3030-6

Maximum Ratings

Rating	Symbol	Value	Units
Maximum Input Signal Level		+10	dBm
DC Voltage on any Non-ground Terminal	WVdc	4	Volts
Operable Temperature Range		-45 to +125	°C
Storage Temperature Range	T_{STG}	-40 to +105	°C
Lead Soldering Temperature for 10 Seconds	T_{WAVE}	260	°C
Peak Reflow Solder Temp for 40 Seconds	T_{Reflow}	235	°C
Suitable for Lead-free Soldering - Max Soldering Temperature		260°C for 30 s	

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_O			1575.42		MHz
1 dB Bandwidth	BW_1		2.046	15.3		MHz
Passband Amplitude Ripple, f_O ±2.0 MHz				0.1	1.0	dB_{P-P}
Passband Group Delay				27		ns
Passband Group Delay Ripple, f_O ±2.0 MHz				1		ns_{P-P}
Passband VSWR, f_O ±2.0 MHz				1.4	2.0	
Insertion Loss				2.68	3.5	dB
Attenuation Referenced to 0 dB:						
850 MHz			45	51.2		dB
1500 MHz			40	52.7		
1535.42 MHz			20	38.9		
1615.42 MHz			20	58.8		
1640 MHz			45	59.1		
1700 MHz			50	56.7		
Temperature Coefficient			-30			ppm/°C
Operating Temperature	T_A		-40		+85	°C
Single-ended Input /Output Impedance Match	No matching network required for operation at 50 ohms					
Case Style	SM3030-6 3 x 3 mm Nominal Footprint					
Lid Symbolization y=year, ww=week, s=shift	468 YWWS					
Standard Reel Quantity Reel Size 7 Inch			500 Pieces/Reel			
Reel Size 13 Inch			3000 Pieces/Reel			

Electrical Connections

Pin #	Description	Pin #	Description
1	Ground	4	Ground
2	Input	5	Output
3	Ground	6	Ground

