



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

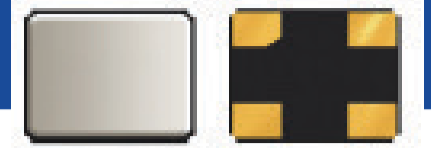
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IoT OPTIMIZED LOW PROFILE QUARTZ CRYSTAL



1.6 x 1.2 x 0.4mm



RoHS/RoHS II Compliant

MSL = N/A: NOT APPLICABLE

ABM12W SERIES

FEATURES

- Optimized for energy saving wearables and IoT applications
- Plated at exceptionally low plating capacitance, as low as 4pF, with optimized ESR
- 0.4 mm max height ideally suited for height constrained designs
- Seam sealed for longterm reliability

APPLICATIONS

- Wearables
- Internet of Things (IoT)
- Bluetooth/Bluetooth Low Energy (BLE)
- Wireless modules
- Machine-to-machine (M2M) connectivity
- Ultra-low power MCU
- Near Field Communication (NFC)
- ISM Band

STANDARD SPECIFICATIONS

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency Range	24.0000		52.0000	MHz	
Operation Mode	Fundamental				
Operating Temperature Range	-40		+125	°C	See options
Storage Temperature	-55		+125	°C	
Frequency Tolerance @ +25°C	-10		+10	ppm	See options
Frequency Stability over the Operating Temperature (ref. to +25°C)	-10		+10	ppm	See options
Equivalent series resistance (R1) (over -40°C to +125°C)		< 90	150	Ω	24.0000 – 31.9999MHz
		< 80	100		32.0000 – 36.9999MHz
		< 60	80		37.0000 – 52.0000MHz
Shunt capacitance (C0)		< 1.0	2.0	pF	
Load capacitance (CL)		4.0		pF	See options
Drive Level		10	100	μW	
Aging (1 year)	-2		+2	ppm	@ 25°C±3°C
Insulation Resistance	500			MΩ	@ 100Vdc ± 15V

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OPTIONS AND PART IDENTIFICATION (NOTE 1)

Note 1: Contact Abracon for part number requests with carrier frequency callouts up to 5 & 6 digit accuracy after the decimal.

ABM12W- [] MHz - [] - [] - [] - [] - []

Frequency in MHz
Please specify the Frequency in MHz out to **4 digit** accuracy after the decimal.
(e.g. 16.0000MHz)

Load Capacitance (pF)
8: 8pF
7: 7pF
6: 6pF
4: 4pF

Custom ESR
if other than standard
R □: Specify a value in Ω (e.g.: R70)

Packaging
Blank: Bulk
T3: 3kpcs / reel

Operating Temp.
I: 0°C ~ 50°C
E: 0°C ~ +70°C
B: -20°C ~ +70°C
C: -30°C ~ +70°C
N: -30°C ~ +85°C
D: -40°C ~ +85°C
J: -40°C ~ +105°C (*)
K: -40°C ~ +125°C (*)

Freq. Tolerance
1: ± 10 ppm
7: ± 15 ppm
2: ± 20 ppm
3: ± 25 ppm
4: ± 30 ppm
5: ± 50 ppm

Freq. Stability
U: ± 10 ppm (*)
G: ± 15 ppm (**)
X: ± 20 ppm (**)
W: ± 25 ppm (**)
Y: ± 30 ppm (**)
H: ± 35 ppm (**)
Z: ± 50 ppm
Q: ± 100 ppm

(*) Only offered @ Freq. Stability options: Z & Q.

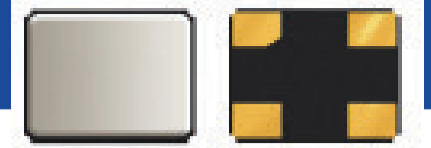
Contact ABRACON for tighter Frequency Stability.

(*) Only offered @ Operating Temp. Range options: I, E, & B

(**) Only offered @ Operating Temp. Range options: I, E, B, C, N, & D

Contact ABRACON for wider Operating Temp. Range.

