Approval Sheet
LTCC Device

Product Name : Laminated Ceramic Diplexer

Description: LTCC Diplexer 1608(0603)

For 1570-1610 MHz / 2400-5900 MHz Working Frequency

■ Features

High Isolation and Low Insertion Loss.

■ Applications

GPS & GLONASS 1.57-1.61GHz and ISM 2.4GHz / 5GHz band separation.

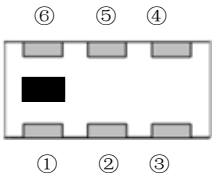
■ Part Numbering:

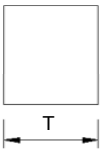
AFLT	**1608**	**D**	**1524**	**F**
(1)	**(2)**	**(3)**	**(4)**	**(5)**

1)Product Type: LTCC Diplexer 1608
(2) Size Code: 1.6x0.8mm
(3) Type Code: LTCC Diplexer
(4) Frequency: 1570-1610 MHz / 2400-5900 MHz .
(5) Type Code: F

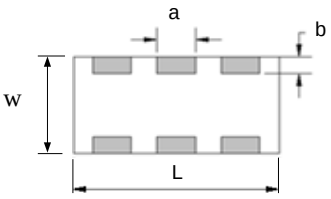
■ Dimensions

Top View

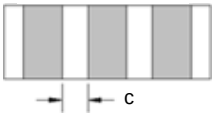




Bottom View



Side View



Mark	L	W	T	a	b	c
Dimensions	1.6±0.1	0.8±0.1	0.6±0.1	0.2±0.1	0.15±0.1	0.3±0.1

■ Terminal Pin Definition

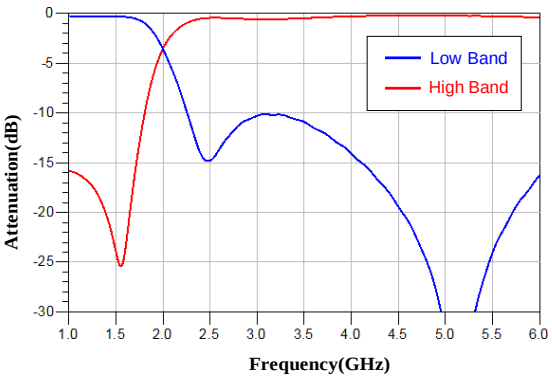
①	**GND**	②	**Common**	③	**GND**
④	**Low-band**	⑤	**GND**	⑥	**High-band**

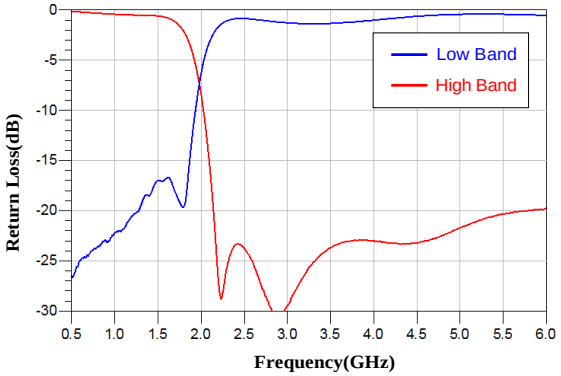
■ Target Specifications at T= -40ºC~+85ºC

Pass Band (MHz)	Insertion Loss (dB)	Return Loss (dB)	Attenuation (dB)	Isolation (dB)
1570-1610	0.45 max.	10 min.	12 min.@2.4-2.5GHz 12 min.@4.9-5.9GHz	12 min.@2.4-2.5GHz 12 min.@4.9-5.9GHz
2400-2500 4900-5900	0.65 max. 0.60 max.	10 min. 10 min.	20 min.@1.57-1.61GHz	20 min.@1.57-1.61GHz

