

6450 MHz SMD Dielectric Filter



AFII-DF-0038

Request Samples



Check Inventory



9.6 x 4.1 x 3.0 mm
RoHS Compliant
MSL Level = N/A

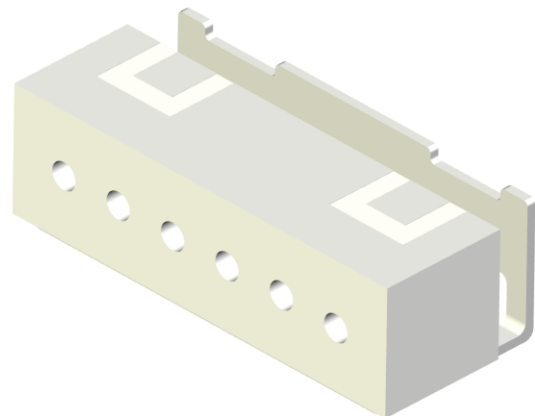
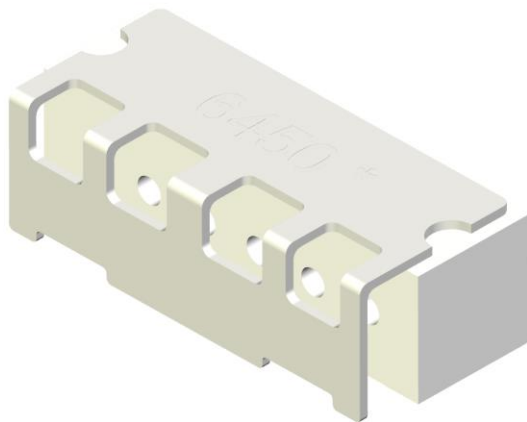
Features

- Bandpass Dielectric Filter with 1050 MHz bandwidth
- Surface Mount 9.6 x 4.1 x 3.0 mm package
- Single-Ended Input and Output
- Excellent selectivity with high out-of-band rejection
- RoHS Compliant

Applications

- WiFi 6E/7 Access Points and Routers
- Industrial IoT
- Enterprise Networks
- 6 GHz (U-NII-5 / U-NII-6 / U-NII-7)

Product Image



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Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	6450.0	-	MHz	
Bandwidth	-	1050	-	MHz	5925 – 6975 MHz
Insertion Loss	-	1.27	3.1	dB	5925 – 6975 MHz
VSWR	≤ 2.0				5925 – 6975 MHz
Amplitude Ripple	-	-	2.2	dB _{p-p}	5925 – 6975 MHz
Attenuation	57	-	-	dB	500 ~ 5150 MHz
	55			dB	5150 ~ 5725 MHz
Input Power			3	W	
Source Impedance ⁽¹⁾ (single ended)	-	50	-	Ω	
Load Impedance ⁽¹⁾ (single ended)	-	50	-	Ω	

Notes: (1) No matching network needed (Ref. Testing Environment Circuit as shown in “Measurement Circuit” section).

Mechanical Specification

Parameters	Specifications
Dimension	9.6 x 4.1 x 3.0 mm
Mounting Type	SMD Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
RoHS Compliant	Yes

Ordering Information

Part Number	Description
AFII-DF-0038	6450 MHz SMD Dielectric Filter
AFII-DF-0038-EVB	6450 MHz SMD Dielectric Filter Evaluation Board



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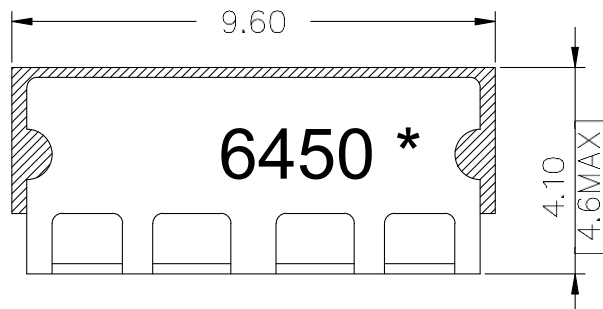
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RoHS Compliant

