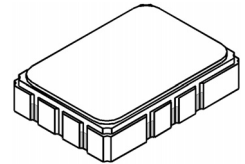


- Designed for SDARS IF Receiver
- Low Insertion Loss
- 5.0 X 7.0 mm Surface-Mount Case
- Differential or Single Ended Input and Output
- Complies with Directive 2002/95/EC (RoHS)
- Moisture Sensitivity Level: 1
- AEC-Q200 Qualified

SF2038B-2

**76.500 MHz
SAW Filter**



SMP-03

Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Max. DC voltage between any 2 terminals	30	VDC
Storage Temperature Range (with tape & reel)	-40 to +85	°C
Storage Temperature Range (without tape & reel)	-50 to +125	°C
Max Soldering Profile	265°C for 10 s	

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_c			76.500		MHz
Passband						
Insertion Loss	IL			10.0	12.0	dB
1dB Passband	BW ₁		12.5	14.0		MHz
15dB Bandwidth	BW ₁₅			16.8	18.0	MHz
30dB Bandwidth	BW ₃₀			18.0	19.2	MHz
Amplitude Ripple over $f_c \pm 6.25$ MHz				0.70	1.3	dB _{p-p}
Group Delay Variation over $f_c \pm 6.25$ MHz	GDV			40	150	ns _{p-p}
Rejection						
50 to 64.44 MHz			40	46		dB
64.44 to 66.70 MHz -40 to 85°C			36	41		
64.44 to 66.70 MHz 85 to 105°C			30			
86.30 to 87.54 MHz			*30	44		
87.54 to 91.50 MHz			31	44		
91.50 to 100 MHz			40	47		
Operating Temperature Range	T _A		-40		+105	°C
Frequency Coefficient	FTC			-87		ppm/°C
Differential Input				175 ohms		
Differential Output				180 ohms		
Case Style				SMP-03 7 x 5 mm Nominal Footprint		
Lid Symbolization (YY=year, WW=week, S=shift, ## = Sequence code)				RFM, SF2038B, YYWWS##		

*At low temperature extreme -40°C



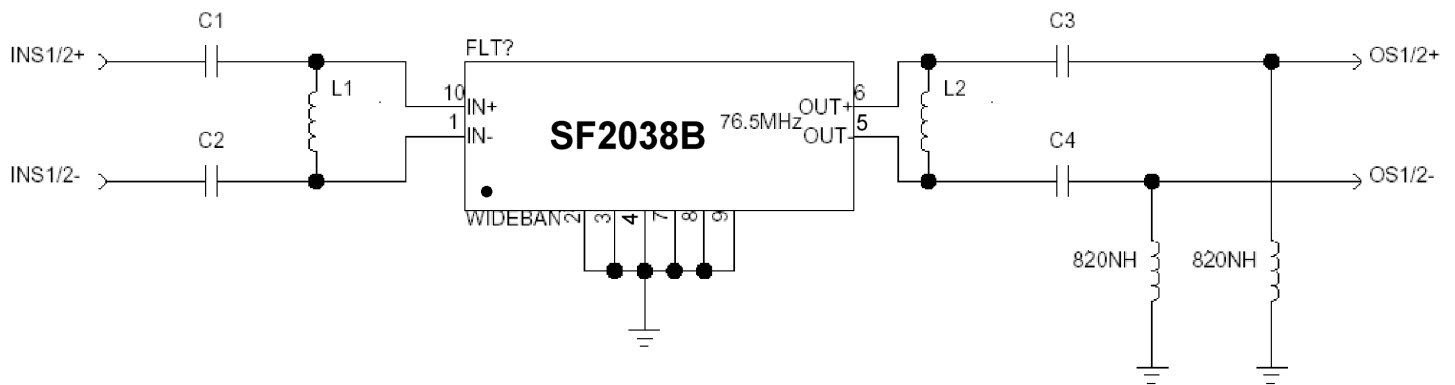
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

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.