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

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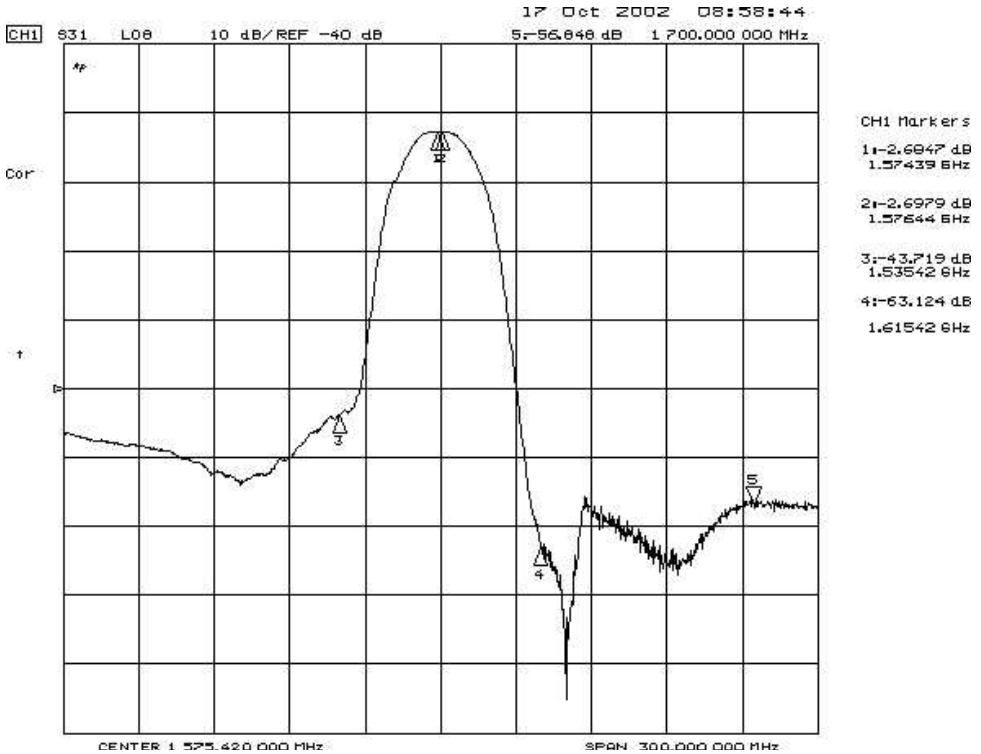
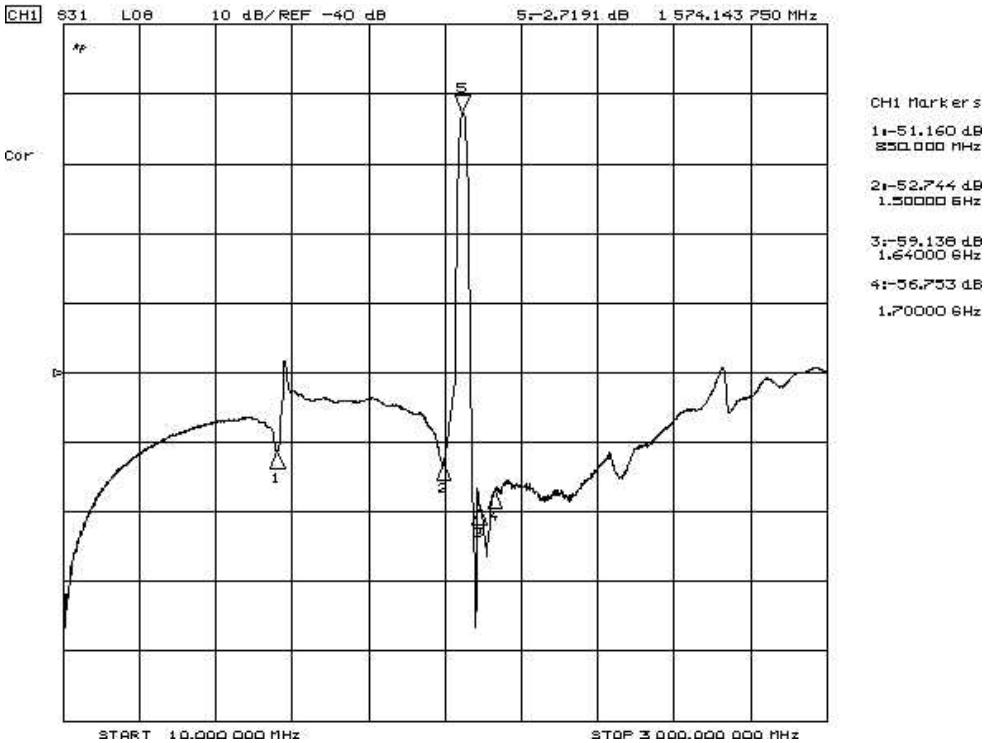
Transfer function :

(1) S21 response (span : 300 MHz)



(2) S21 response (span : 3 GHz)