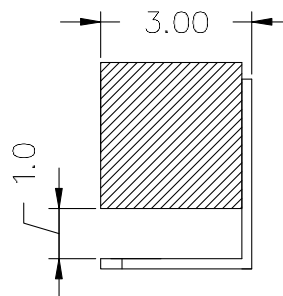
MSL Level = N/A

Product Dimensions

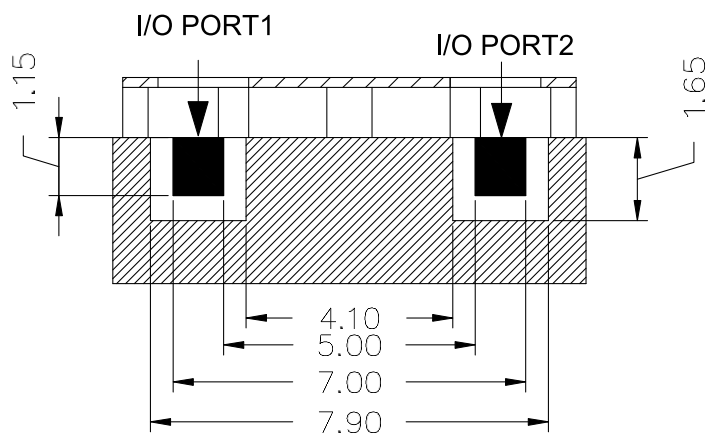
TOP VIEW



SIDE VIEW



BOTTOM VIEW



TOLERANCE : ± 0.20

UNIT: mm

*: MONTH CODE

Unit : mm

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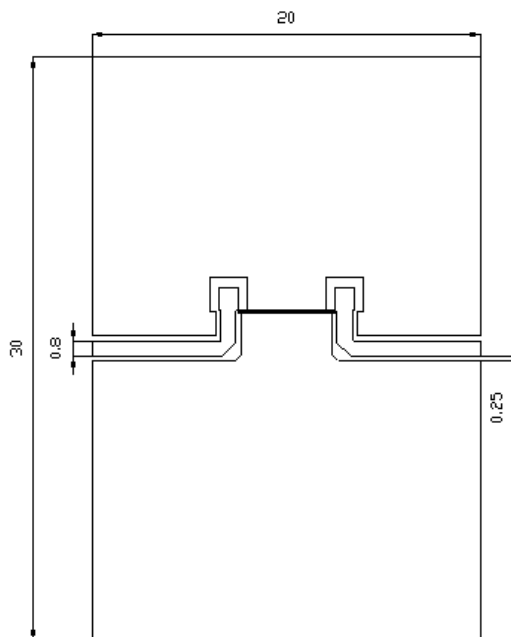
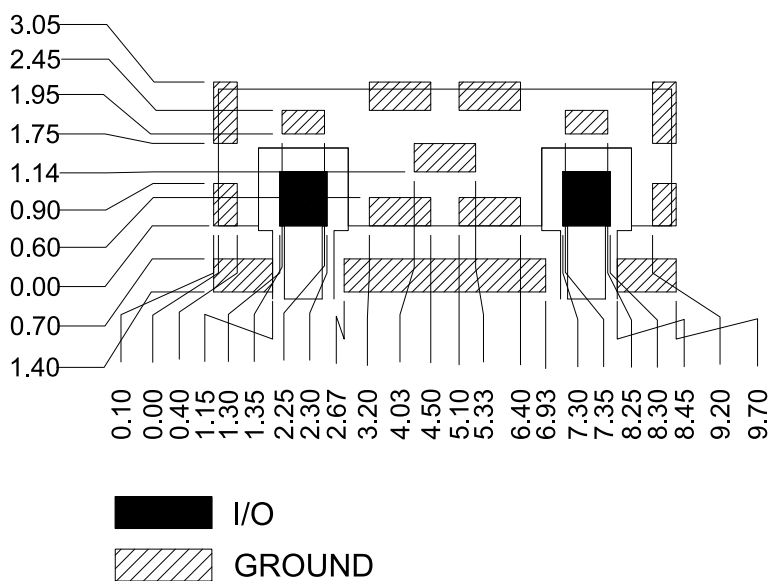
9.6 x 4.1 x 3.0 mm