Matching Circuit and Matching Component Values Used in G3 Sirius Radios

(Refer to Sirius Radio G3 Chipset Application Note, Doc. #RX000104-B, Sec. 4.2.2)

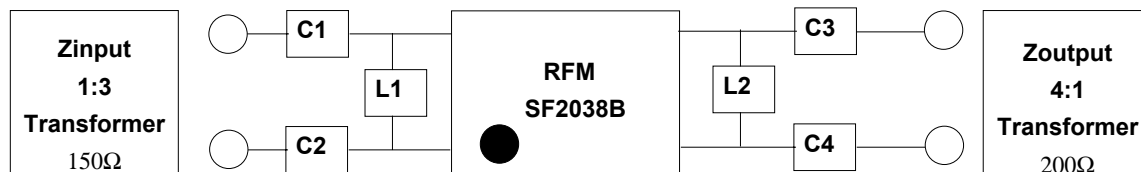


Wideband SAW Matching Circuit

Wideband SAW Matching Values

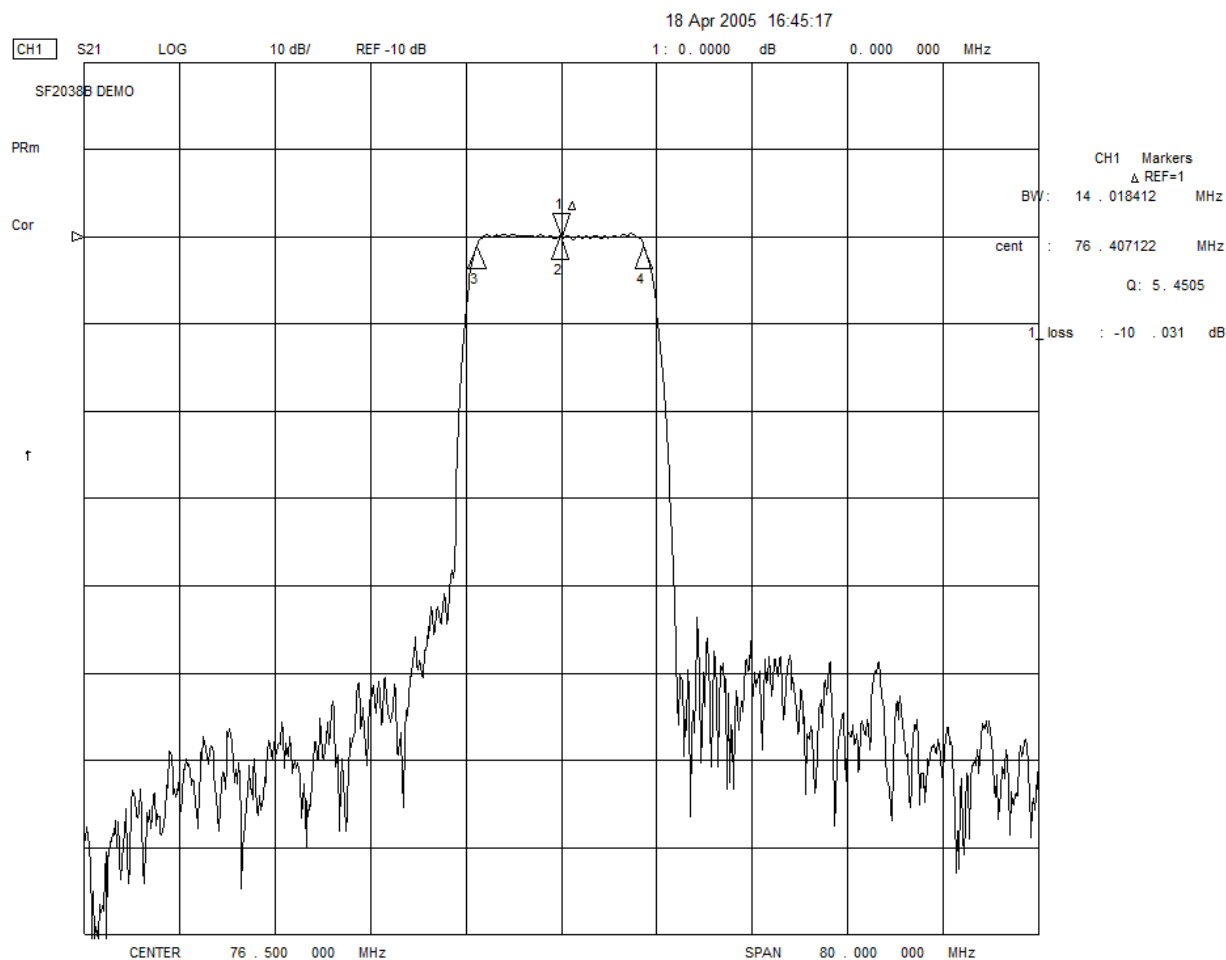
Reference Designator	Value
C1	15 pF
C2	15 pF
L1	270 nH
L2	270 nH
C3	27 pF
C4	27 pF

