

Multi-layer Chip Diplexer



ADID-R-0005

Request Samples 

Check Inventory 

1.0 x 0.5 x 0.38 mm

RoHS Compliant

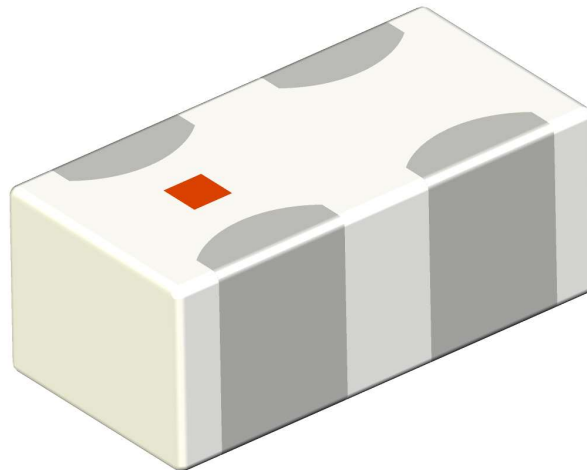
Features

- LTCC diplexer supporting 2400~2500 / 4900~5950 MHz
- Small Form Factor 1.0 x 0.5 x 0.38 mm
- Low Insertion Loss 0.6 dB
- RoHS Compliant

Applications

- Wi-Fi Speakers and Sound Bars
- Video Streaming and Network Cameras
- VR Head Mount Displays
- Car Infotainment Systems
- Broadband Gateways
- Aircraft equipment
- Transportation equipment (automobiles, trains, ships etc.)
- Data-processing equipment

Product Image



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Electrical Specifications

Parameters	Specification		Units	Notes
Center Frequency	2400-2500	4900-5950	MHz	
Insertion Loss (Max)	0.60	0.95	dB	@25°C
Absolute Attenuation	23dB min. at 4800~6000 MHz 23 dB min. at 7200~7500 MHz	25 dB min. at 30~2400 MHz 27 dB min. at 2400~2500 MHz 23 dB min. at 2500~2690 MHz 20 dB min. at 9800~11900 MHz	dB	
Isolation (Min)	27 dB min. at 2400~2500 MHz 23 dB min. at 4900~5950 MHz		dB	
Return Loss (Min)	14	12	dB	@25°C
Power Capacity	2.0		W	-

Mechanical Specifications

Parameters	Specifications
Filter Dimension	1.0 x 0.5 x 0.38 mm
Mounting Type	SMD Mount

Environmental Specifications

Parameters	Specifications
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-10°C ~ +45°C
Humidity	70% R.H.
RoHS Compliant	Yes

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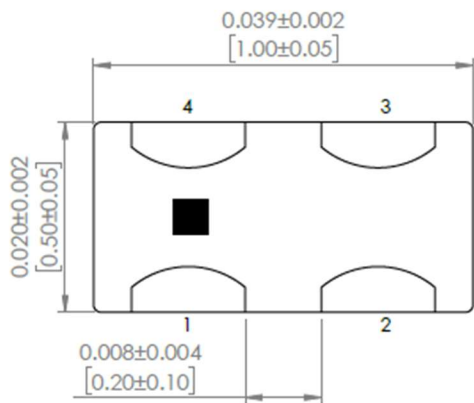
Ordering Information

Part Identification

ADID-R-005

Packaging
Blank: Bulk
T: Tape & Reel

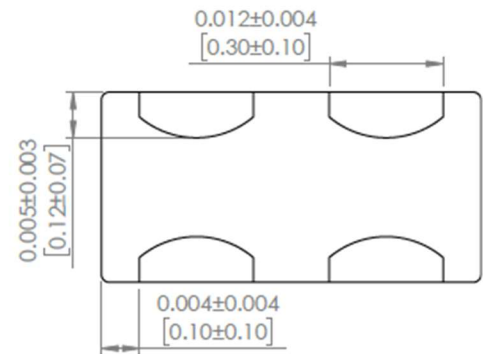
Package Dimensions & PCB Footprint



TOP VIEW



SIDE VIEW



BOTTOM VIEW



FRONT VIEW

Pin #	Function
1	Common Port
2	GND
3	Higher Port
4	Lower Port

DIMENSIONS: INCHES [mm]

