

Datasheet of LTCC Device

RoHS & Halogen Free & REACH Compliance

Laminated Ceramic Diplexer

617-2200 MHz / 2300-5000 MHz

P/N: FLT25D2223L-4555B

*Contents in this sheet are subject to change without prior notice.

LTCC Diplexer 2520 (BS 1008) Size,

For 617-2200MHz / 2300-5000MHz Working Frequency

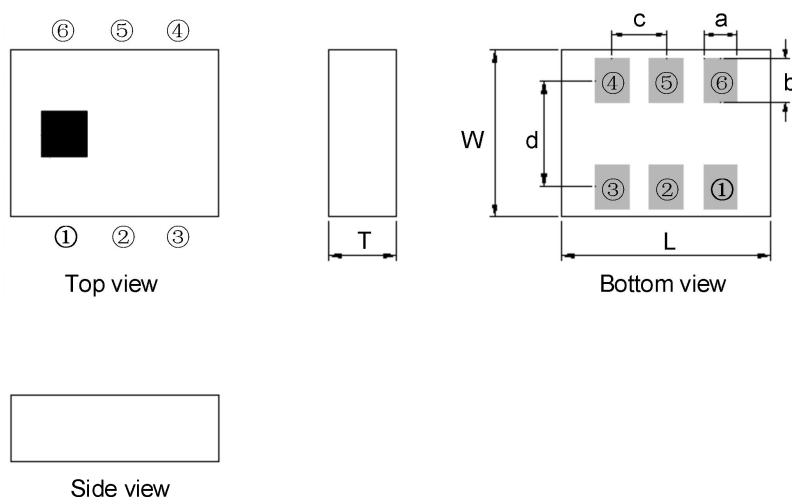
1. Features

High Isolation and Low Insertion Loss.

2. Applications

617-2200 MHz and 2300-5000 MHz band separation for mobile communication.

3. Shapes & Dimensions



Mark	L	W	T	a	b	c	d
Dimensions (mm)	2.5±0.1	2.0±0.1	0.8 max	0.4±0.1	0.525±0.1	0.65±0.1	1.275±0.1

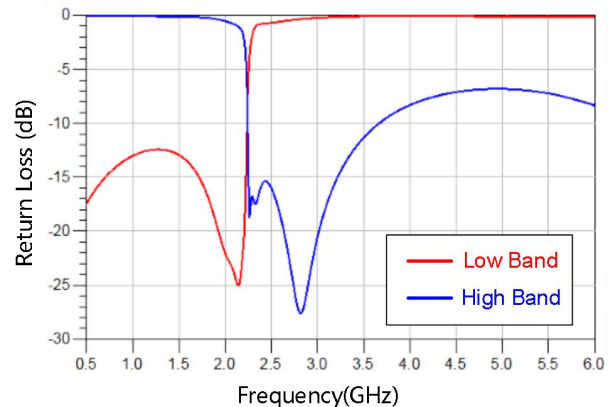
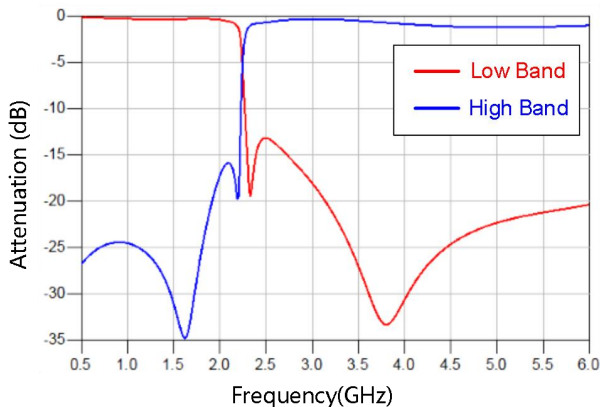
4. Terminal Pin Definition