RoHS Compliant

MSL Level = N/A

PCB Footprint & EVB

Please reach out to us for more detailed layout info via [Abracon online support](#)



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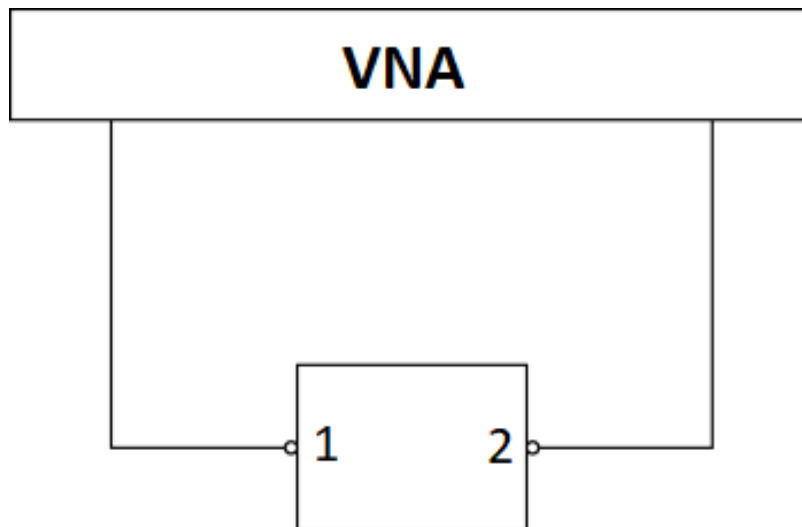
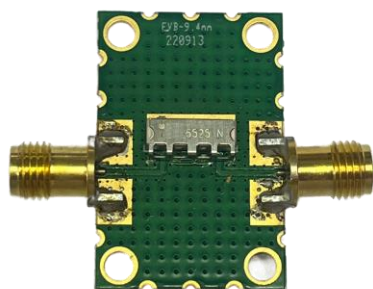


