

Datasheet of LTCC Device

RoHS & Halogen Free & REACH Compliance

Laminated Ceramic Diplexer

2400-2500 MHz / 5150-7125 MHz

P/N: FLT18D24255171L-7276B

LTCC Diplexer 1608 (BS 0603) Size

For 2400-2500 MHz / 5150-7125 MHz Working Frequency

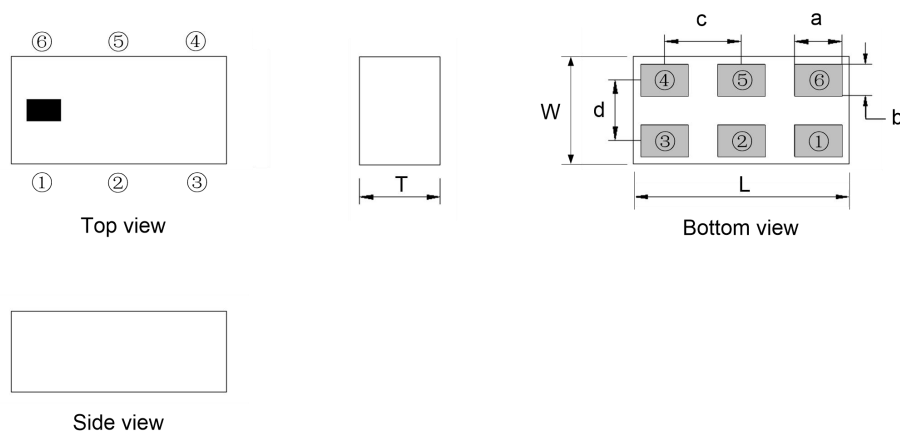
1. Features

High Isolation & Low Insertion Loss.

2. Applications

Wi-Fi 2400 - 2500 / 5150 - 7125 MHz working frequency.

3. Shapes & Dimensions



Mark	L	W	T	a	b	c	d
Dimensions (mm)	1.6±0.1	0.8±0.1	0.7 max	0.35±0.1	0.23±0.1	0.57±0.1	0.45±0.1

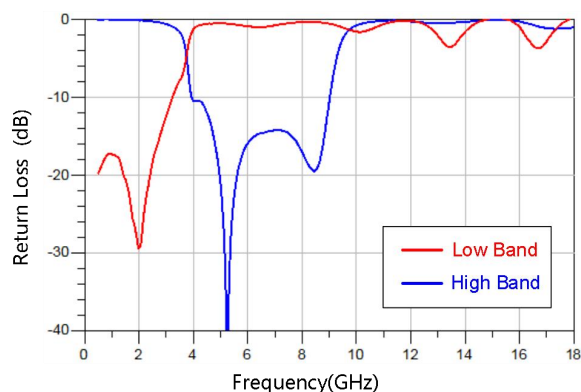
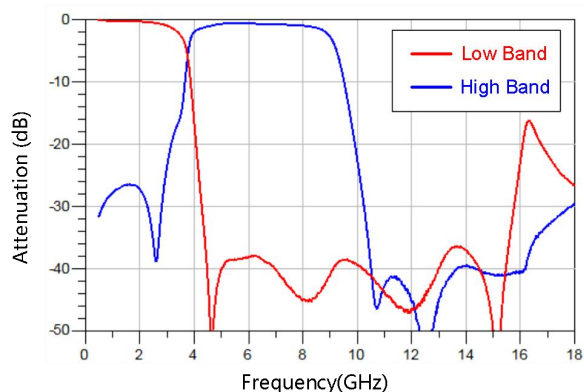
4. Terminal Pin Definition

