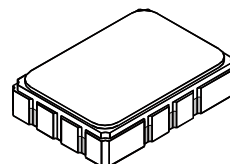




AEC-Q200
This component was always
RoHS compliant from the first
date of manufacture.

SF2039B-2

**72.540 MHz
SAW Filter**



SMP-03

- **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 2011/65/EU (RoHS)**



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			72.540		MHz
Passband	Insertion Loss	IL		10.5	12.5	dB
	1dB Passband	BW ₁	3.7	4.0		MHz
	15dB Bandwidth	BW ₁₅		6.5	6.7	MHz
	30dB Bandwidth	BW ₃₀		7.5	7.7	MHz
	Amplitude Ripple over $f_c \pm 1.85$ MHz			0.5	1.3	dB _{P-P}
	Group Delay Variation over $f_c \pm 1.85$ MHz	GDV		60	150	ns _{P-P}
Rejection	50 to 66.48 MHz		40	47		dB
	66.48 to 68.08 MHz		30.5	43		
	77.30 to 78.60 MHz		38	42		
	78.60 to 86.50 MHz		40	44		
	86.50 to 91.50 MHz		45	50		
	91.50 to 100.00 MHz		45	55		
Operating Temperature Range	T _A		-40		+105	°C
Frequency Temperature Coefficient	FTC			-18		ppm/°C
Differential Input				175 ohms		
Differential Output				1000 ohms		
Case Style				SMP-03 7 x 5 mm Nominal Footprint		
Lid Symbolization (YY=year, WW=week, S=shift)				RFM, SF2039B-2, YYWWS		

Electrical Connections

Connection	Terminals
Port 1 Hot	10
Port 1 Ground Return	1
Port 2 Hot	5
Port 2 Ground Return	6
Case Ground	All Others



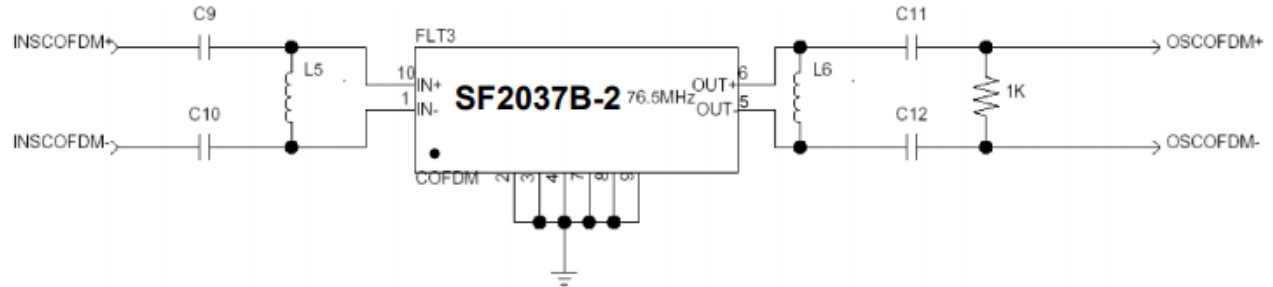
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.

Matching Circuit and Matching Component Values Used in G3 Sirius Radios

(Refer to Sirius Radio G3 Chipset Application Note, Doc. #RX000104-B, Sec. 4.2.4)