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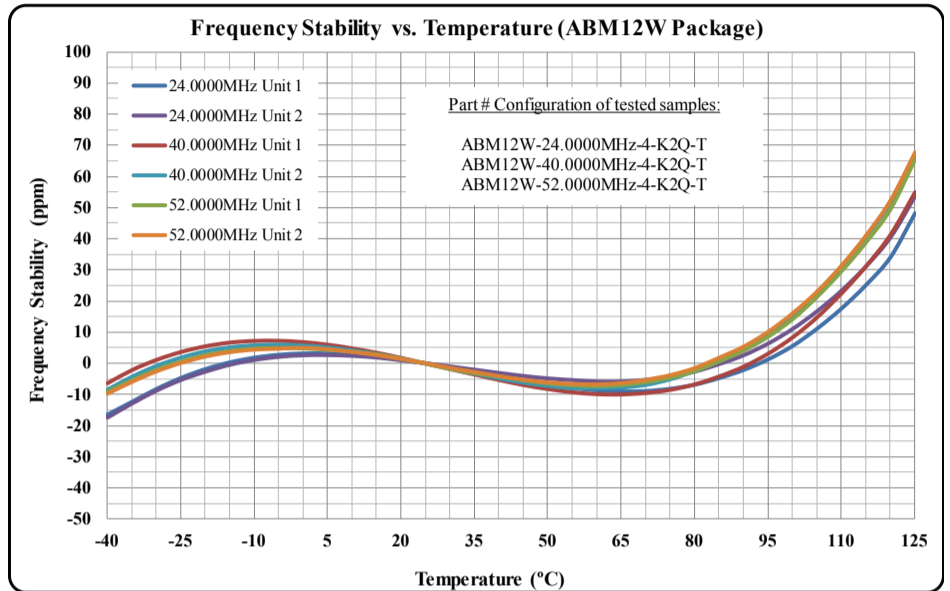
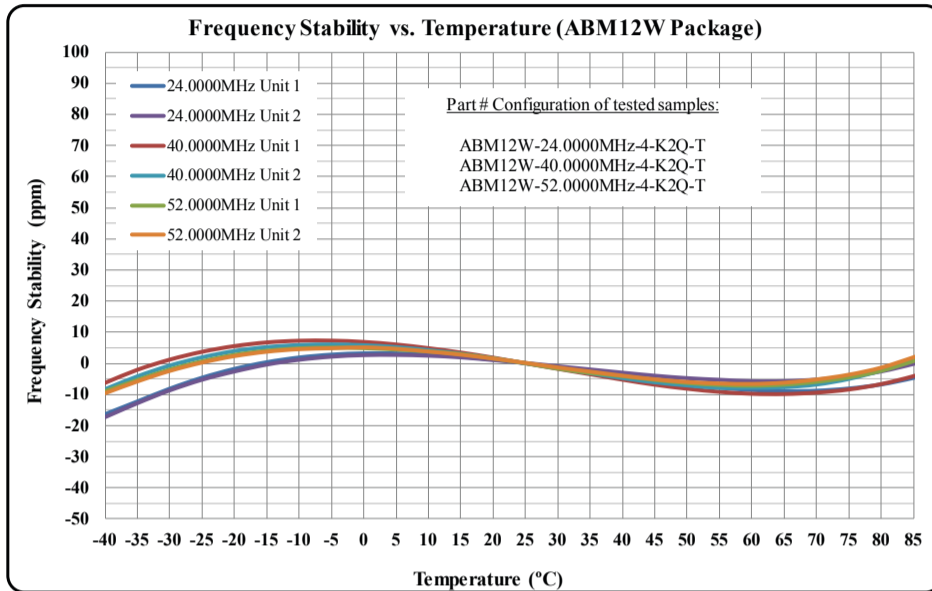
1.6 x 1.2 x 0.4mm