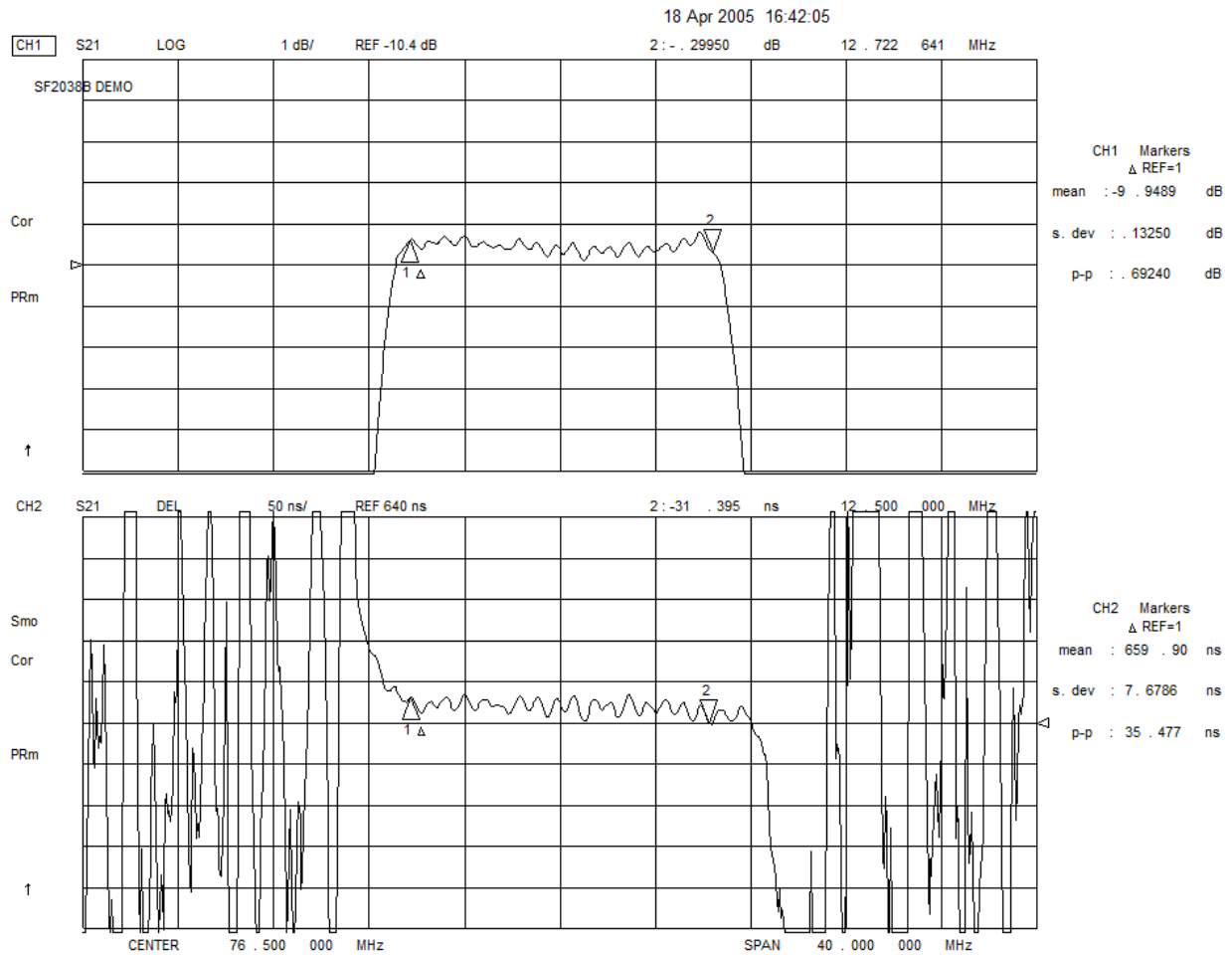
Matching Circuit and Matching Component Values Used on Filter Demo Board