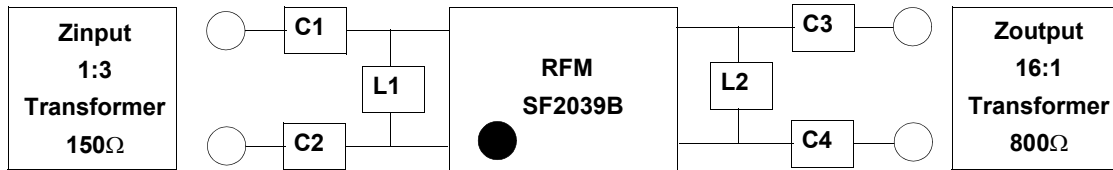


COFDM Narrowband SAW Matching Circuit

TDM1 Narrowband SAW Matching Values

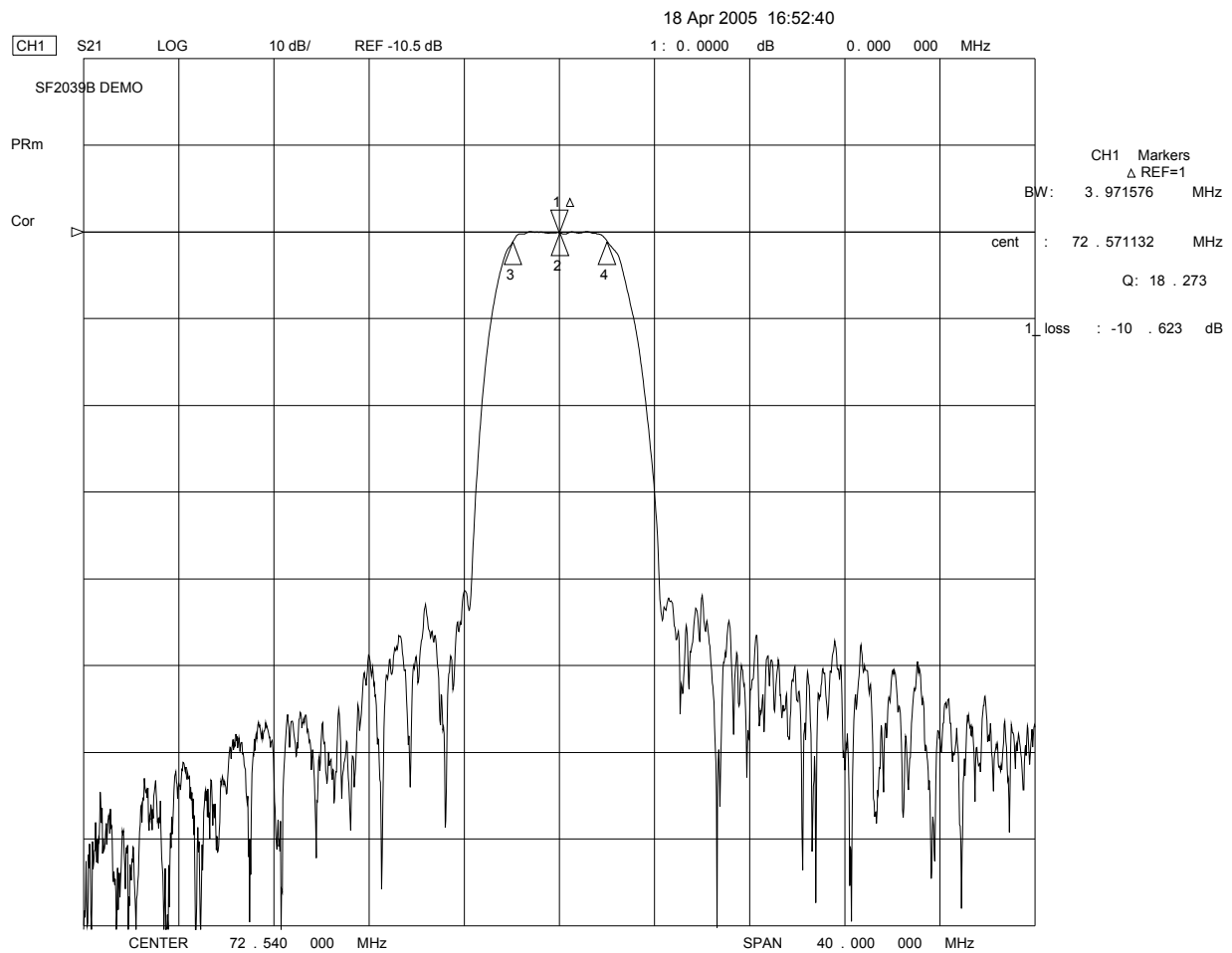
Reference Designator	Value
C5	10 pF
C6	10 pF
L3	330 nH
L4	560 nH
C7	100 pF
C8	100 pF