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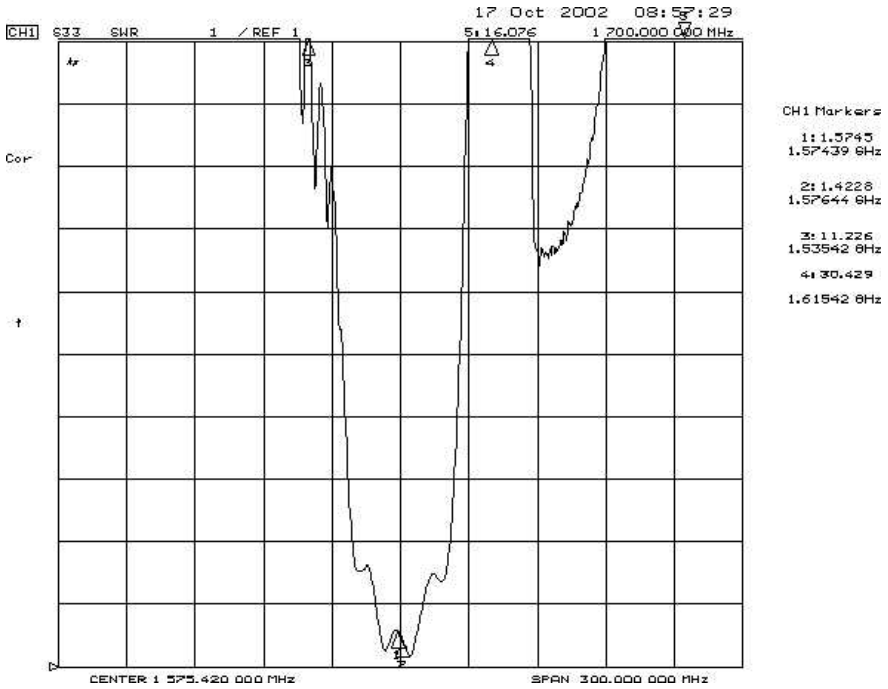
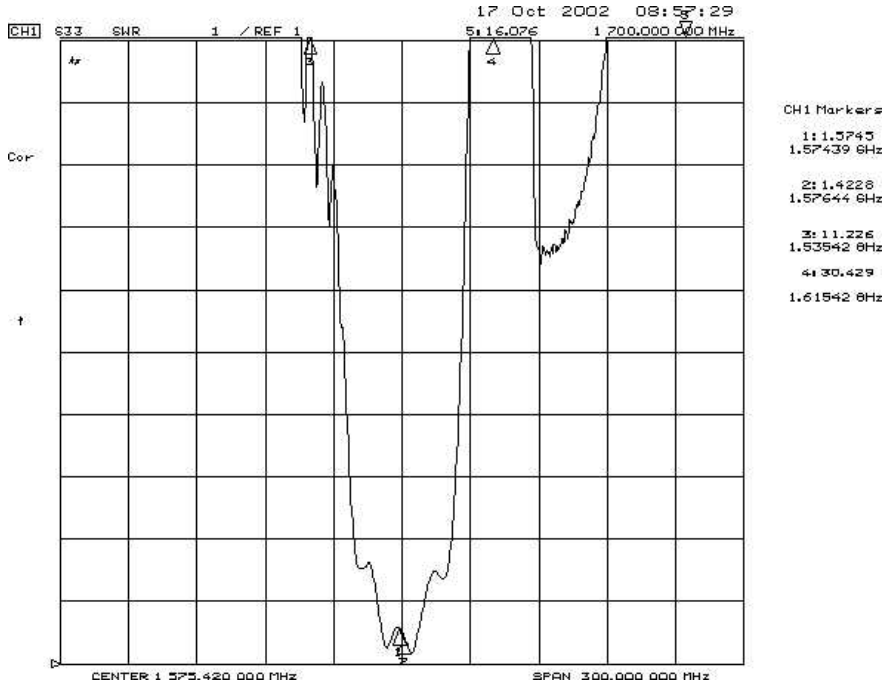
Reflection Functions:

S11



S22



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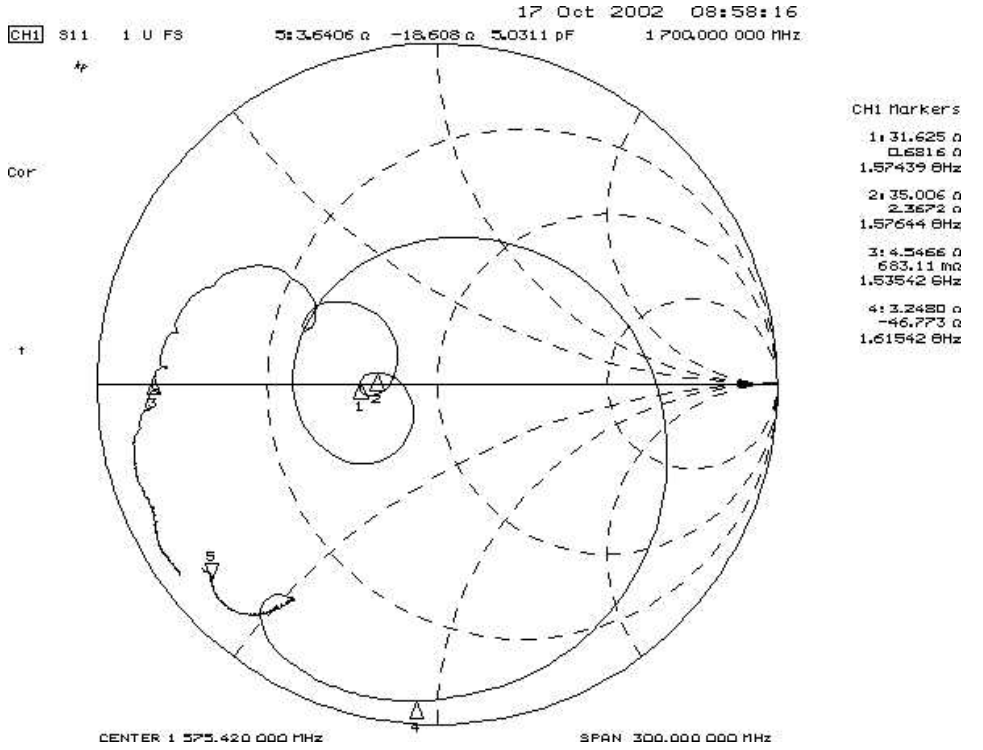
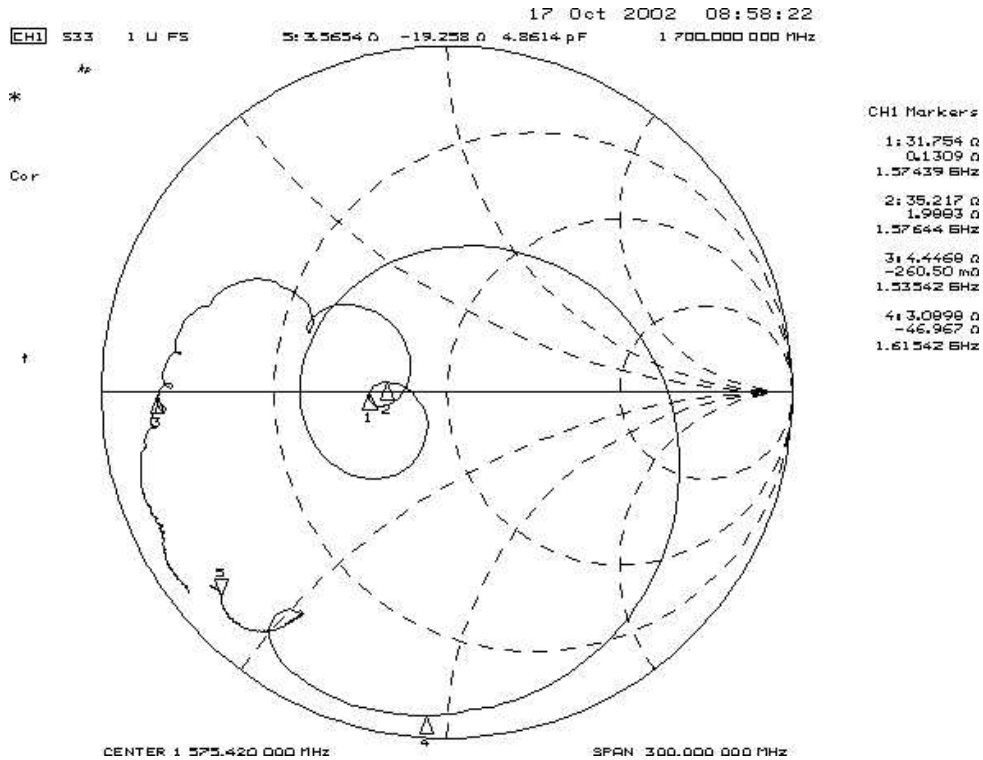
Reflection Functions:





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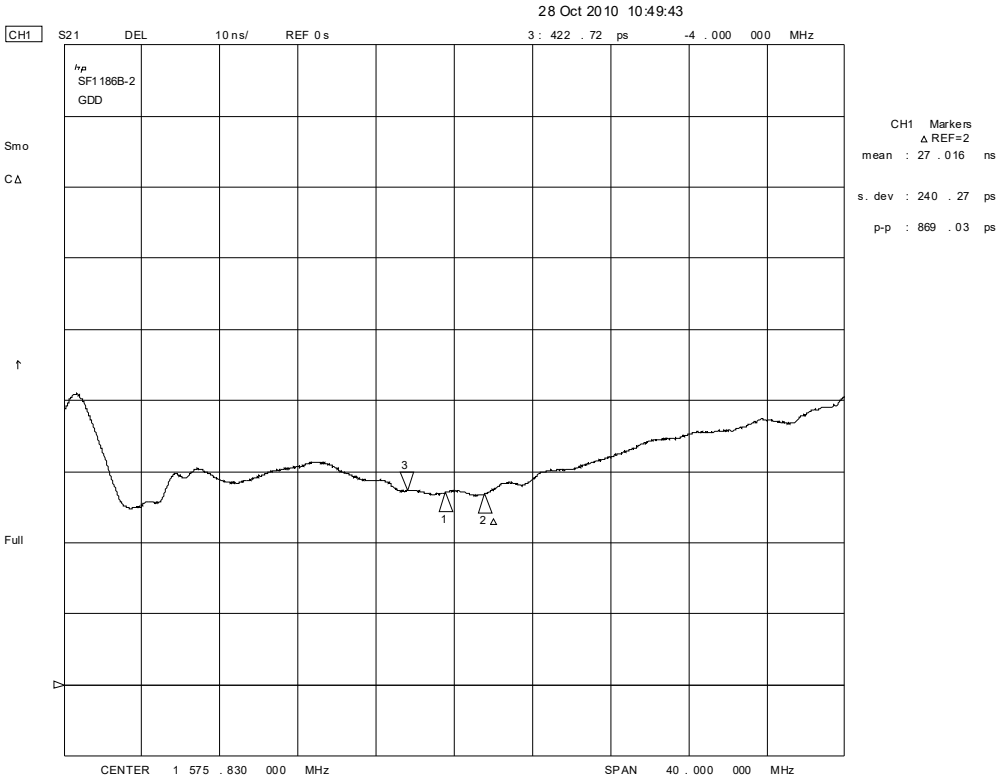
Group Delay:



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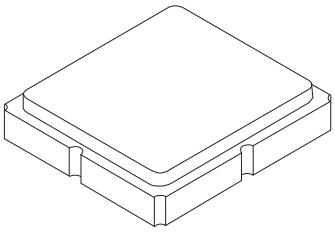
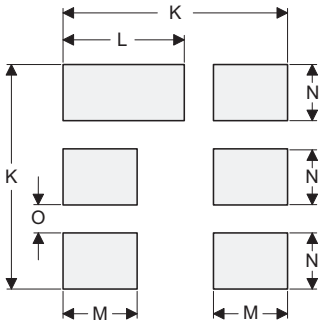
SM3030-6 Case

6-Terminal Ceramic Surface-Mount Case
3.0 X 3.0 mm Nominal Footprint





PCB Footprint Top View

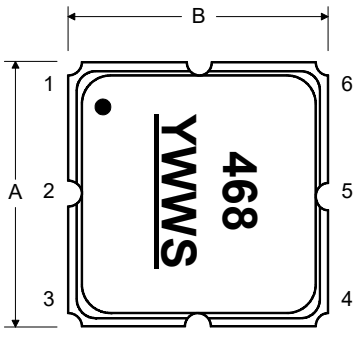
Case and PCB Footprint Dimensions

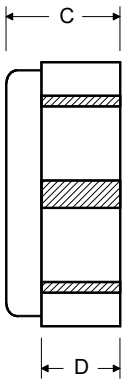
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.00	3.13	0.113	0.118	0.123
B	2.87	3.00	3.13	0.113	0.118	0.123
C	1.12	1.25	1.38	0.044	0.049	0.054
D	0.77	0.90	1.03	0.030	0.035	0.040
E	2.67	2.80	2.93	0.105	0.110	0.115
F	1.47	1.60	1.73	0.058	0.063	0.068
G	0.72	0.85	0.98	0.028	0.033	0.038
H	1.37	1.50	1.63	0.054	0.059	0.064
I	0.47	0.60	0.73	0.019	0.024	0.029
J	1.17	1.30	1.43	0.046	0.051	0.056
K		3.20			0.126	
L		1.70			0.067	
M		1.05			0.041	
N		0.81			0.032	
O		0.38			0.015	

Case Materials

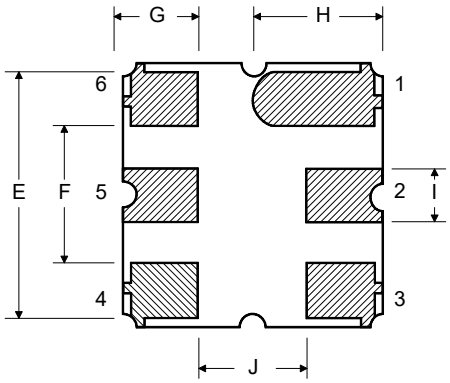
Materials	
Solder Pad Plating	0.3 to 1.0 µm Gold over 1.27 to 8.89 µm Nickel
Lid Plating	2.0 to 3.0 µm Nickel
Body	Al_2O_3 Ceramic