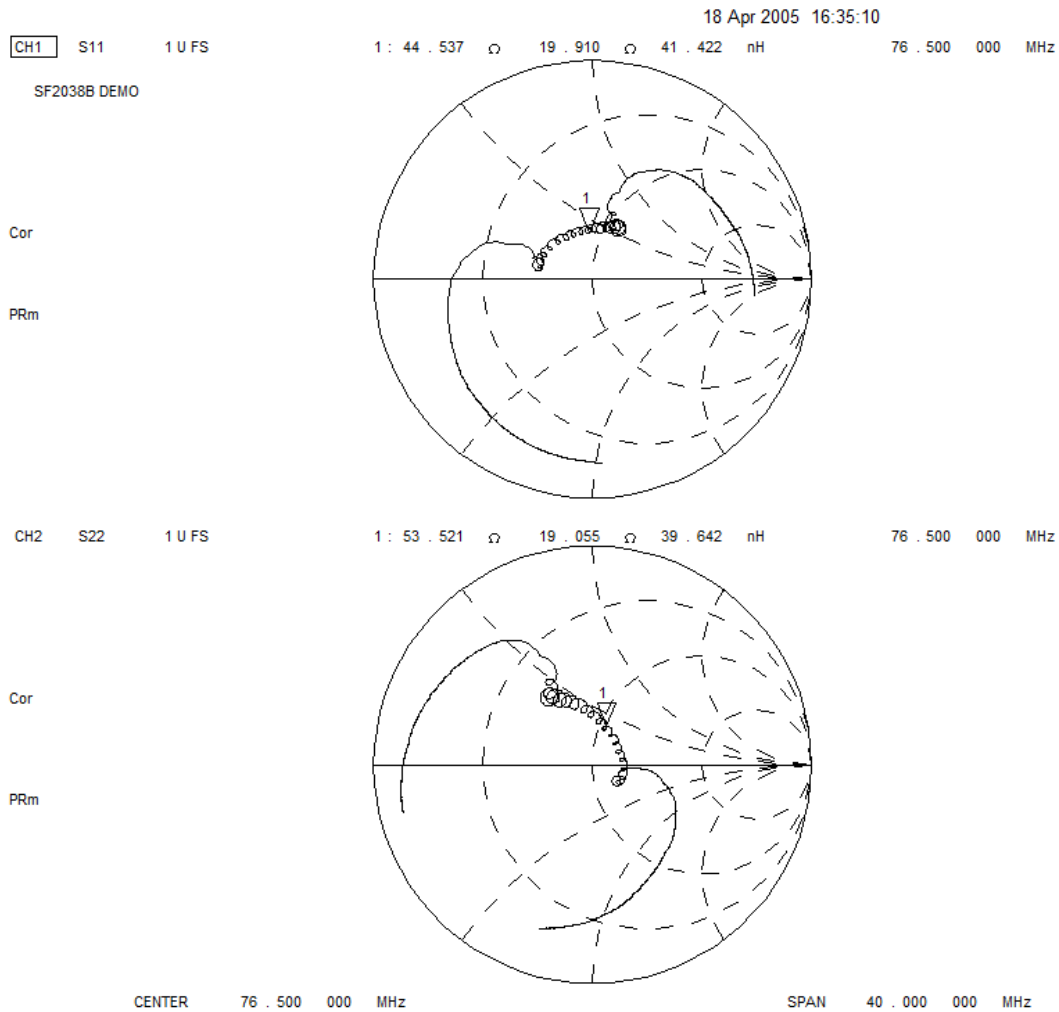


SF2038B
76.500 MHz

C1 = 22pF
C2 = 22pF
L1 = 220nH
L2 = 270nH
C3 = 22pF
C4 = 22pF



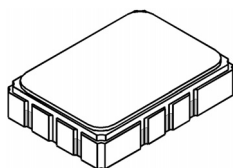




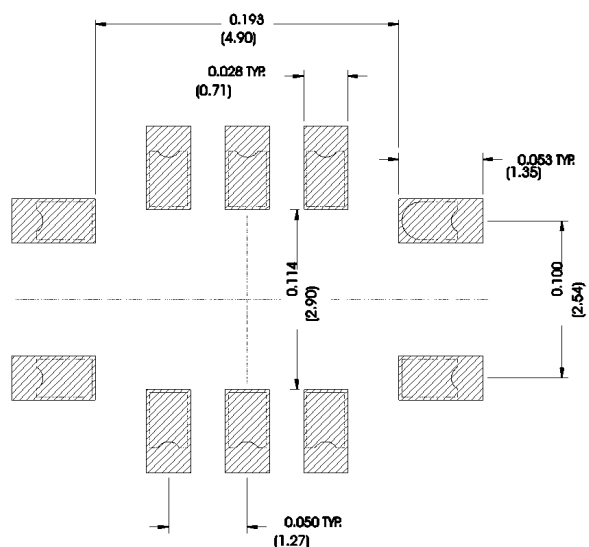
SMP-03 Case

10-Terminal Ceramic Surface-Mount Case

7 x 5 mm Nominal Footprint



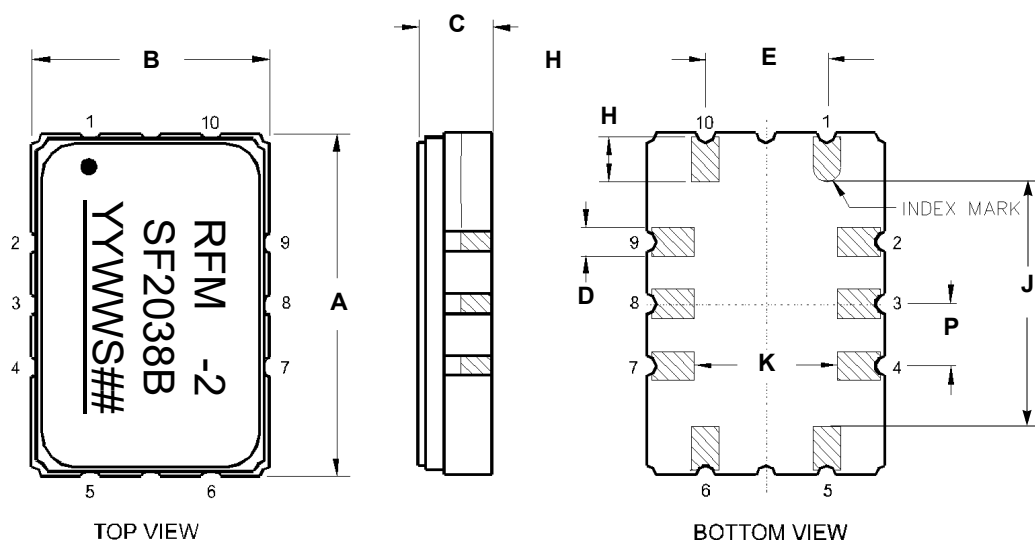
Recommended PCB Footprint



Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	6.80	7.00	7.20	0.268	0.276	0.283