Matching Circuit and Matching Component Values Used on Filter Demo Board

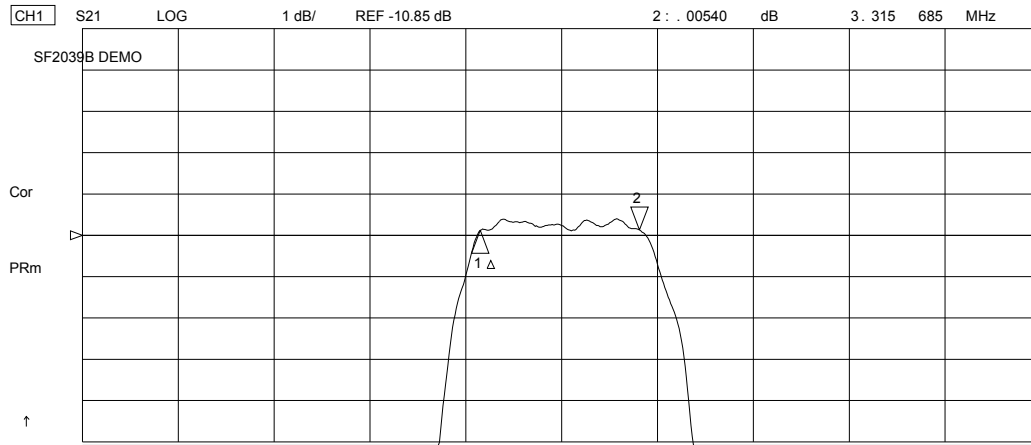


SF2039B
72.540 MHz

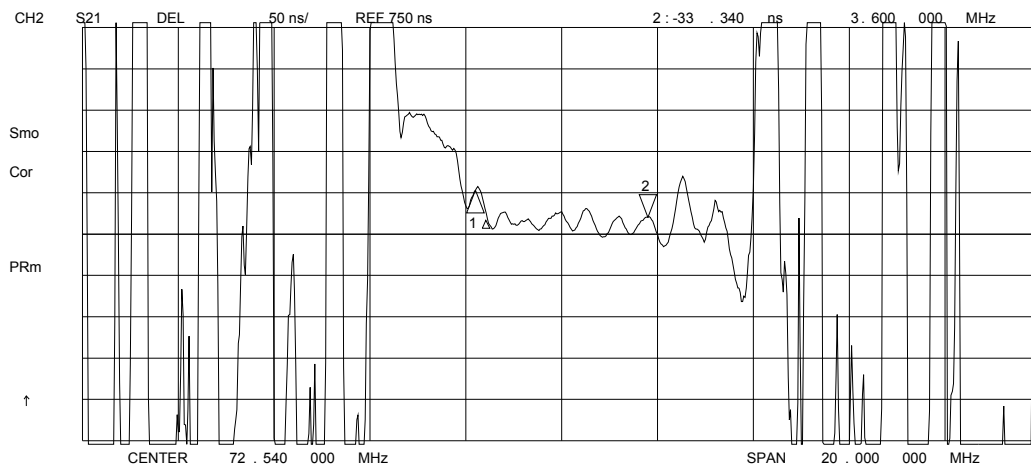
C1 = 10pF
C2 = 10pF
L1 = 330nH
L2 = 390nH
C3 = 18pF
C4 = 18pF