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

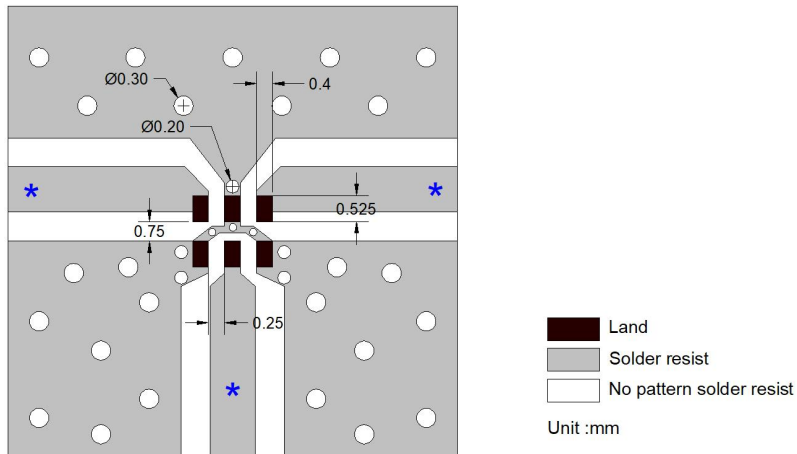
5. Electrical Characteristics

FLT25D2223L-4555B	Specification	
Frequency range	617-2200 MHz	2300-5000 MHz
Insertion Loss (@ +25°C)	0.45 dB max. (0.18 dB typ.) @ 617-960 MHz 0.65 dB max. (0.38 dB typ.) @ 1427-1710 MHz 1.30 dB max. (0.73 dB typ.) @ 1710-2110 MHz 1.70 dB max. (1.25 dB typ.) @ 2110-2170 MHz 2.60 dB max. (1.86 dB typ.) @ 2170-2200 MHz	1.90 dB max. (1.63 dB typ.) @ 2300-2496 MHz 0.90 dB max. (0.80 dB typ.) @ 2496-2690 MHz 1.50 dB max. (1.29 dB typ.) @ 3300-4200 MHz 1.50 dB max. (1.32 dB typ.) @ 4400-5000 MHz
Insertion Loss (@ -40 ~ +85°C)	0.55 dB max. @ 617-960 MHz 0.75 dB max. @ 1427-1710 MHz 1.50 dB max. @ 1710-2110 MHz 1.90 dB max. @ 2110-2170 MHz 3.00 dB max. @ 2170-2200 MHz	2.30 dB max. @ 2300-2496 MHz 1.10 dB max. @ 2496-2690 MHz 1.70 dB max. @ 3300-4200 MHz 1.70 dB max. @ 4400-5000 MHz
Attenuation	10 dB min. (12 dB typ.) @ 2300-2690 MHz 15 dB min. (21 dB typ.) @ 3300-4200 MHz 12 dB min. (24 dB typ.) @ 4400-5000 MHz	22 dB min. (25 dB typ.) @ 617-960 MHz 15 dB min. (25 dB typ.) @ 1427-1710 MHz 10 dB min. (15 dB typ.) @ 1710-2110 MHz 8 dB min. (15 dB typ.) @ 2110-2170 MHz 8 dB min. (15 dB typ.) @ 2170-2200 MHz
Return Loss	10 dB min. (16 dB typ.) @ 617-960 MHz 10 dB min. (14 dB typ.) @ 1427-1710 MHz 10 dB min. (15 dB typ.) @ 1710-2110 MHz 10 dB min. (20 dB typ.) @ 2110-2170 MHz 10 dB min. (17 dB typ.) @ 2170-2200 MHz	10 dB min. (18 dB typ.) @ 2300-2496 MHz 10 dB min. (14 dB typ.) @ 2496-2690 MHz 4 dB min. (8 dB typ.) @ 3300-4200 MHz 4 dB min. (7 dB typ.) @ 4400-5000 MHz
Power Capacity	4 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