B	4.80	5.00	5.20	0.189	0.197	0.205
C		1.65	2.00		0.065	0.079
D	.47	0.60	.73	0.019	0.024	0.029
E	2.41	2.54	2.67	0.095	0.100	0.105
H	0.87	1.0	1.13	0.034	0.039	0.044
J	4.87	5.00	5.13	0.192	0.197	0.202
K	2.87	3.00	3.13	0.113	0.118	0.123
P	1.14	1.27	1.40	0.045	0.050	0.055

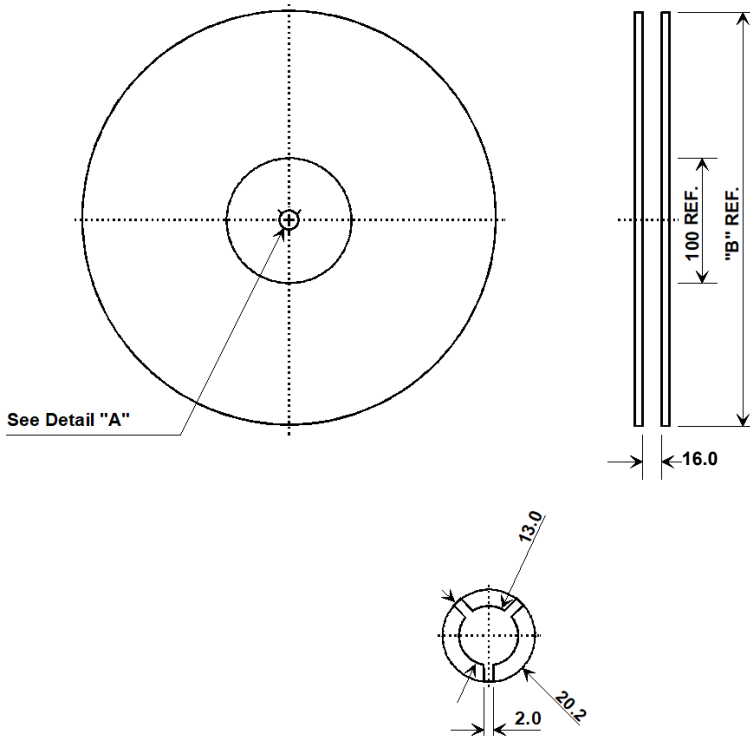
Materials	
Solder Pad Termination	Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick
Body	Al ₂ O ₃ Ceramic