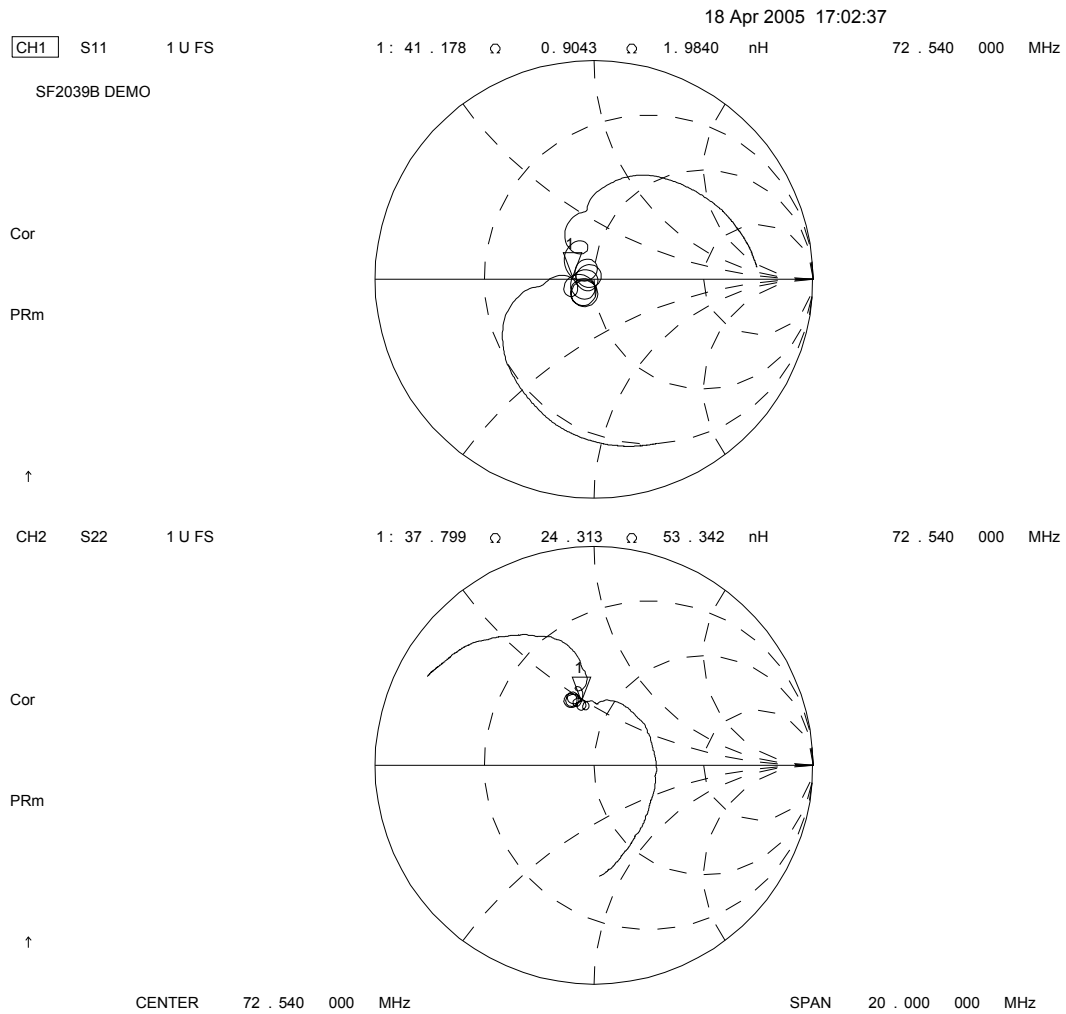
18 Apr 2005 16:59:10



CH1 Markers
 Δ REF=1
 mean : -10 . 593 dB
 s. dev : . 08060 dB
 p-p : . 28160 dB



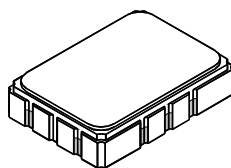
CH2 Markers
 Δ REF=1
 mean : 766 . 06 ns
 s. dev : 11 . 855 ns
 p-p : 61 . 340 ns