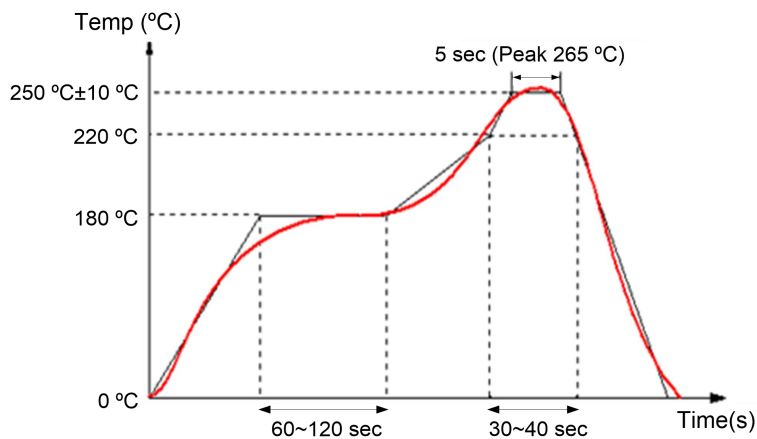


7. Soldering Land Pattern



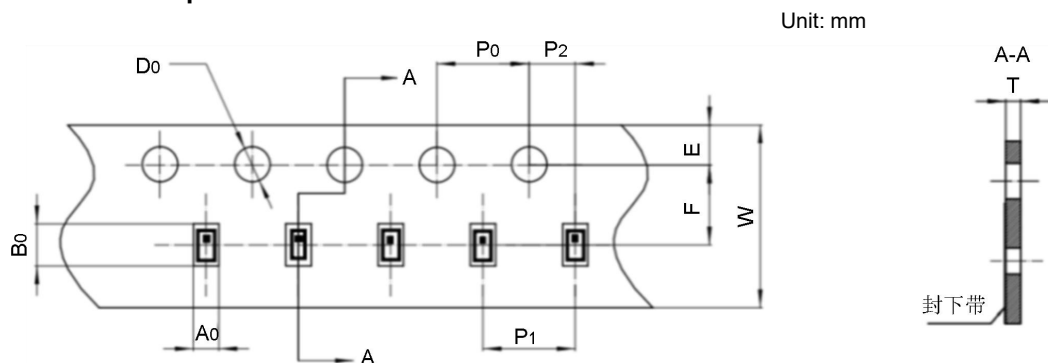
*Line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

8. Reflow Soldering Standard Condition



9. Packaging and Dimensions 2520 (BS 1008)

◆ Plastic Tape



A ₀	B ₀	W	F	E	P ₀	P ₁	P ₂	D ₀	T	10 P ₀
2.22 ±0.10	2.71 ±0.10	8.00 ±0.10	3.50 ±0.10	1.75 ±0.10	4.00 ±0.10	4.00 ±0.10	2.00 ±0.10	1.50 +0.10/0	0.95 ±0.10	40.00 ±0.20

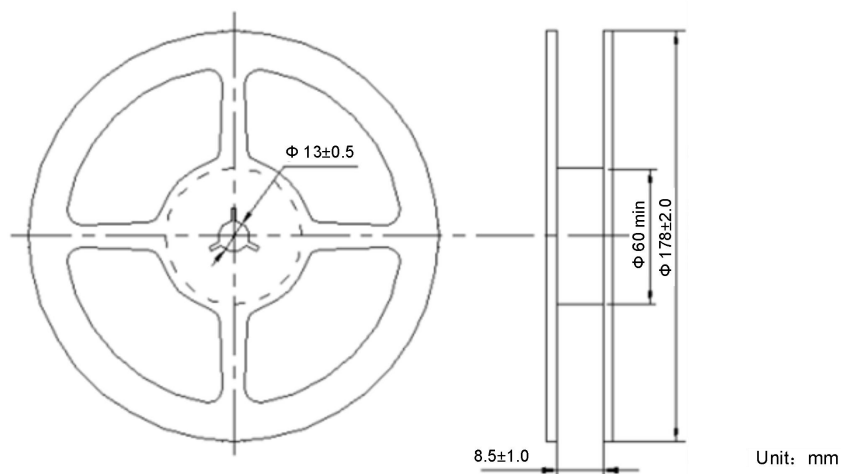
◆ Ordering Code

F	LT	25	D	2223	L	4555B
FTR device	LTCC Technology	Size: 2520	Diplexer	Working Frequency: 617-2200 MHz/ 2300-5000 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 (3000 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: Sn96.5 Ag3.0 Cu0.5 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: Sn96.5 Ag3.0 Cu0.5 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.