 RoHS/RoHS II Compliant

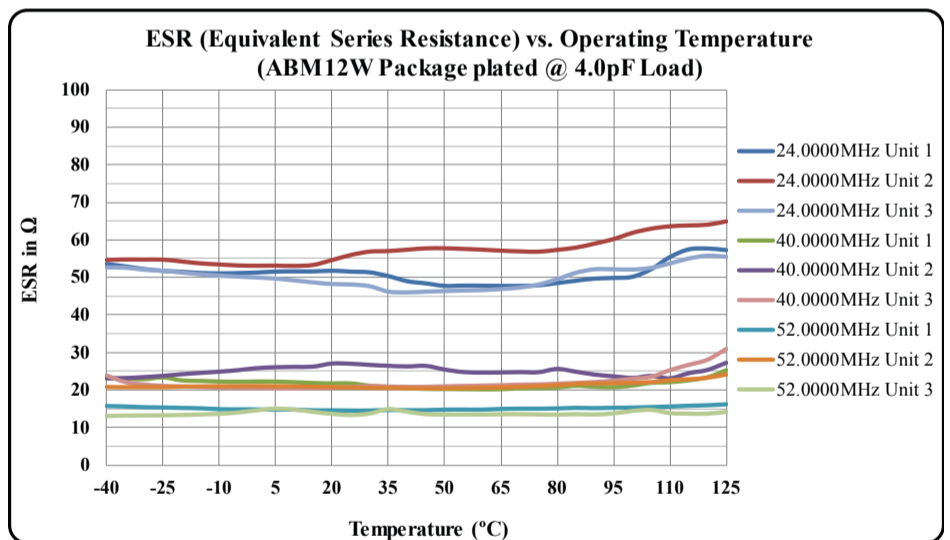
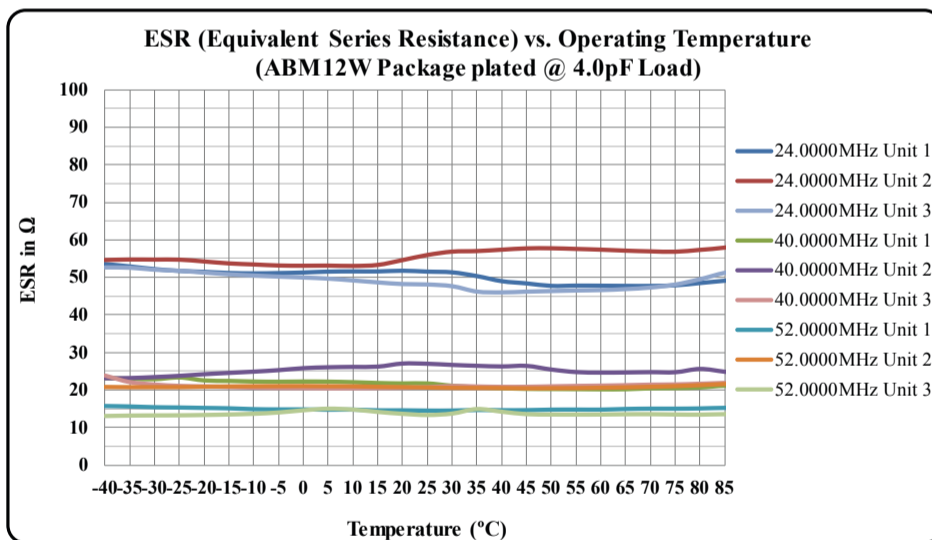
MSL = N/A: NOT APPLICABLE

ABM12W SERIES

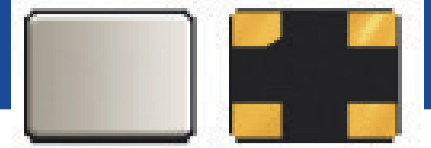
TYPICAL FREQUENCY Vs. TEMPERATURE CHARACTERISTICS