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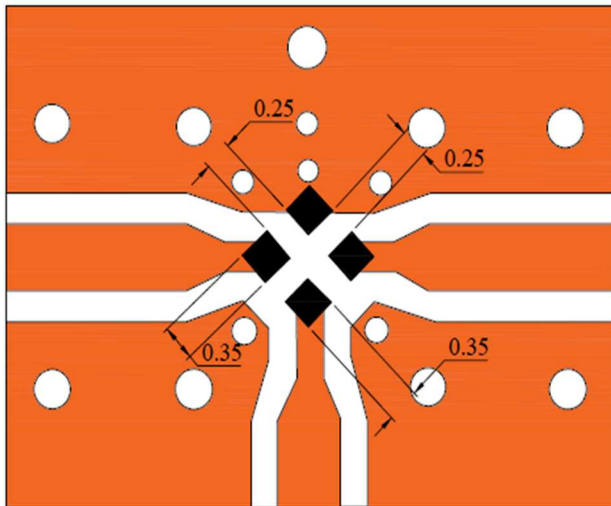
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RoHS Compliant

Recommended Footprint (PCB Layout)



Solder Resist



Land



Through-hole ($\varnothing 0.2$ and 0.35)

Units: mm

Note: Line width to be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

The transmission line is Gound Coplanar Waveguide (GCPW)

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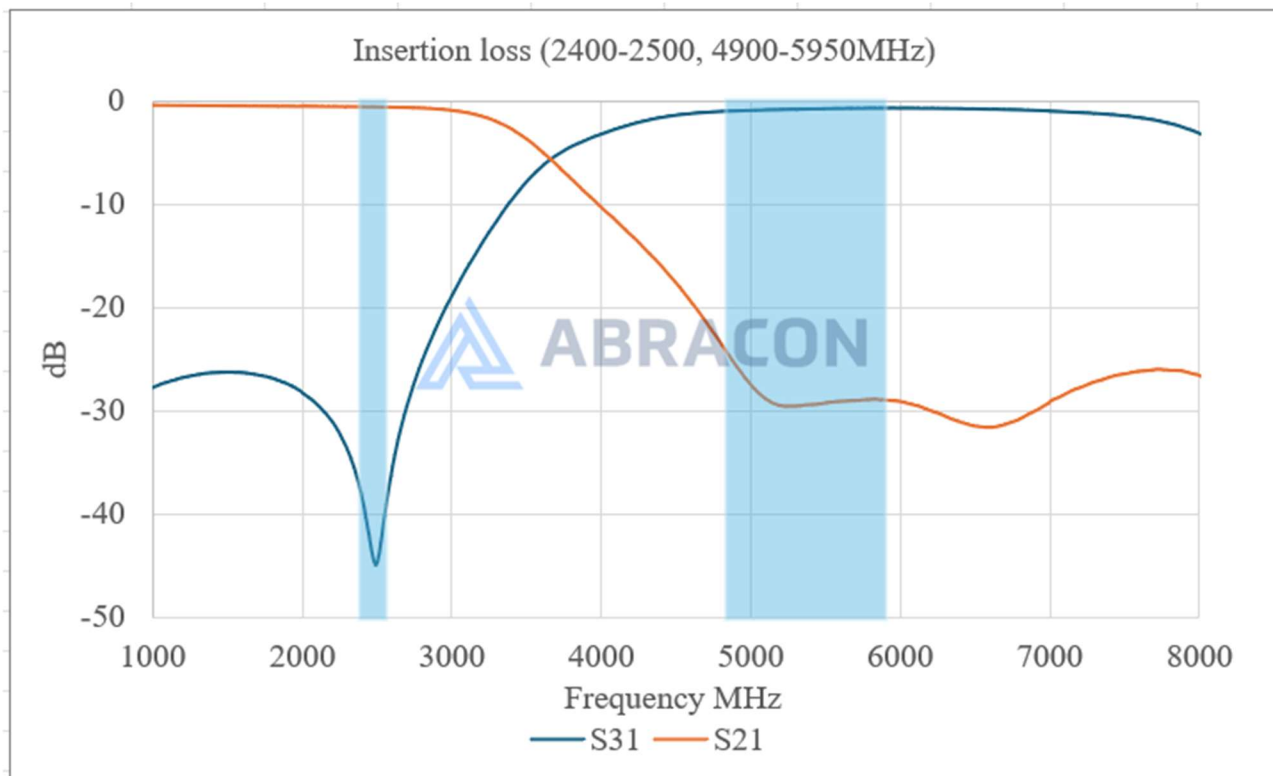
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Frequency Characteristics

