

DATA SHEET

# TT49778E-TR: 1227/1575 MHz Ceramic Diplexer

## Applications

- L1-L2 band applications
- Portable transceivers for both military and homeland security radio communications
- Radio navigation-satellite
- Earth exploration

## Features

- Surface mount design
- 16 MHz bandwidth L1 and L2
- Wide operating temperature range
- Light weight
- Smaller profile compared to a typical ceramic design
- Easy drop-in solution
- Quick turnaround on new designs
- RoHS-compliant
- Available in various frequencies

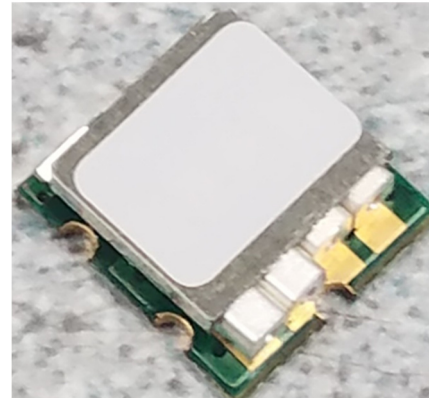


Figure 1. TT49778E-TR External View

## Description

Skyworks, through its wholly owned subsidiary, Trans-Tech, offers a family of ultra-small profile filters available in surface-mount technology (SMT) designs. We can design and manufacture filters from 200 MHz up to 8 GHz, with higher power handling ability up to 10 W, continuous wave (CW). We also offer rapid response times on all filter design requirements.

The small-profile ceramic filter designs offer customers the option to go with a lighter weight, and reduced X-Y-Z dimensions as solutions to their requirements.

These ceramic filter solutions allow design flexibility beyond traditional ceramic styles.



Skyworks Green™ products are compliant with all applicable legislation and are halogen-free. For additional information, refer to *Skyworks Definition of Green™*, document number SQ04-0074.

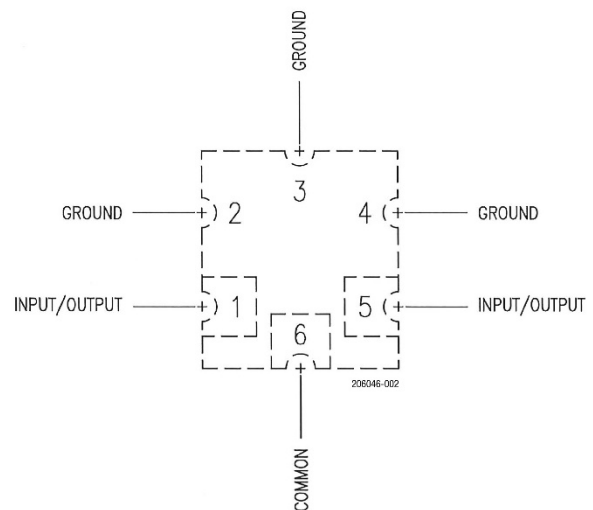


Figure 2. TT49778E-TR Pin Out (Bottom View)

**Table 1. TT49778E-TR Signal Pin Description**

Pin	Name	Function
1	1227 I/O	1227 MHz input/output
2, 3, 4	GND	RF ground
5	1575 I/O	1575 MHz input/output
6	CMN	Common

**Table 2. TT49778E-TR Absolute Maximum Ratings (Tc = 25 °C, Unless Otherwise Noted)<sup>1</sup>**

Parameter	Symbol	Minimum	Maximum	Units
RF CW input power, common to either I/O	P <sub>IN</sub>		2	W
Storage temperature range	T <sub>STG</sub>	-40	+85	°C
Maximum junction temperature	T <sub>J</sub>		N/A	
Electrostatic discharge: Charged device model (MDM), Class C3 Human Body model (HBM), Class 2	ESD		N/A	V

<sup>1</sup> Exposure to maximum rating conditions for extended periods may reduce device reliability. There is no damage to device with only one parameter set at the limit and all other parameters set at or below their nominal value. Exceeding any of the limits listed here may result in permanent damage to the device.