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

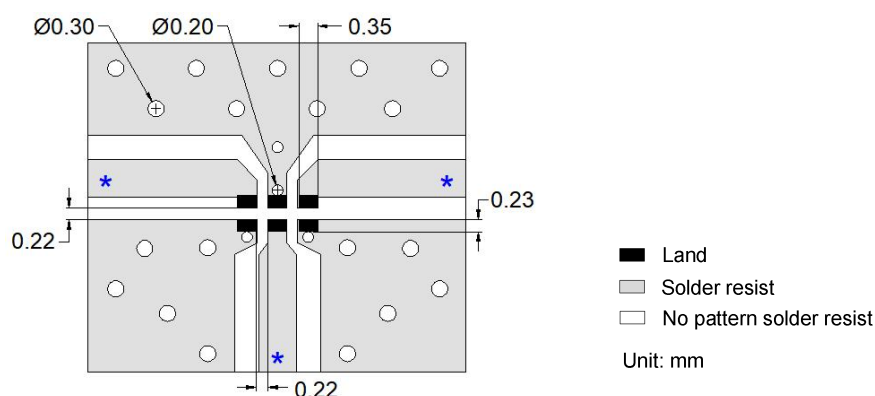
5. Electrical Characteristics

LT18D24255171L-7276B	Specification	
Frequency range	2400-2500 MHz	5150-7125 MHz
Insertion Loss (@ +25°C)	0.75 dB max. (0.55 dB typ.)	1.30 dB max. (0.56 dB typ.) @ 5150-5875 MHz 1.30 dB max. (0.84 dB typ.) @ 5875-7125 MHz
Insertion Loss (@ -40~+85 °C)	0.90 dB max.	1.50 dB max. @ 5150-5875 MHz 1.50 dB max. @ 5875-7125 MHz
Attenuation	35 dB min. (41 dB typ.) @ 4800-5000 MHz 35 dB min. (39 dB typ.) @ 5150-7125 MHz 33 dB min. (43 dB typ.) @ 7200-7500 MHz 18 dB min. (36 dB typ.) @ 10300-14250 MHz 5 dB min. (8 dB typ.) @ 15450-21375 MHz	30 dB min. (36 dB typ.) @ 2400-2500 MHz 35 dB min. (48 dB typ.) @ 10300-11900 MHz 30 dB min. (39 dB typ.) @ 11900-14250MHz 20 dB min. (30 dB typ.) @ 15450-17850MHz 15 dB min. (30 dB typ.) @ 17850-21375 MHz
Isolation	30 dB min. (38 dB typ.) @ 2400-2500 MHz 35 dB min. (41 dB typ.) @ 4800-5000 MHz 35 dB min. (39 dB typ.) @ 5150-7125 MHz 33 dB min. (46 dB typ.) @ 7200-7500 MHz 18 dB min. (27 dB typ.) @ 10300-14250 MHz 10 dB min. (27 dB typ.) @ 15450-21375 MHz	
Return Loss	13 dB min. (19 dB typ.)	12 dB min. (14 dB typ.)
Impedance	50 Ω	High Band Port is Complex Conjugate to MT7902 chipset
Power Capacity	2 W max.	
MSL	LEVEL 1	
Operating and Storage Condition Operation Temperature Range: -40 ~ +85°C Storage Temperature Range: -40 ~ +85°C		Storage Condition before Soldering Storage Temperature Range: +10 ~ +30°C Humidity: 30 to 70% relative humidity