9.6 x 4.1 x 3.0 mm

RoHS Compliant

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Measurement Circuit



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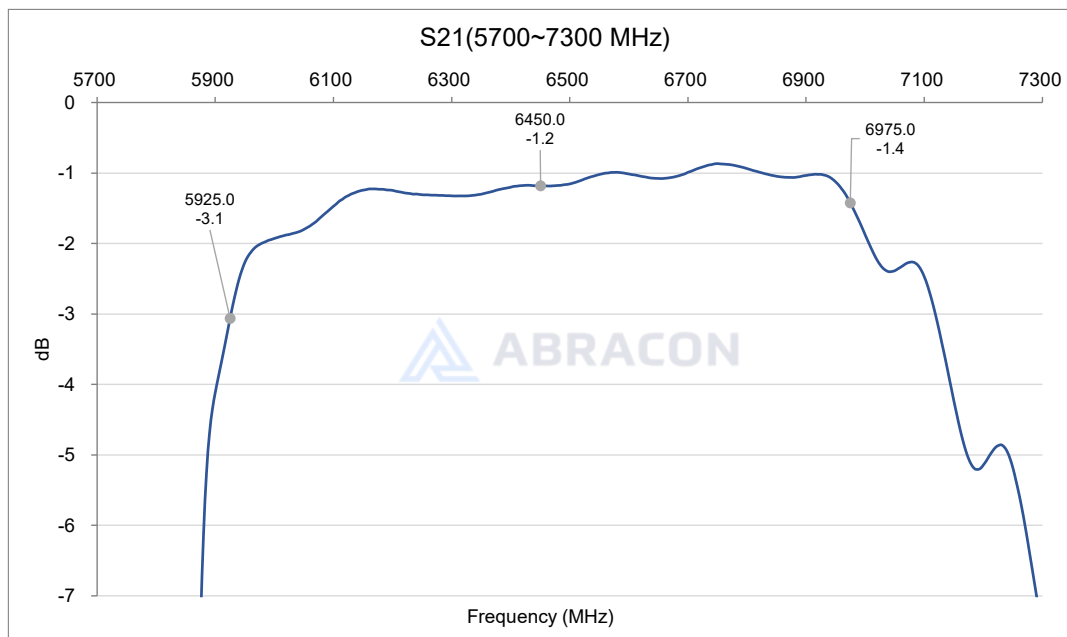
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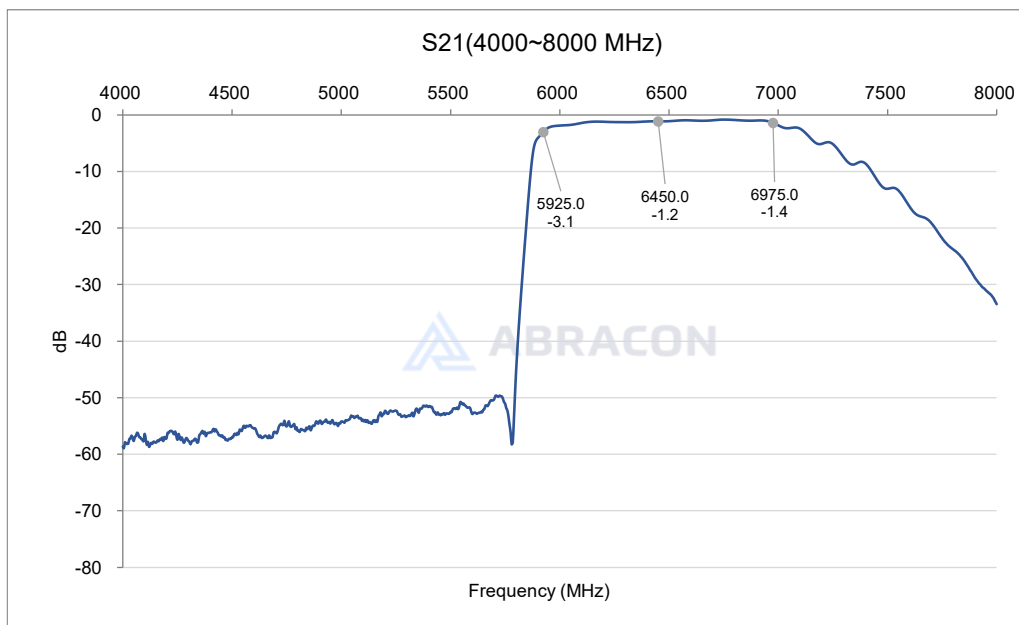
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Frequency Characteristics

S21 narrow band



S21 wide band



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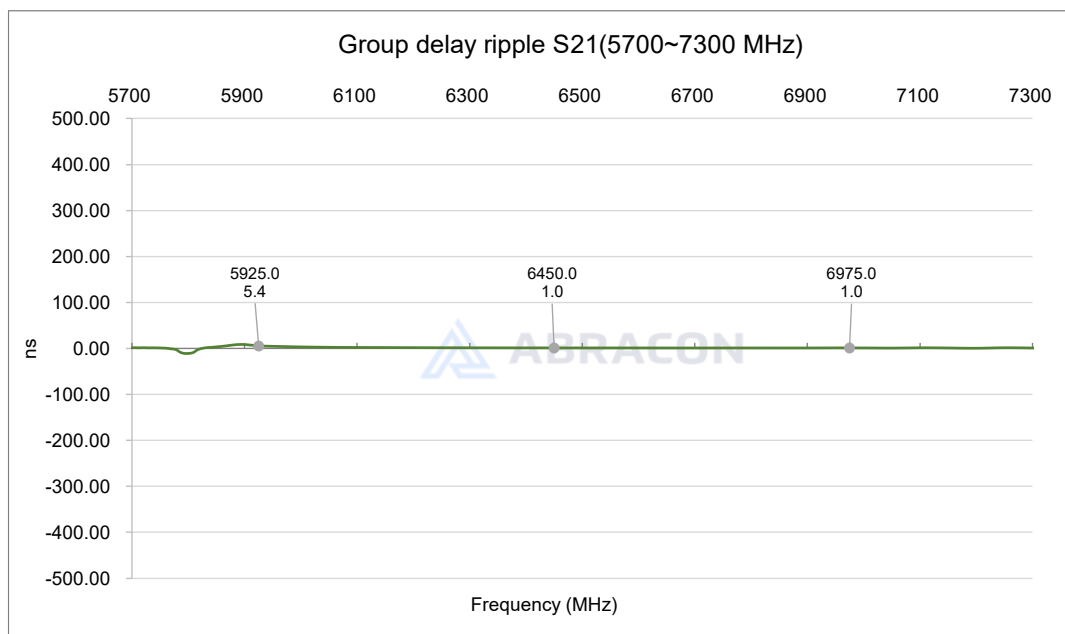