**Table 3. TT49778E-TR Electrical Specifications<sup>1</sup>**

Parameter	Symbol	Test Condition	Minimum	Typical	Typical	Maximum	Units
Center frequency	f <sub>0</sub>			1227	1575		MHz
Poles				2	2		
Bandwidth	BW			F0 ± 8	F0 ± 8		MHz
Insertion loss	IL	IL @ BW		2.0	2.0		dB
Return loss	RL	RL @ BW		10	10		dB
Group delay	GD	GD @ BW		0.5	0.5		nS
Out of band rejection		@ f <sub>0</sub> -100 MHz @ f <sub>0</sub> +150 MHz		20 20	20 18		dB
Impedance				50	50		Ω

<sup>1</sup> Performance is guaranteed only under the conditions listed in this table.

### Typical Performance Characteristics

(Tc = 25 °C, Characteristic Impedance (Zo) = 50 Ω)

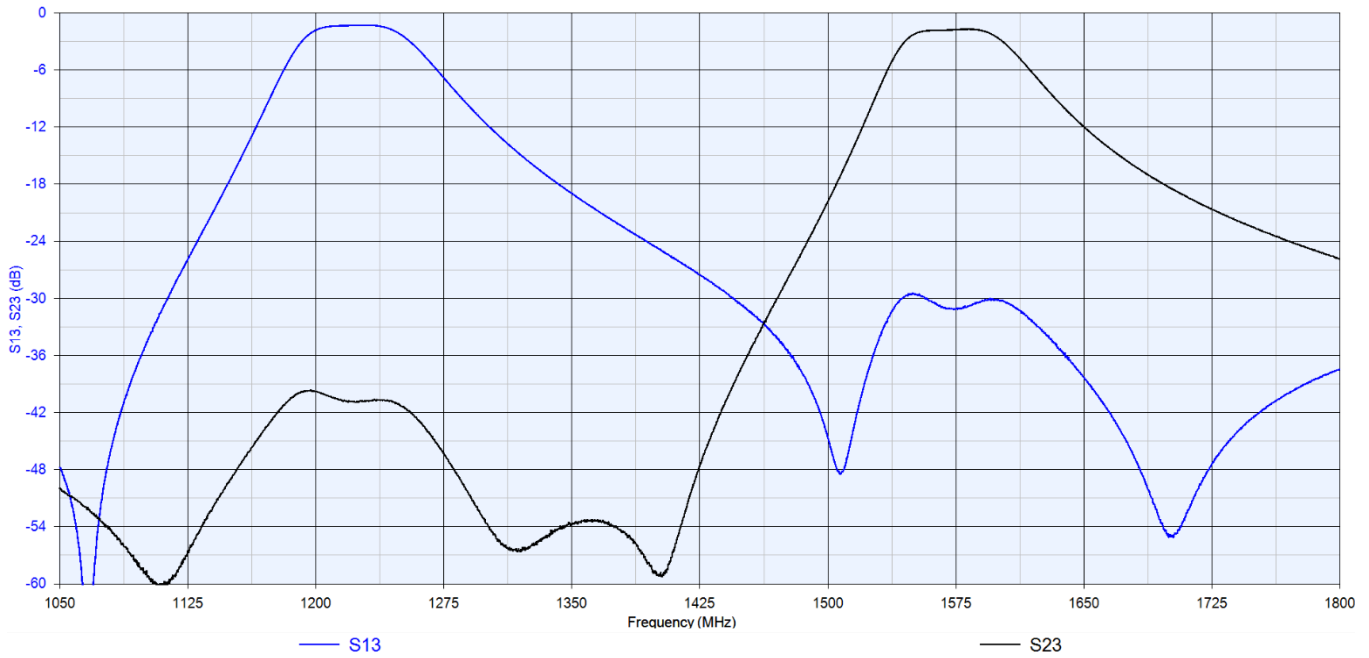


Figure 3. TT49778E-TR Insertion Loss vs Frequency

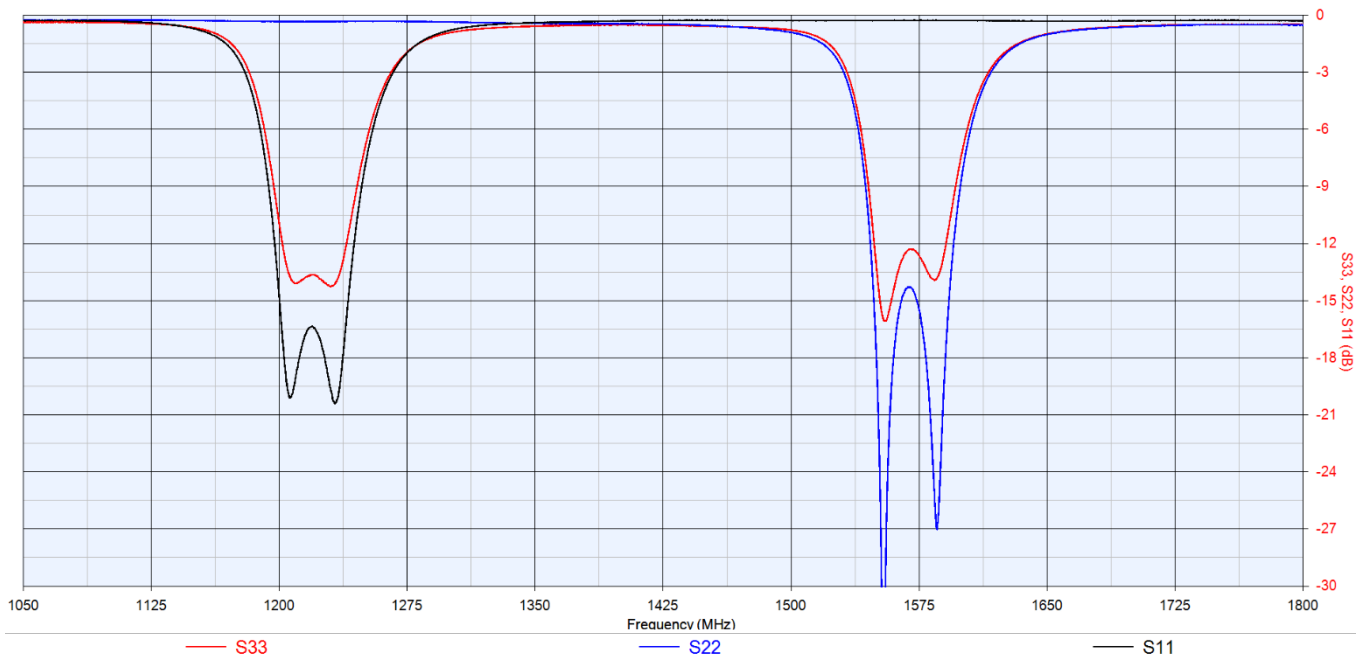
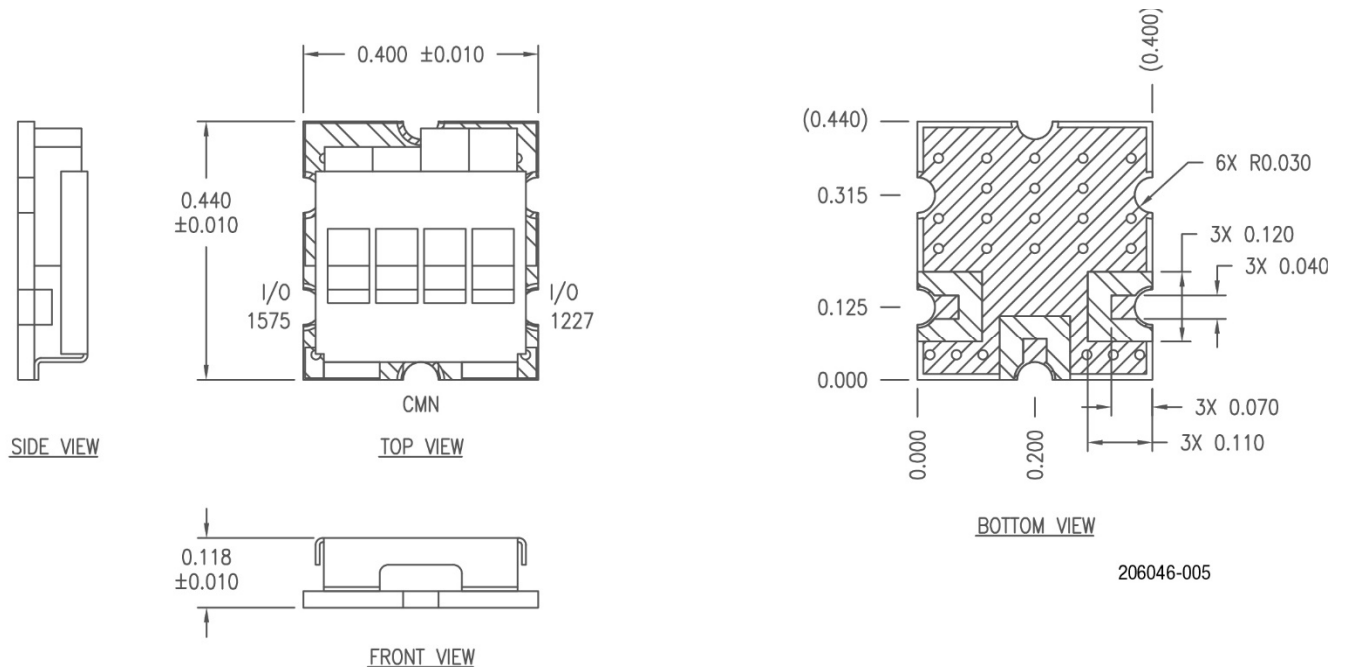