6. Typical Electrical Performance at T= 25±5°C

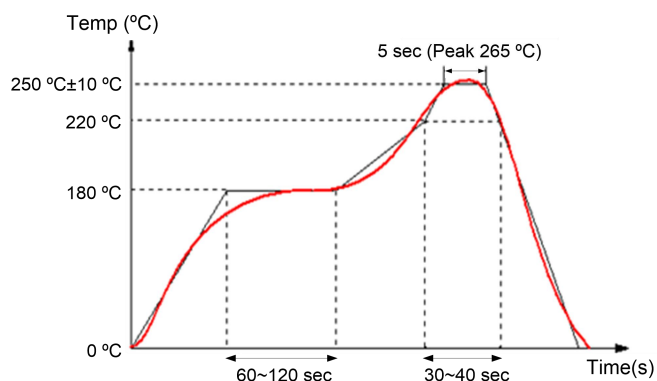


7. Soldering Land Pattern



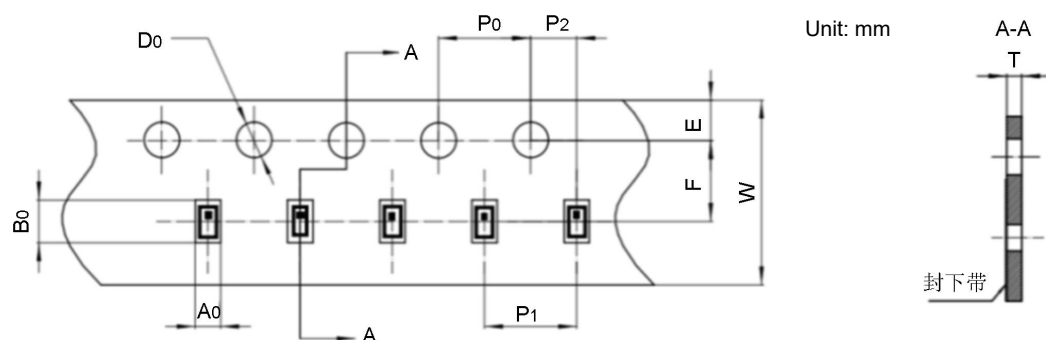
* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

8. Reflow Soldering Standard Condition



9. Packaging and Dimensions 1608 (BS 0603)

◆ Paper Tape



A_0	B_0	W	F	E	P_0	P_1	P_2	D_0	T	$10 P_0$
1.05 ±0.05	1.80 ±0.05	8.00 ±0.10	3.50 ±0.05	1.75 ±0.10	4.00 ±0.10	4.00 ±0.10	2.00 ±0.05	1.55 ±0.05	0.75 ±0.05	40.00 ±0.10

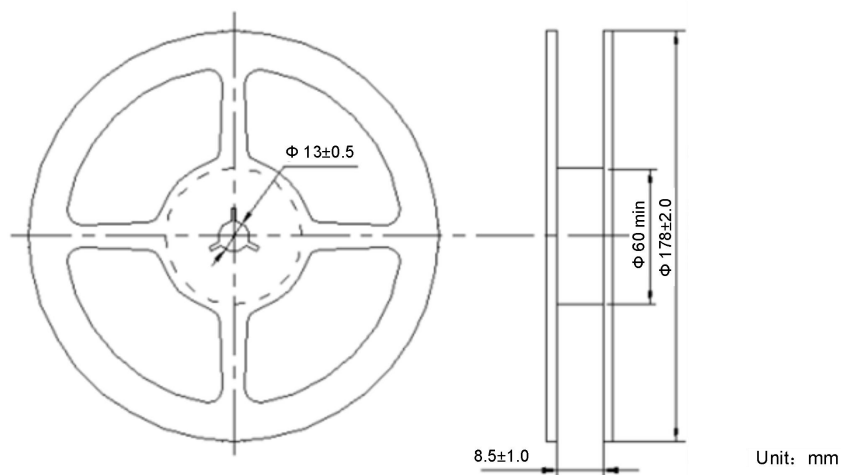
◆ **Ordering Code**

F	LT	18	D	24255171	L	7276B
FTR device	LTCC Technology	Size: 1608	Diplexer	Working Frequency: 2400-2500 MHz/ 5150-7125 MHz	Terminal electrode	Design code

◆ **Remarks for Package**

Reserve a length of $\geq 150\text{mm}$ for the trailer of the carrier and $\geq 150\text{mm}$ for the leader of the carrier and further $\geq 150\text{mm}$ of cover tape at the leading part of the carrier.

◆ **Reel (5000 pcs/Reel)**



◆ **Storage Period**

Product should be used within 12 months from the day of FTR outgoing inspection.

Storage Temperature Range : +10~+30 degree C, Humidity : 30~70% RH

10. Reliability Test

Test item	Test condition / Test method	Specification
Solderability IEC 60068-2-58 GB/T2423.28	*Solder bath temperature: 240±5°C *Immersion time: 2±0.5 sec Solder: Sn96.5Ag3.0Cu0.5 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°C *Leaching immersion time: 10±1 sec Solder : Sn96.5 Ag3.0 Cu0.5 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°C, 1 minute. *Solder temperature: 260±5°C *Immersion time: 10±1 sec Solder: Sn96.5Ag3.0Cu0.5 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 2423.60	*Pressurizing force: LGA terminal series : 3N(1005); 5N(≥1608) DIP terminal series : 3N(1005); 5N(1608); 10N(≥2012) *Test time:10±1 sec	No remarkable damage or removal of the termination.

Bending test IEC 60068-2-21 GB/T 2423.60	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°C±2°C. 10~15 minutes at room temperature. 30 minutes at +85°C±2°C. 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°C. *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°C. *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°C. *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.