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Group Delay Ripple



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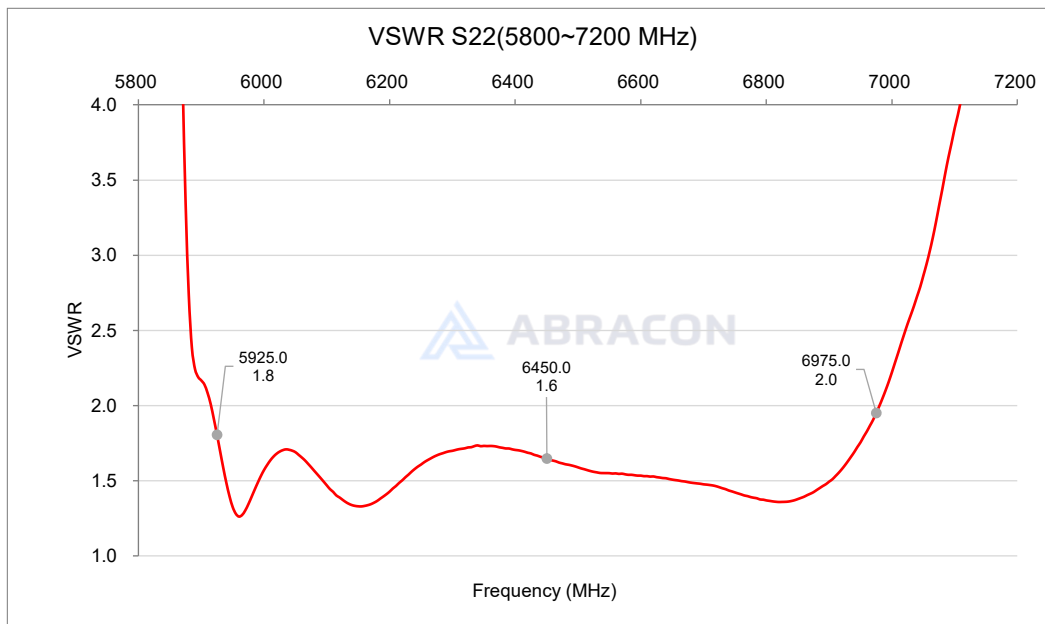
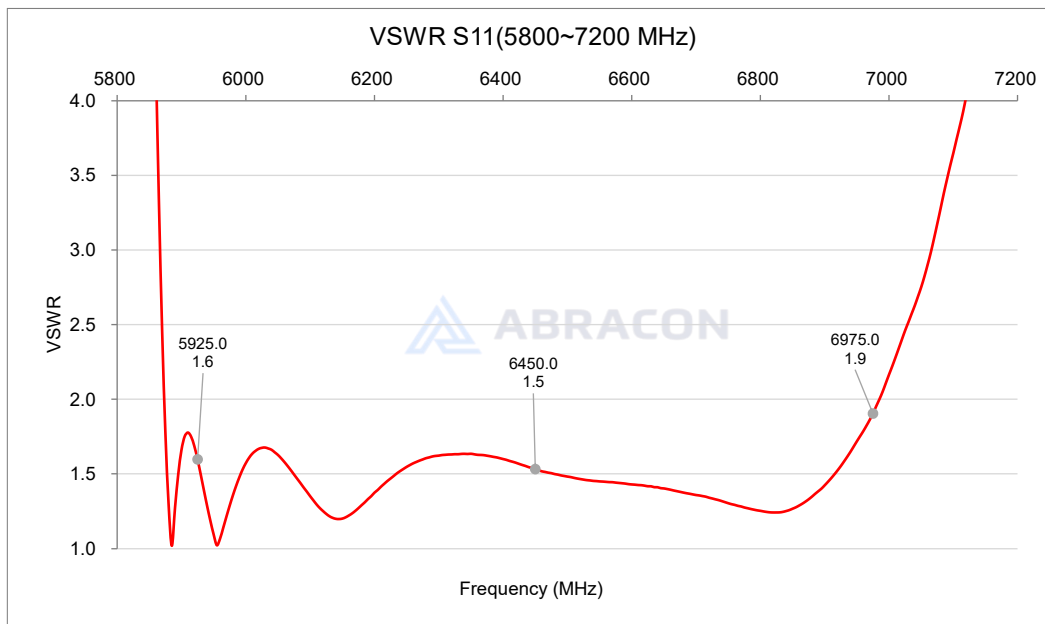