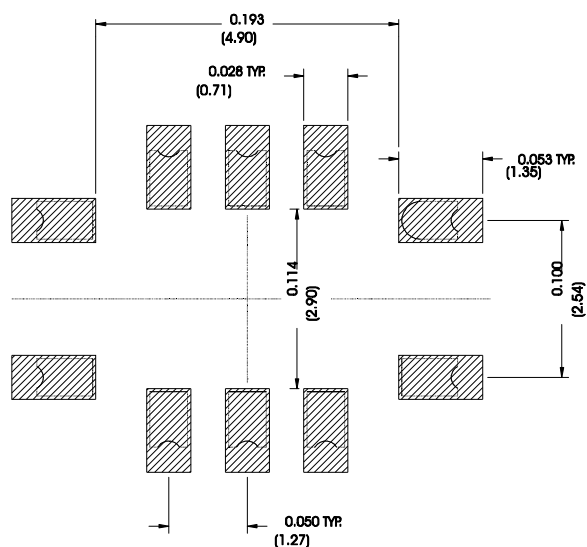
SMP-03 Case

10-Terminal Ceramic Surface-Mount Case

7 x 5 mm Nominal Footprint



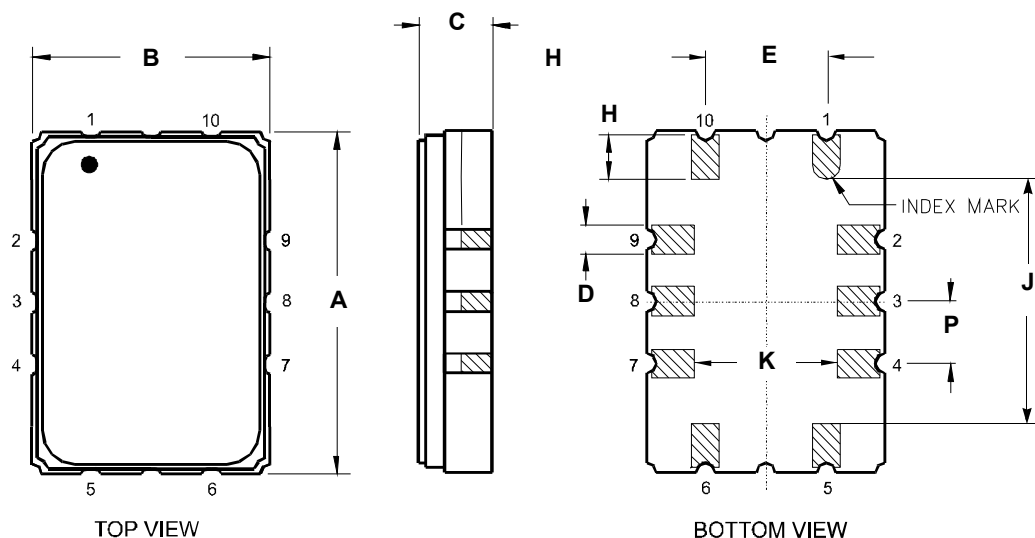
Recommended PCB Footprint



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

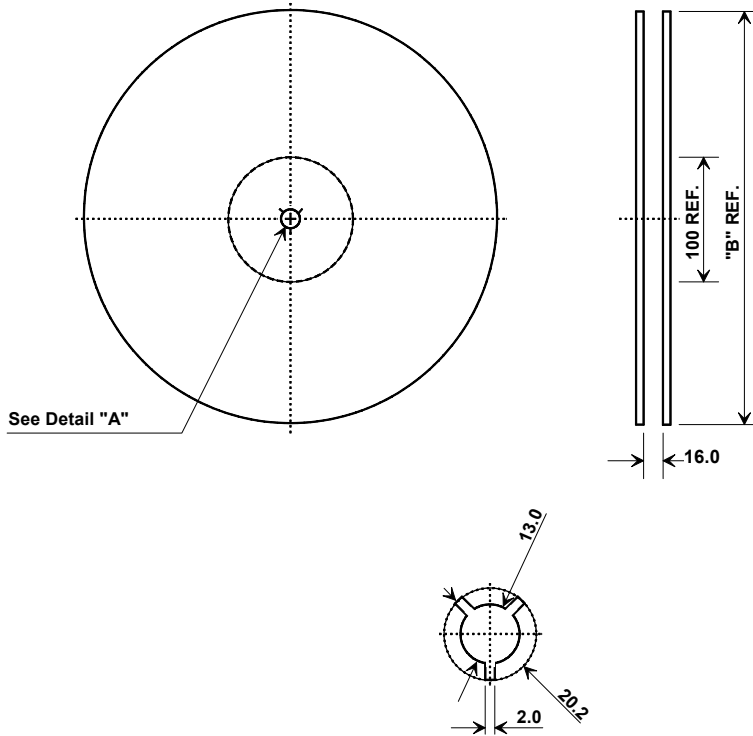
Materials	
Solder Pad Termination	Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick
Body	Al ₂ O ₃ Ceramic
Pb Free	