Electrical Connections		
Connection		Terminals
Port 1	Input or Return	10
	Return or Input	1
Port 2	Output or Return	5
	Return or Output	6
Ground		All others
Single Ended Operation		Return is ground
Differential Operation		Return is hot



Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481



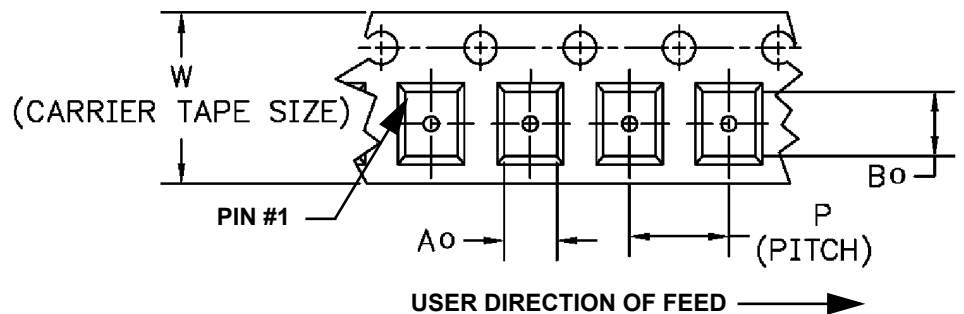
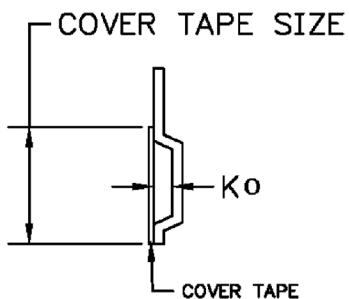
"B"		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	2000