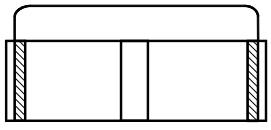
TOP VIEW





BOTTOM VIEW





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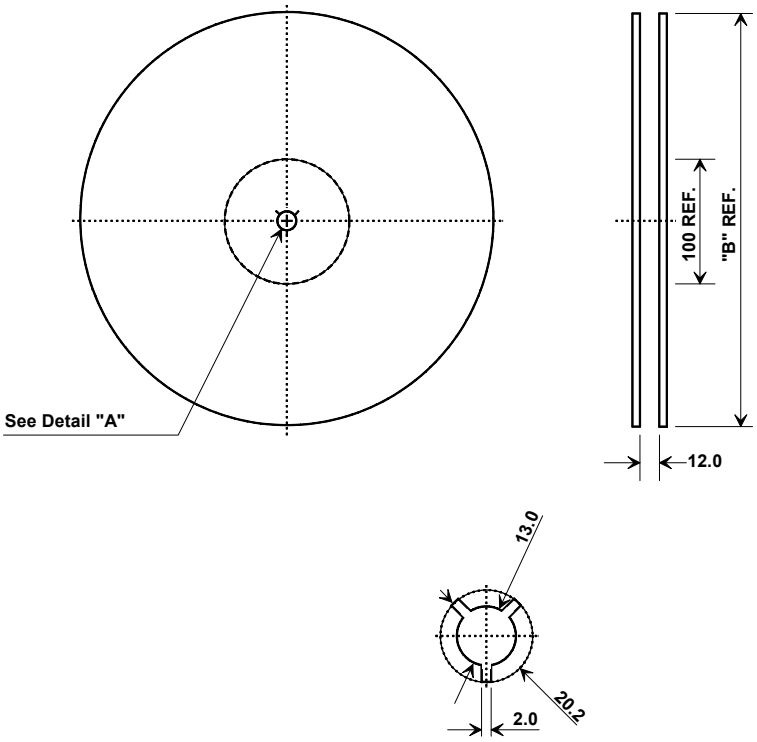
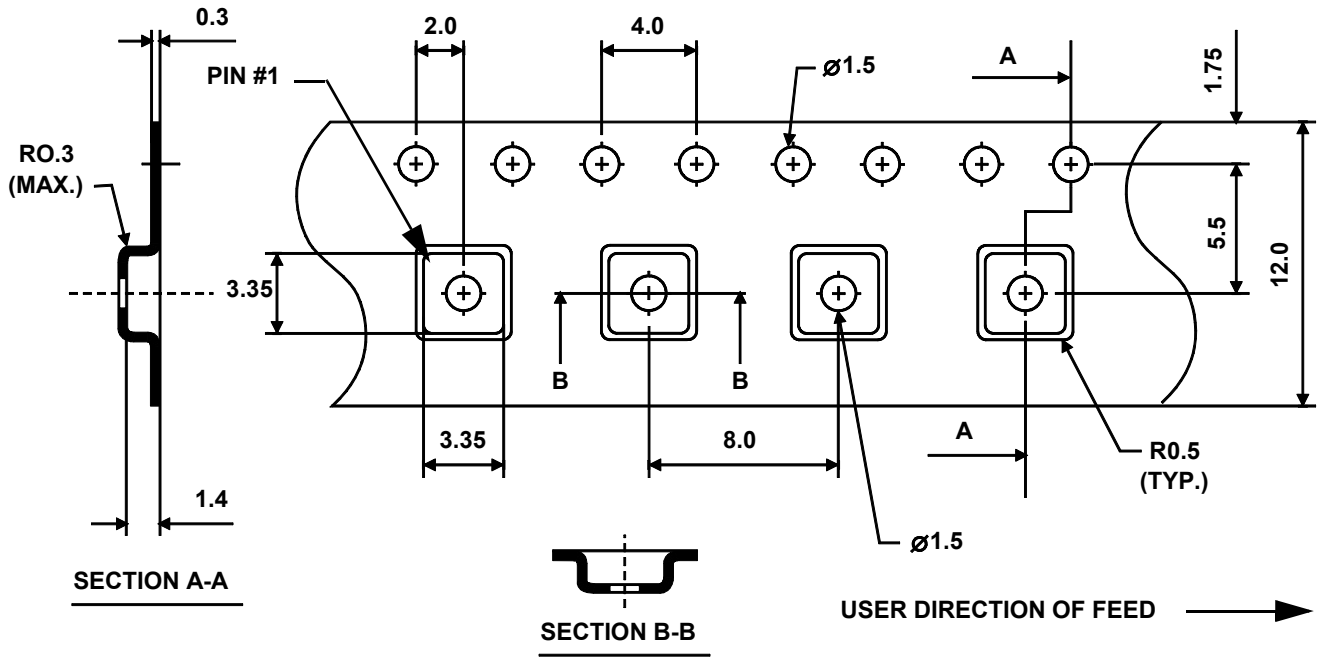
Tape and Reel Specifications