Insertion Loss (S21 & S31) (2400-2500MHz,4900-5950MHz)



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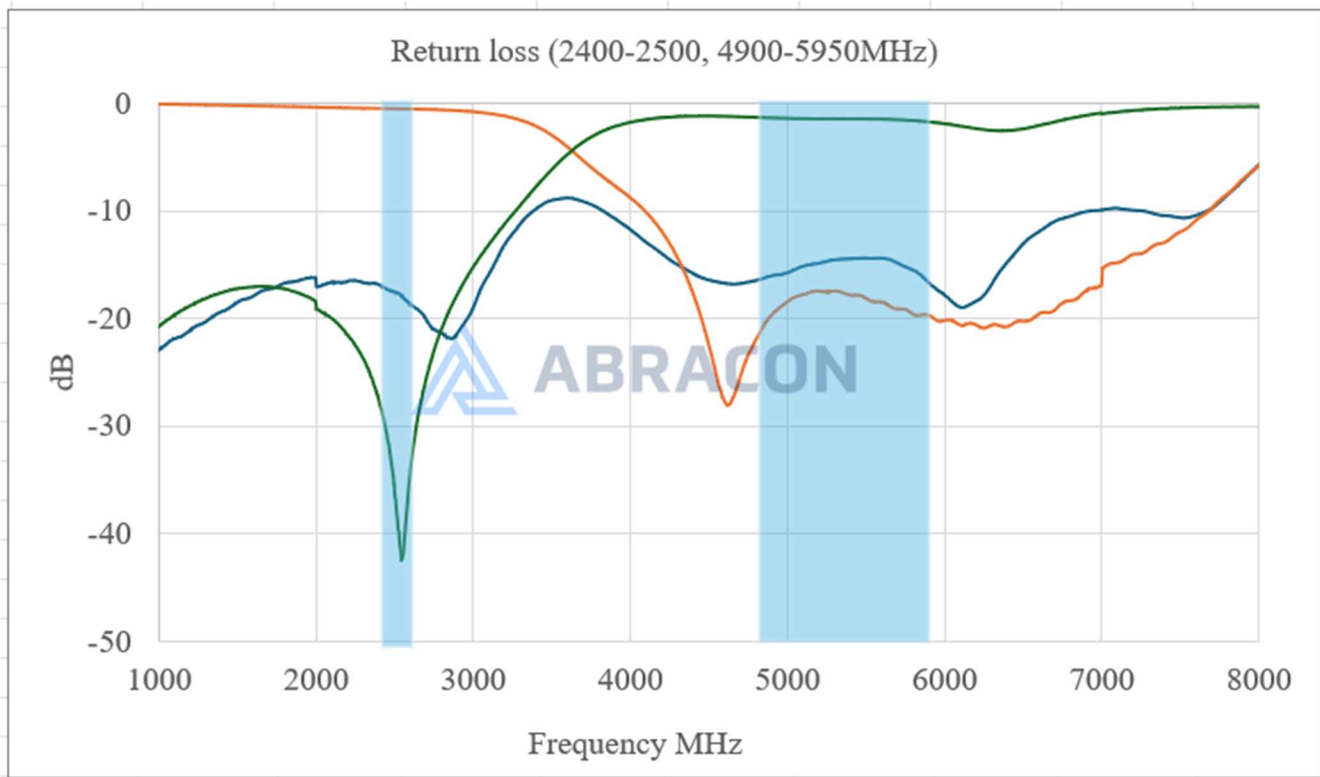
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Return Loss (S11 & S22 & S33) (2400-2500MHz,4900-5950MHz)