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VSWR (S11 & S22)



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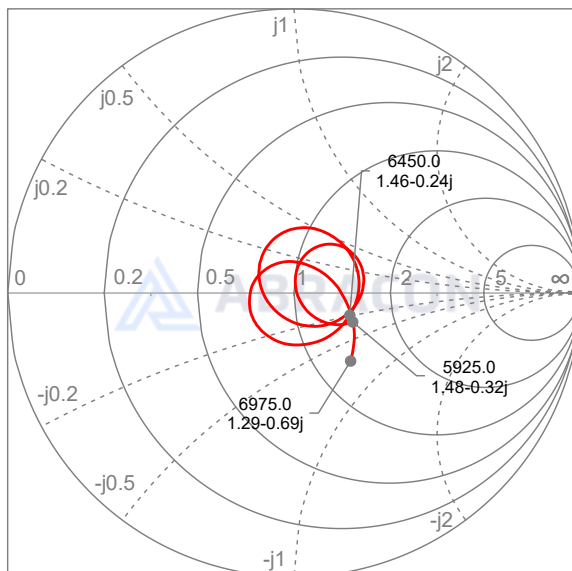
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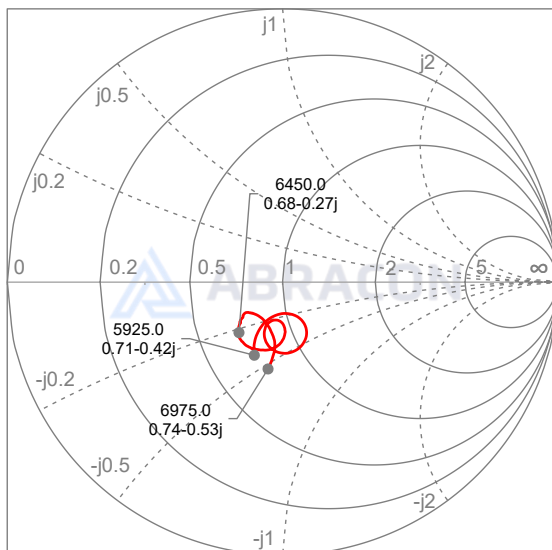
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Smith Chart (S11 & S22)

Smith chart S11 (5925~6975MHz)



Smith chart S22 (5925~6975MHz)



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Reflow Profile [JEDEC J-STD-020]

Solder Paste: Ag3.0/Cu0.5/Sn

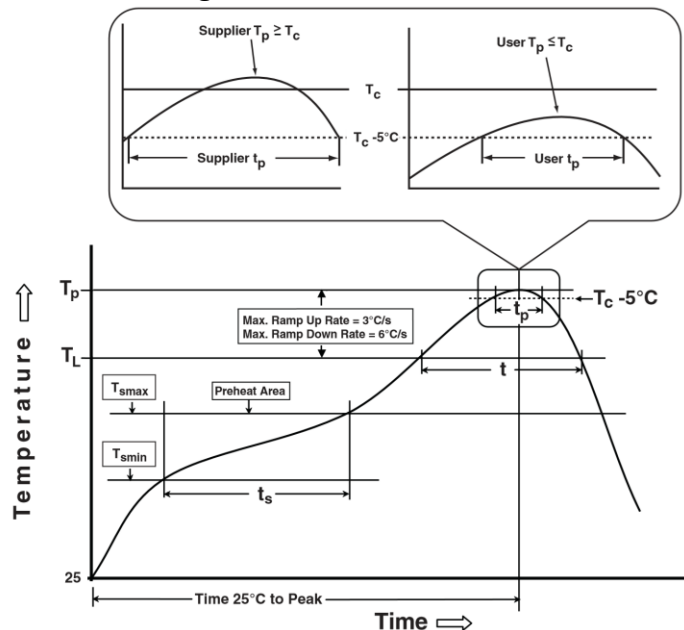


Table 1

SnPb Eutectic Process

Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥ 350
<2.5mm	235°C	220°C
≥ 2.5mm	220°C	220°C