Product Reflow/ESD/MSL

Reflow Peak Temperature	265	°C
Reflow Peak Time	10	Seconds
Liquidus 217 Temperature/Time	110	Seconds
Over Liquidus 230 Temperature/Time	70	Seconds
Reflow Condition	SMT	
Class Level HBM	2	
HBM(V)	2000	HBM(V)
MM(V)	N/A	MM(V)
CDM(V)	2000	CDM(V)

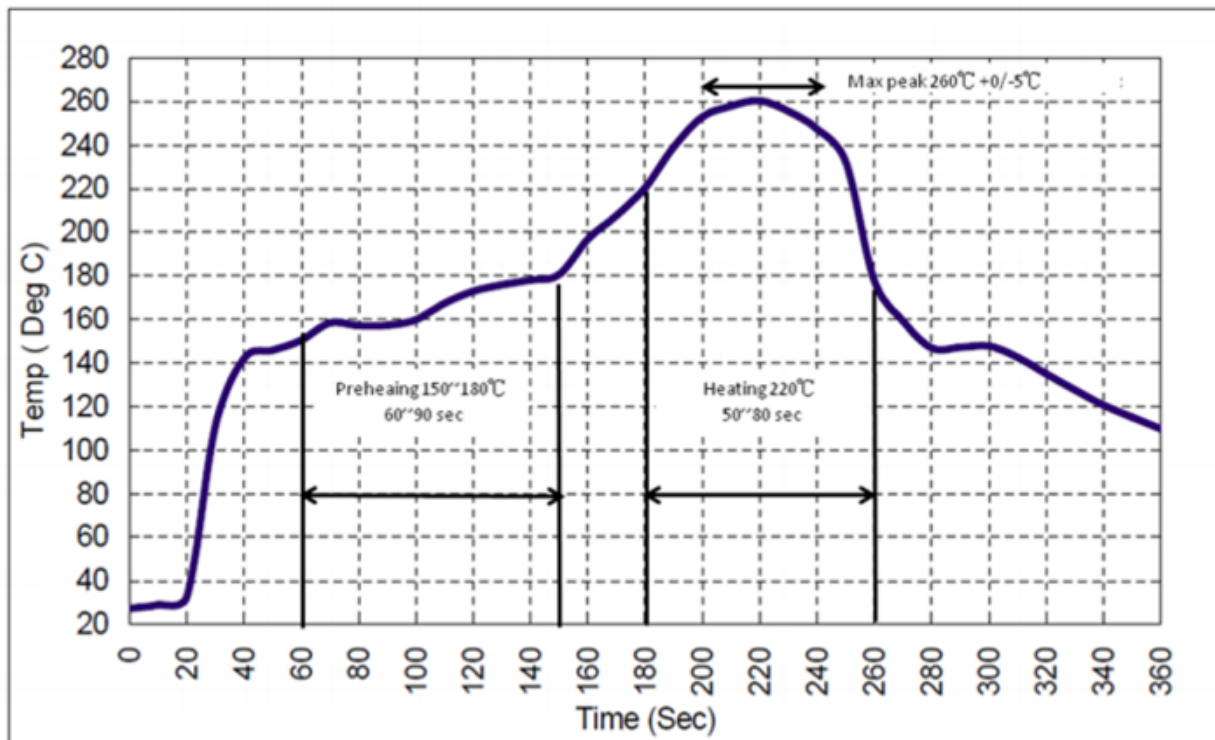
COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	5.5 mm
Bo	7.5 mm
Ko	2.0 mm
Pitch	8.0 mm
W	16.0 mm



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.



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