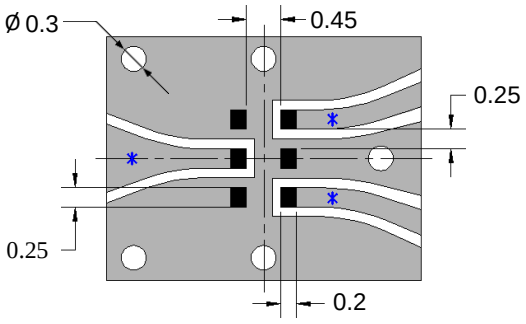
Power Capacity: 3W
MSL：1

■ Measured Frequency Characters at T= 25±5ºC





■ Soldering Land Pattern



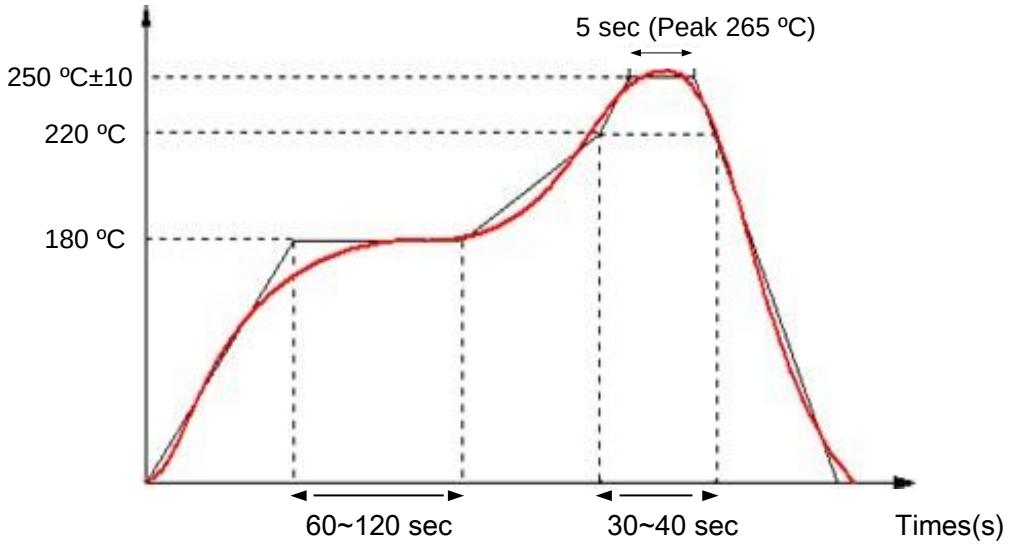
Land

Solder Resist

Unit : mm

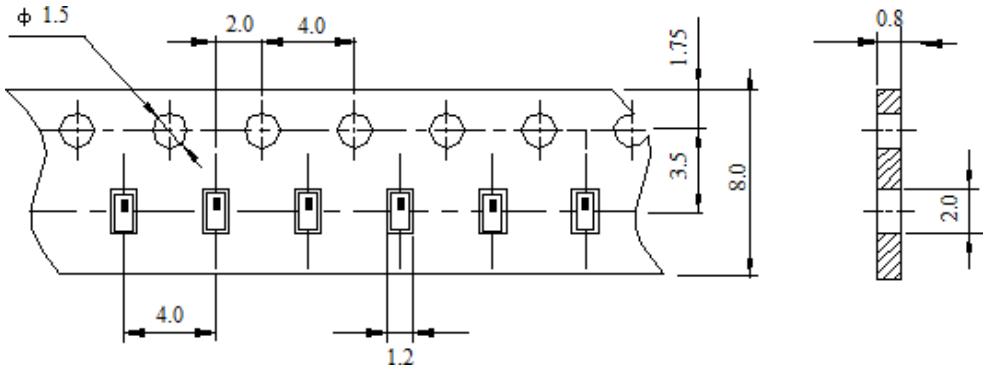
✳ Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

■ Reflow Soldering Standard Condition



■ Packaging and Dimensions 1608(0603)