Table 2

Pb-Free Process

Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	240°C	240°C	240°C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 – 120 sec.	60 – 120 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	220°C
Time at Liquidous (T_L)	60 – 150 sec.	30 – 100 sec.
Peak package body temperature (T_p)*	See Table 1	See Table 2
Time (T_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	5 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	2-6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

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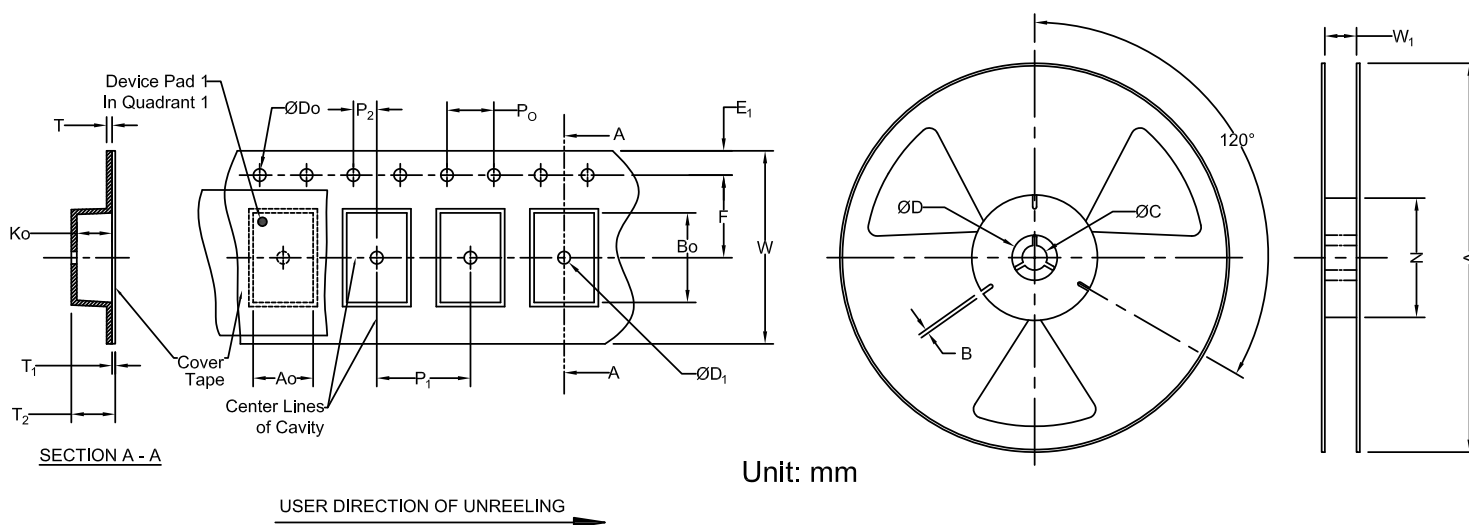
Packaging

Per plastic reel 1500 pieces of dielectric ceramic part

Per inner box 1 reel

Per package 7 inner boxes

Tape & Reel Dimension



Carrier Tape Specifications (mm)

E ₁	P ₀	F	P ₁	P ₂	D ₀	W	A ₀	B ₀	K ₀	Reel Qty
1.75 ± 0.1	4.0 ± 0.1	11.5 ± 0.1	12.0 ± 0.1	2.0 ± 0.1	1.5 ± 0.1	24.0 ± 0.2	4.7 ± 0.1	10.0 ± 0.2	3.3 ± 0.1	1,500

Reel Specifications (mm)

A	B	W ₁	N	C
330 ± 3	2.0 ± 0.5	26max	80min	13 ± 0.5

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