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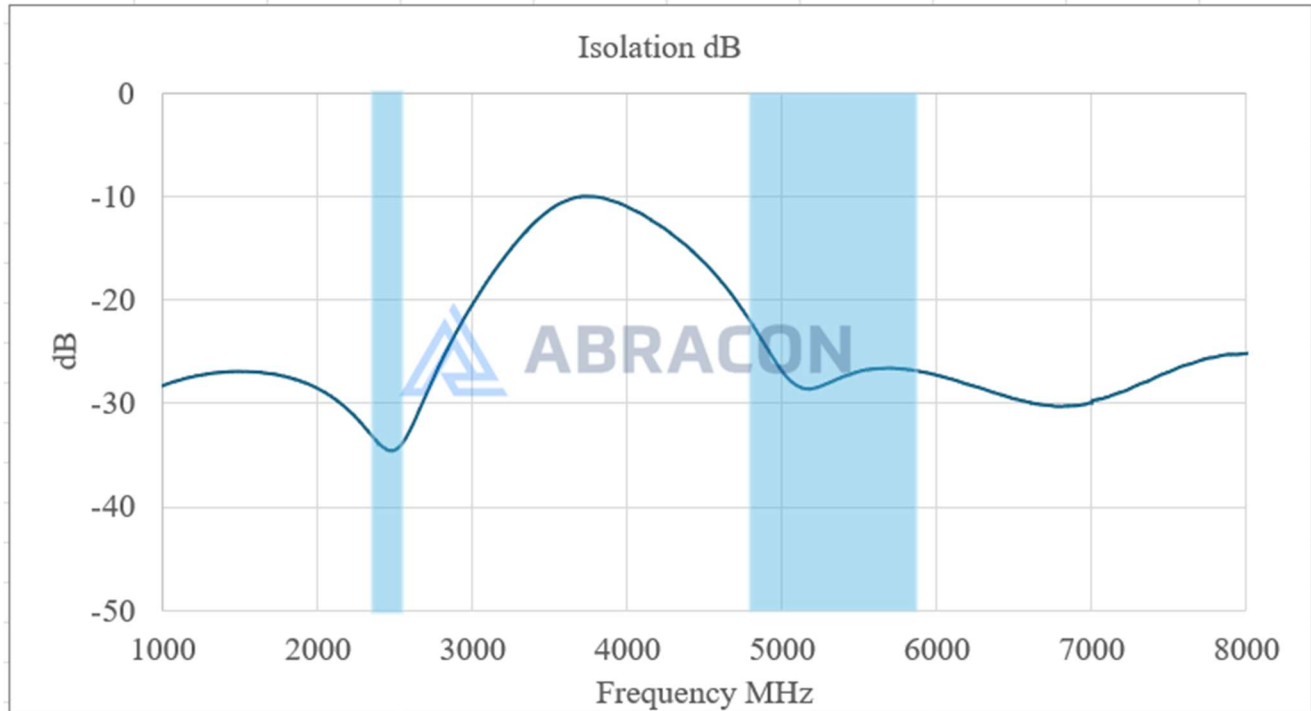
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Isolation (S32) (2400-2500MHz,4900-5950MHz)



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Reflow Profile

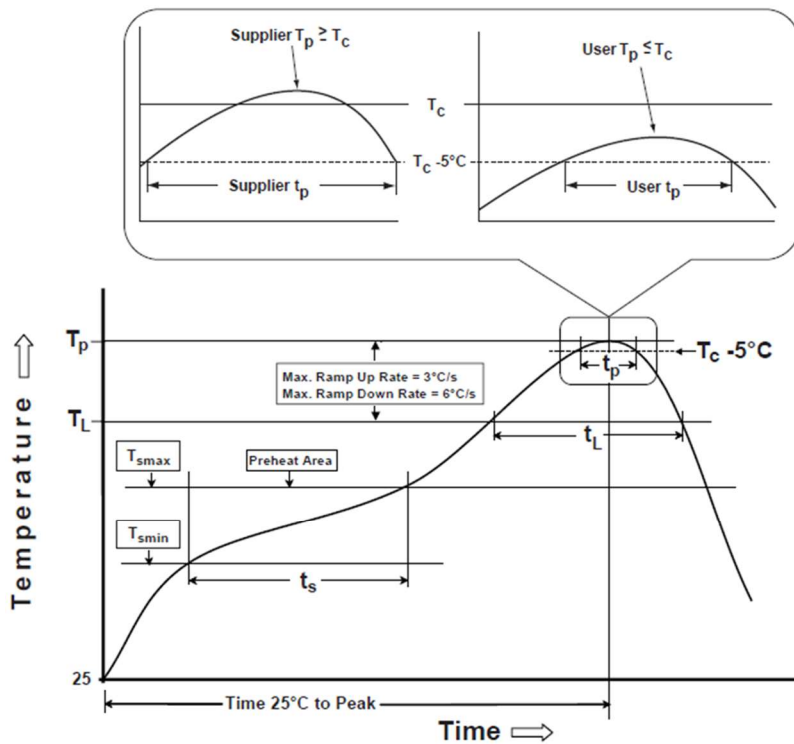


Table 1

SnPb Eutectic Process

Classification Temperatures (T_C)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	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
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °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	217°C
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 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.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	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 supplier minimum and a user maximum.