TYPICAL ESR (EQUIVALENT SERIES RESISTANCE) Vs. TEMPERATURE CHARACTERISTICS



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ABM12W SERIES

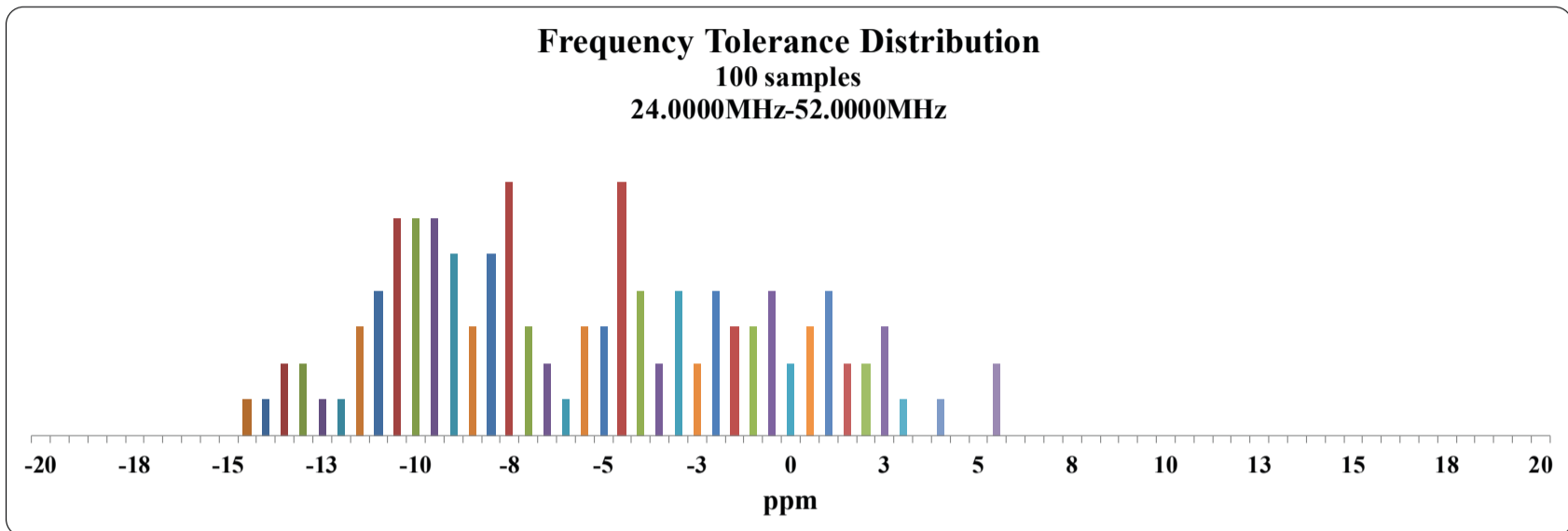
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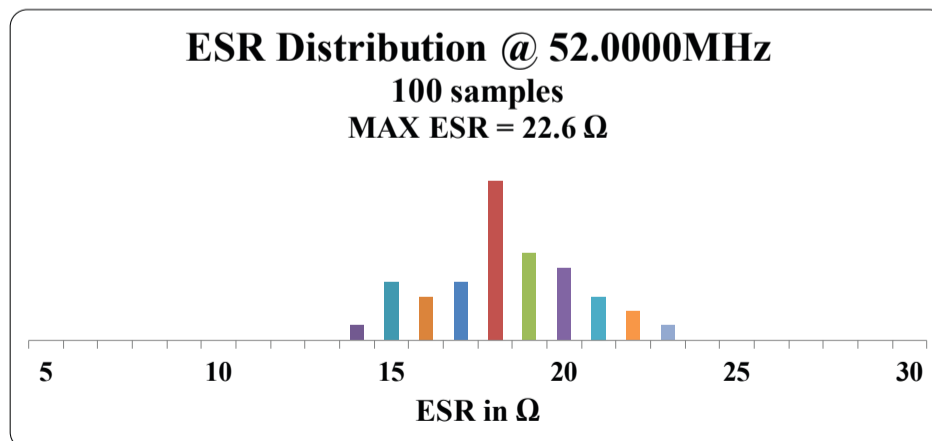
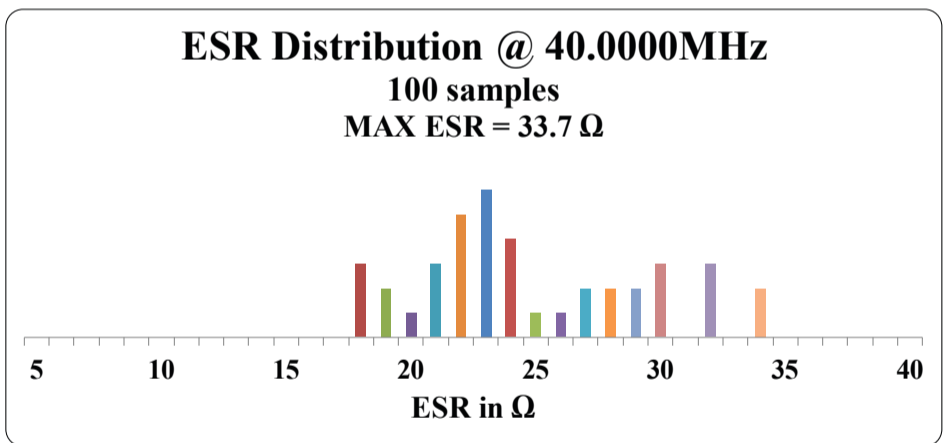
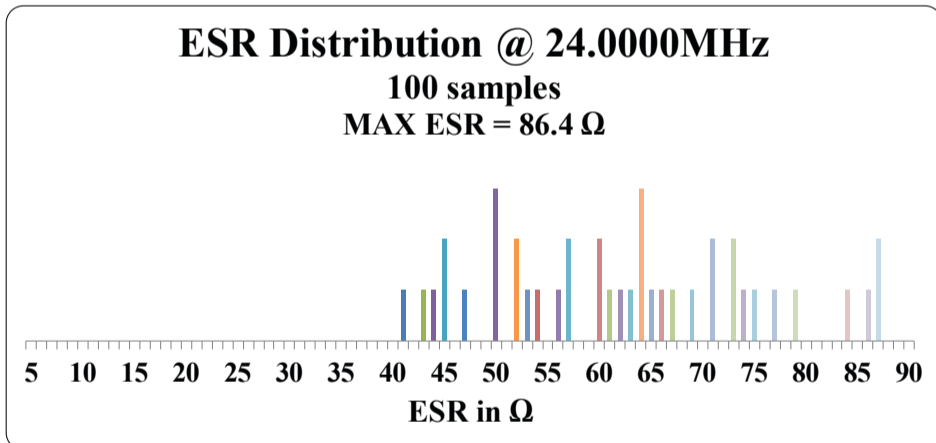
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TYPICAL FREQUENCY TOLERANCE DISTRIBUTION (AT 25°C ± 3°C)