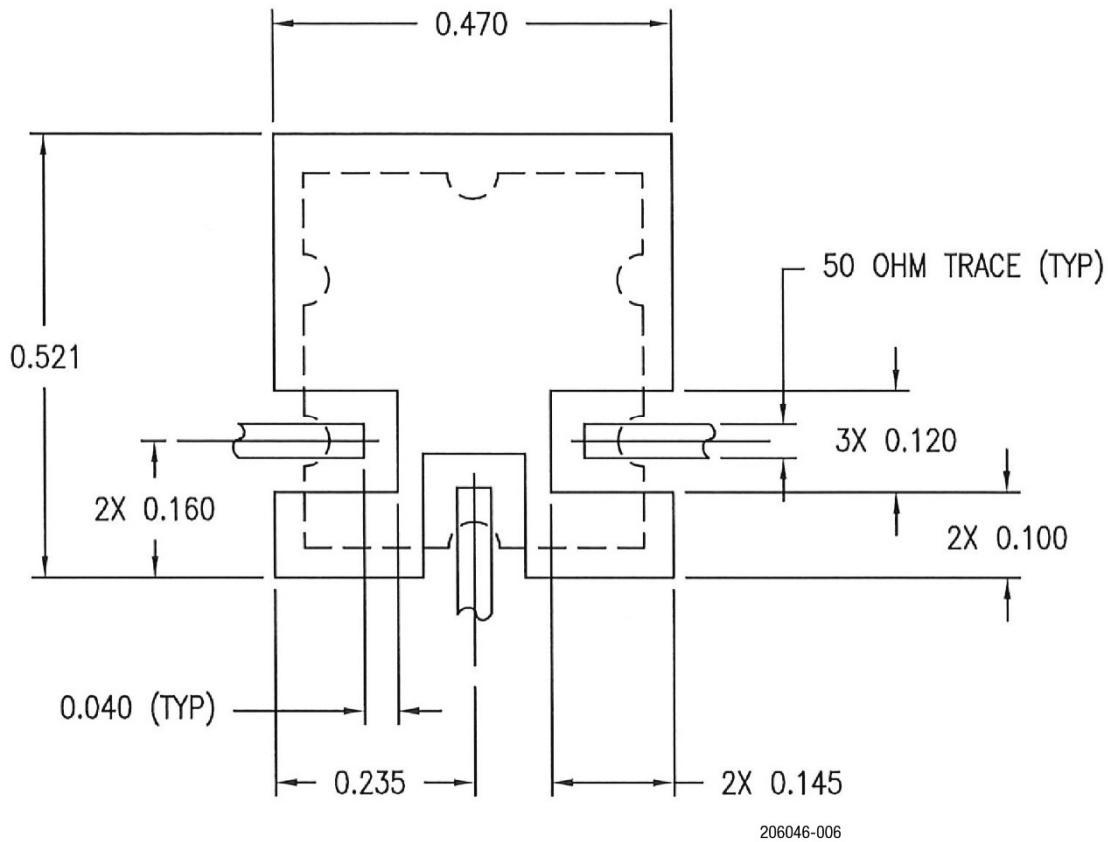


Figure 4. TT49778E-TR Return Loss vs Frequency

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**Figure 5. TT49778E-TR Package Dimensions**



**Figure 6. TT49778E-TR PCB Layout Footprint**

## Ordering Information

Part Number	Product Description
TT49778E-TR	1227/1575 MHz RF Ceramic Diplexer

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