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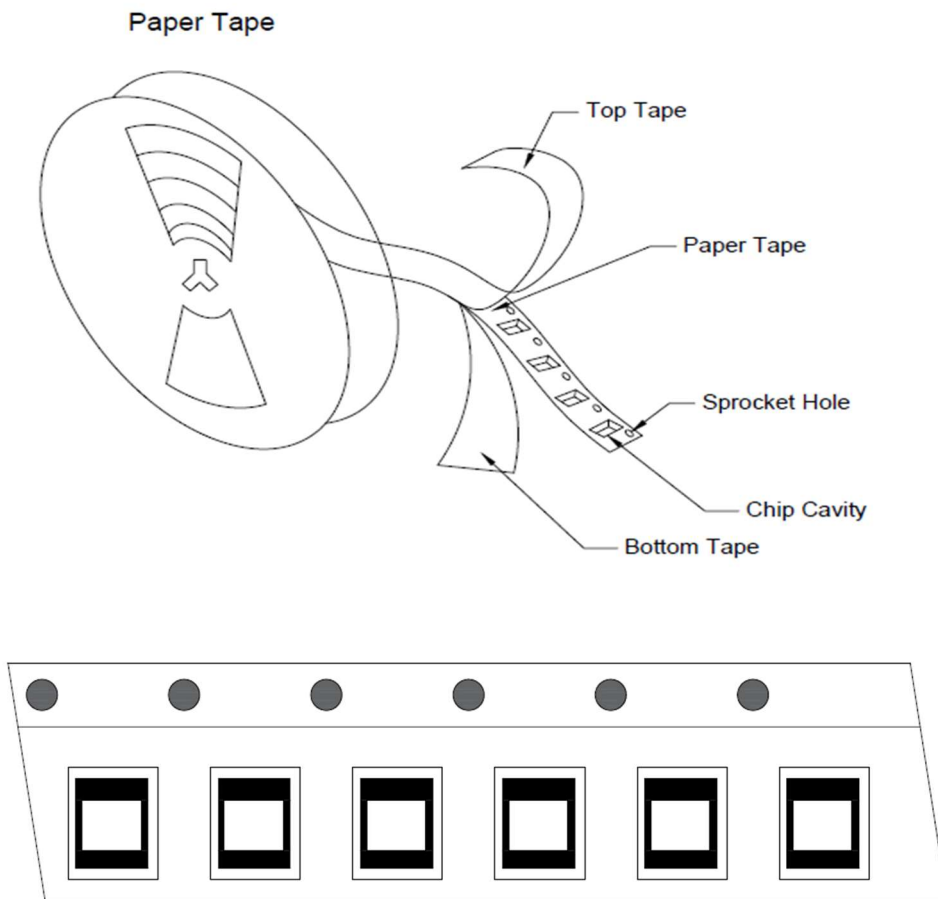
Packaging

Tape Carrier Packaging:

Tape carrier packaging quantity please see the following table:

Type	1005[0402]
Tape	Paper Tape
Quantity	10K

Taping Drawings (Unit: mm)