TYPICAL ESR DISTRIBUTION (AT 25°C ± 3°C)



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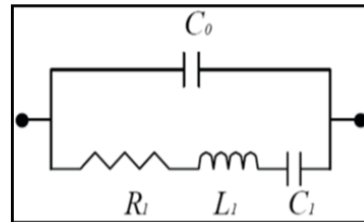
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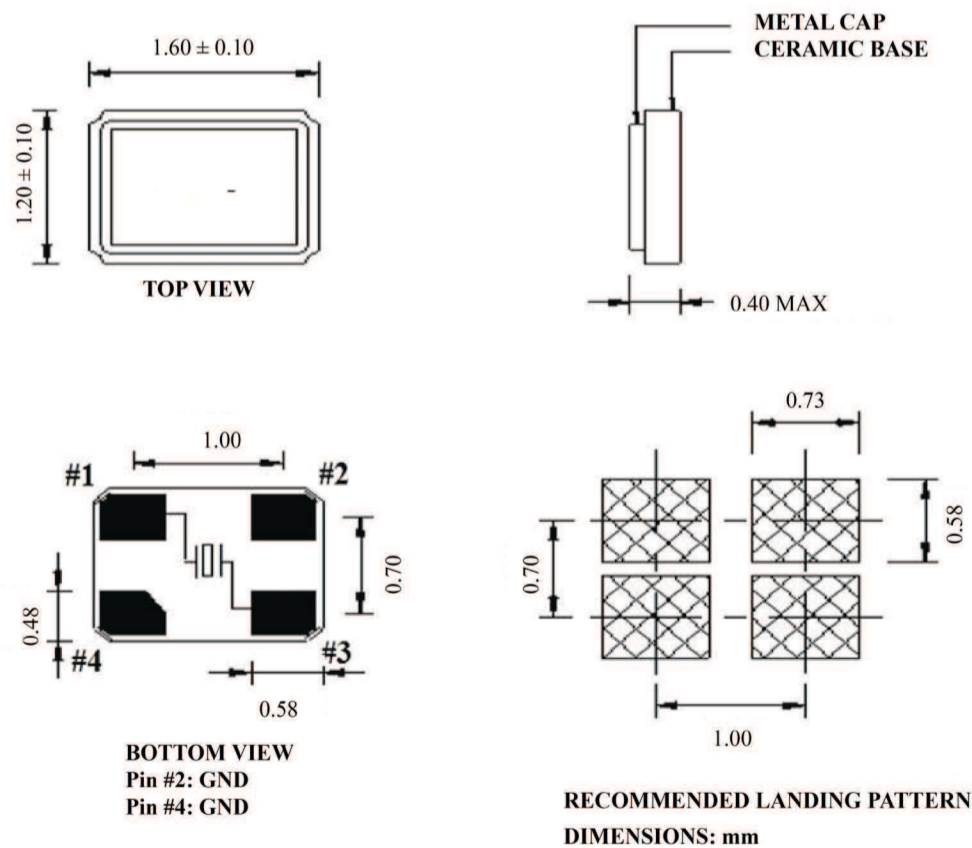
MSL = N/A: NOT APPLICABLE

SPICE MODELS (BASED ON TYPICAL VALUES AT 25°C ± 3°C)