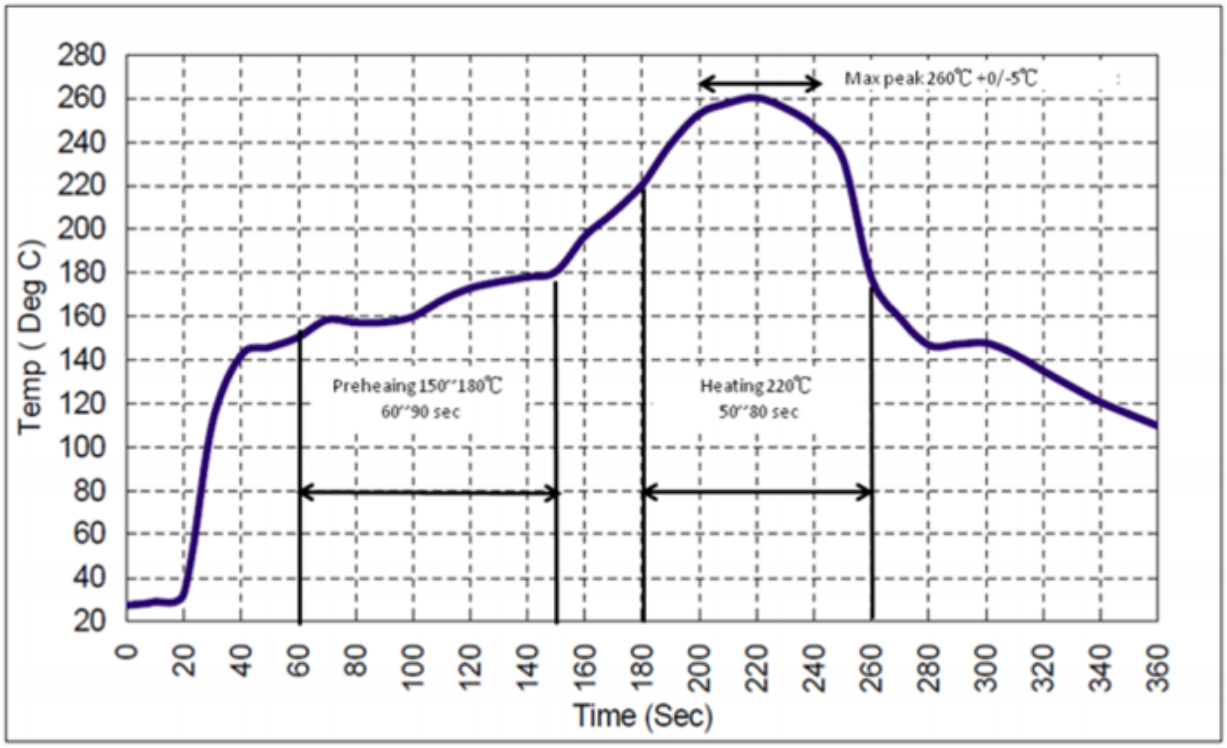
Tape and Reel Standard per ANSI/EIA-481



"B"		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	3000

COMPONENT ORIENTATION



Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C+0/-5°C peak (10 seconds).
4. Time: 5 times maximum.