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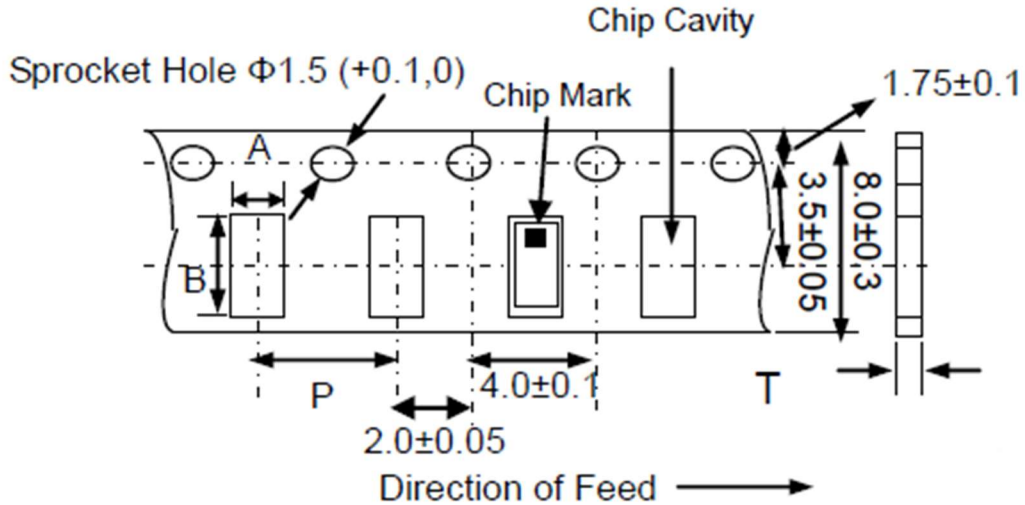
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Taping Dimensions (Unit: mm)



Chip Thickness	A	B	P	T max
0.38 ± 0.05	0.62 ± 0.03	1.12 ± 0.03	2.0 ± 0.05	0.6

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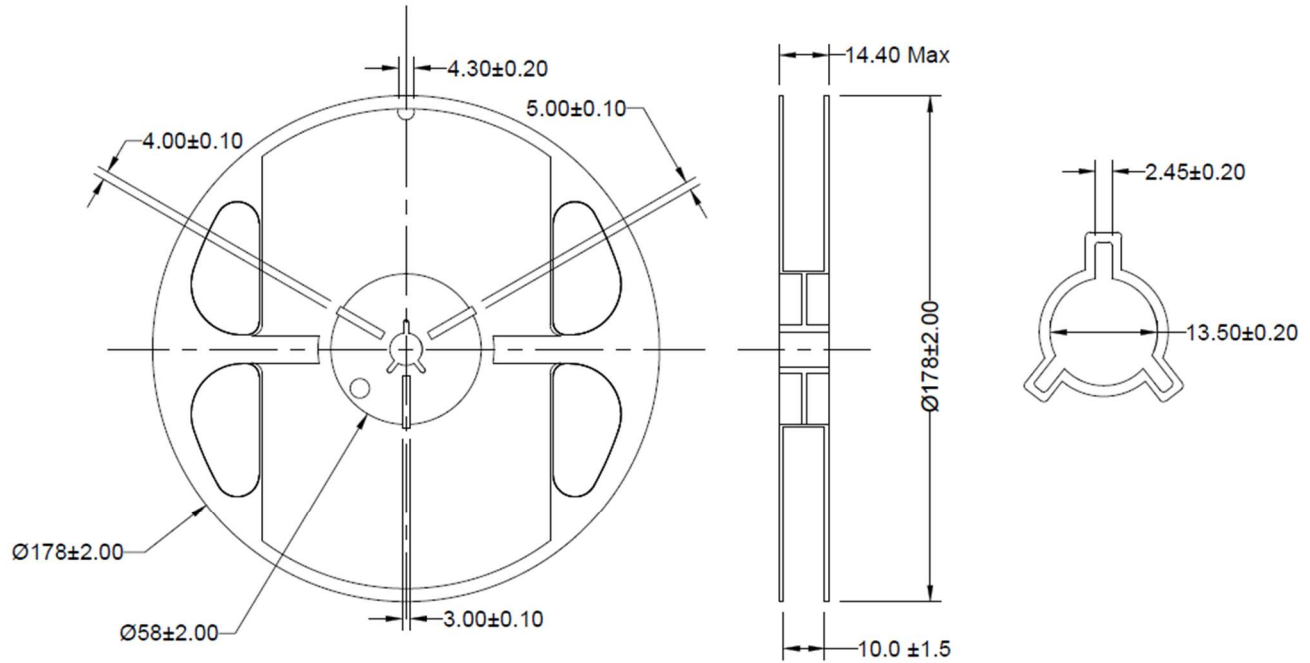
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Reel Dimensions (Unit: mm)



Unit: mm

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