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

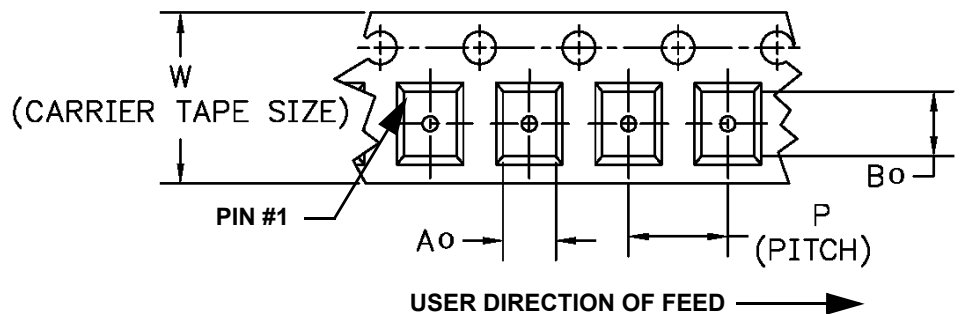
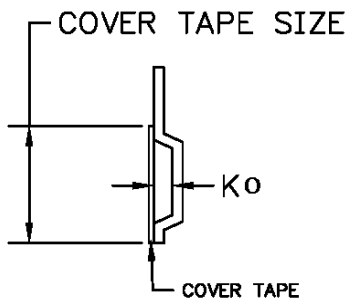
Tape and Reel Standard per ANSI/EIA-481



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

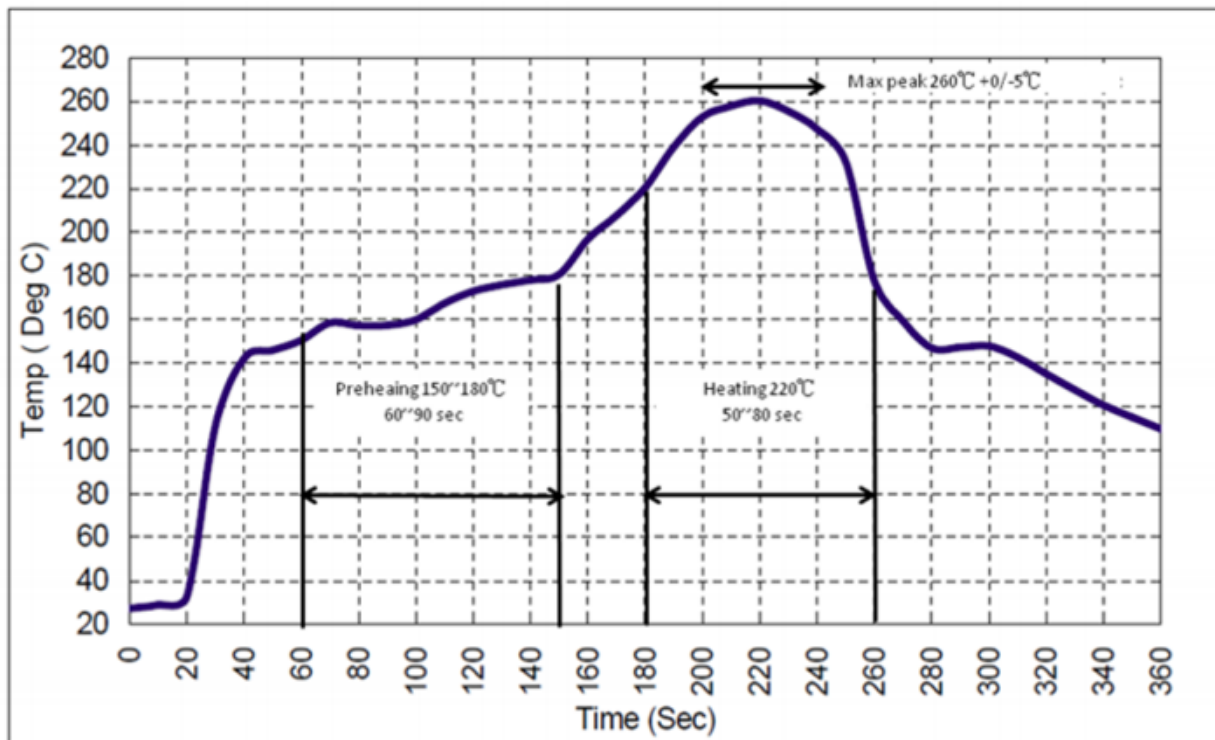
COMPONENT ORIENTATION and DIMENSIONS

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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