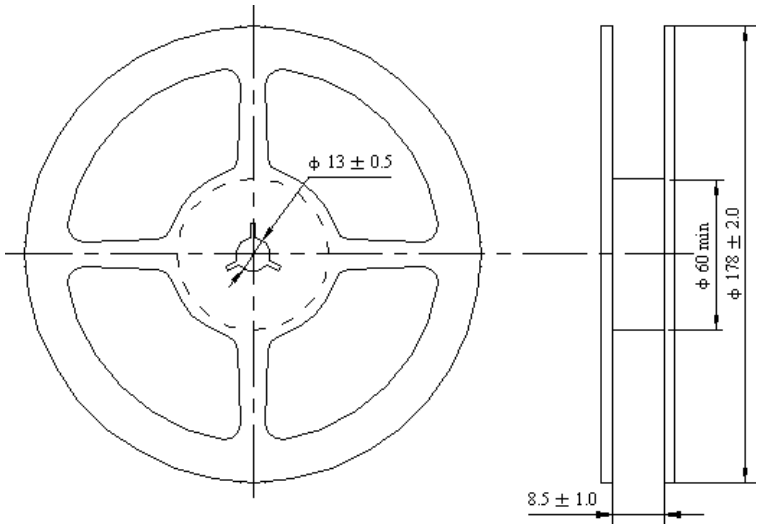
Plastic Tape



Remarks for Package

Reserve a length of 200mm for the trailer of the carrier and 200 mm for the leader of the carrier and further 200mm of cover tape at the leading part of the carrier.

Reel (6000 pcs/Reel)



■ Storage

Product should be used within six months of receipt.

Storage Temperature Range : -55~105 degree C, Humidity : <85%RH

■ Reliability Test

Test item	Test condition / Test method	Specification
Solderability IEC 60068-2-58 GB/T2423.28	*Solder bath temperature：240±5℃ *Immersion time：2±0.5 sec Solder：Sn96.5Ag3.0Gu0.5 for lead-free.	At least 95% of a surface of each terminal electrode must be covered by fresh solder.
Leaching (Resistance to dissolution of metallization) JIS C5101	*Solder bath temperature：260±5℃ *Leaching immersion time：10±1 sec Solder : Sn96.5 Ag3.0 Gu0.5 for lead-free.	Loss of metallization on the edges of each electrode shall not exceed 25%.
Resistance to soldering heat IEC 60068-2-58 GB/T2423.28	*Preheating temperature：120~150℃, 1 minute. *Solder temperature：260±5℃ *Immersion time：10±1 sec Solder：Sn96.5Ag3.0Gu0.5 for lead-free Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature. Loss of metallization on the edges of each electrode shall not exceed 25%.
Drop Test IEC 60068-2-32 GB/T2423.8 Customer's specification.	*Height：50 cm *Test Surface: Rigid surface of concrete or steel. *Times：6 surfaces for each units；2 times for each side.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Vibration IEC 60068-2-6 GB/T 2423.10	*Frequency：10Hz~55Hz~10Hz(1min) *Total amplitude：1.5mm *Test times：6hrs.(Two hrs each in three mutually perpendicular directions)	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.

Adhesive Strength of Termination IEC60068-2-21 GB/T 2423.6	*Pressurizing force： 5N(≦0603)； 10N(>0603) *Test time:10±1 sec	No remarkable damage or removal of the termination.
Bending test IEC 60068-2-21 GB/T 2423.29	The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 2mm and then pressure shall be maintained for 10±1 sec. Measurement to be made after keeping at room temperature for 24±2 hours.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Temperature cycle IEC60068-2-14 GB/T 2423.22	30 minutes at-40℃±2℃. 10~15 minutes at room temperature. 30minutes at +85℃±2℃. 10~15 minutes at room temperature. Total 100 continuous cycles Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
High temperature IEC 60068-2-2 GB/T2423.2	*Temperature：85±2℃. *Test duration：500+24/-0 hours. Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics.
Humidity (steady conditions) IEC60068-2-3 GB/T 2423.3	*Humidity：85±5%R.H. *Temperature：85±2℃. *Time：500+24/-0 hrs. Measurement to be made after keeping at room temperature for 24±2 hrs ※ 200hrs measuring the first data then 300hrs data.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.
Low temperature IEC 60068-2-1 GB/T2423.1	*Temperature：-40±2℃. *Test duration：500+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics at the room temperature.