Frequency: 24.0000MHz Plating Load: 4pF				Frequency: 24.0000MHz Plating Load: 6pF			
C0	=	0.58	pF	C0	=	0.49	pF
R1	=	54.20	Ω	R1	=	67.91	Ω
L1	=	52.83	mH	L1	=	50.66	mH
C1	=	0.83	fF	C1	=	0.87	fF
Frequency: 40.0000MHz Plating Load: 4pF				Frequency: 40.0000MHz Plating Load: 6pF			
C0	=	0.65	pF	C0	=	0.63	pF
R1	=	27.21	Ω	R1	=	22.99	Ω
L1	=	10.55	mH	L1	=	10.47	mH
C1	=	1.50	fF	C1	=	1.51	fF
Frequency: 52.0000MHz Plating Load: 4pF				Frequency: 52.0000MHz Plating Load: 6pF			
C0	=	0.63	pF	C0	=	0.64	pF
R1	=	18.03	Ω	R1	=	18.27	Ω
L1	=	5.74	mH	L1	=	5.50	mH
C1	=	1.63	fF	C1	=	1.70	fF

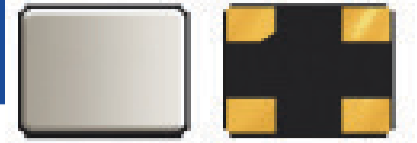
MECHANICAL DIMENSIONS



Note:

Due to material availability the Chamfer could be located on pin #1, 2 or 4. Be advised that the Chamfer location has no impact on the electrical performance of the device.

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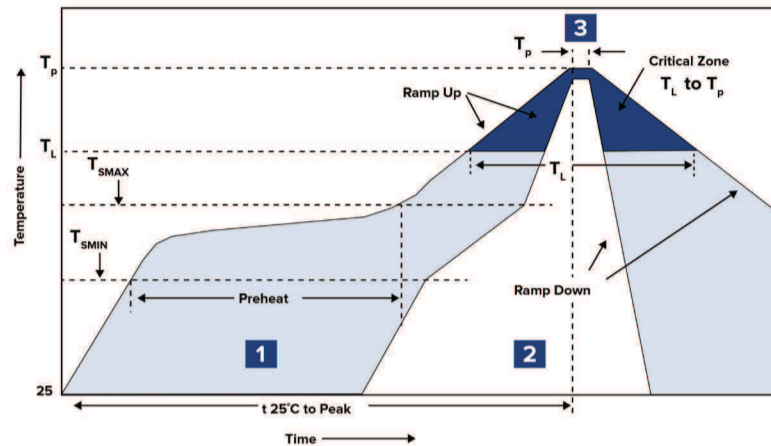
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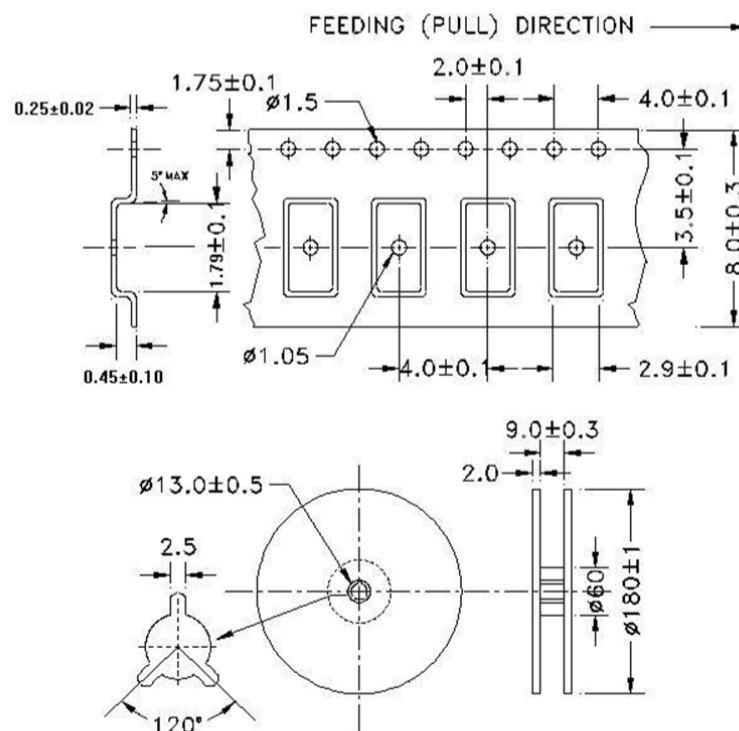
REFLOW PROFILE



Zone	Description	Temperature	Time
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 180°C	60 ~ 120 sec.
2	Reflow	T_L 217°C	45 ~ 90 sec.
3	Peak Heat	T_p 260°C MAX	10 sec.

PACKAGING

T3: Tape and reel (3,000 pcs/reel)



DIMENSIONS: mm