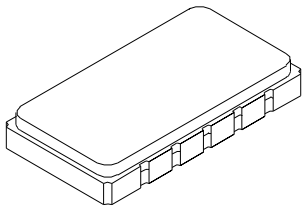
AEC-Q200

RoHS Compliance
This component is compliant with RoHS directive.
This component was always RoHS compliant from the first date of manufacture.

SF1097A-1

71 MHz SAW Filter

- ***High Performance SAW Filter***
- ***Excellent Size-to-Performance Ratio***
- ***Balanced or Single-ended Operation***
- ***Hermetic 14 x 8 mm Surface-mount Case***



Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage on any Non-ground Terminal	10	VDC
Storage Temperature Range	-40 to +85	°C
Maximum Soldering Profile Temperature	235 °C for 90 s	

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_C	1		71.000		MHz
Insertion Loss at f_C	IL			6.0	8.0	dB
1 dB Bandwidth	BW_1	1, 2	250	324		kHz
Amplitude Ripple, f_C ± 125 kHz				0.7	2.0	dB_{P-P}
Group Delay at f_C			1.90	2.31	2.40	µs
Group Delay Variation over fc ±125 kHz	GDV			450	1500	ns_{P-P}
Rejection Referenced to IL:						dB
fc-500 to fc-300 kHz and fc+300 to fc+500 kHz		1, 2, 3	15	18		
fc-700 to fc-500 kHzand fc+500 to fc+700 kHz			30	33		
fc-3000 to fc-700 kHz and fc+700 to fc+3000 kHz			35	39		
f_C-800 and f_C+800 kHz			41	43		
fc-3.0 to fc-35.0 MHz and fc+3.0 to fc+35.0 MHz			43	60		
Operating Temperature Range	T_A	1	-40		+85	°C

Case Style	13.3 x 6.5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	SF1097A-1 YYWW

Notes:

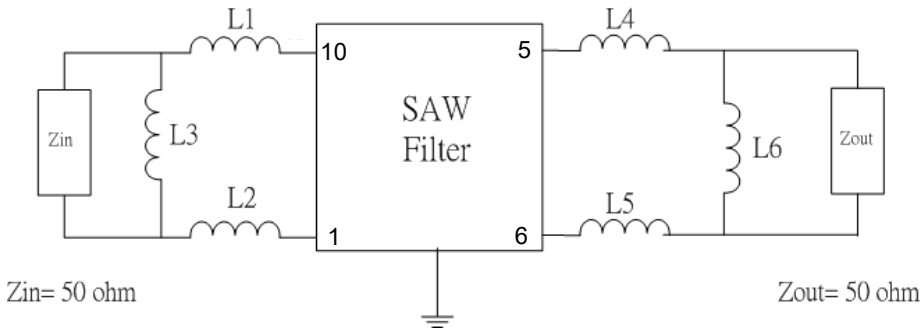
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 W and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
4. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
7. US and international patents may apply.
8. Electrostatic Sensitive Device. Observe precautions for handling.

Balanced Electrical Connections

Connection	Terminals
Port 1	1, 10
Port 2	5, 6
Case Ground	All others

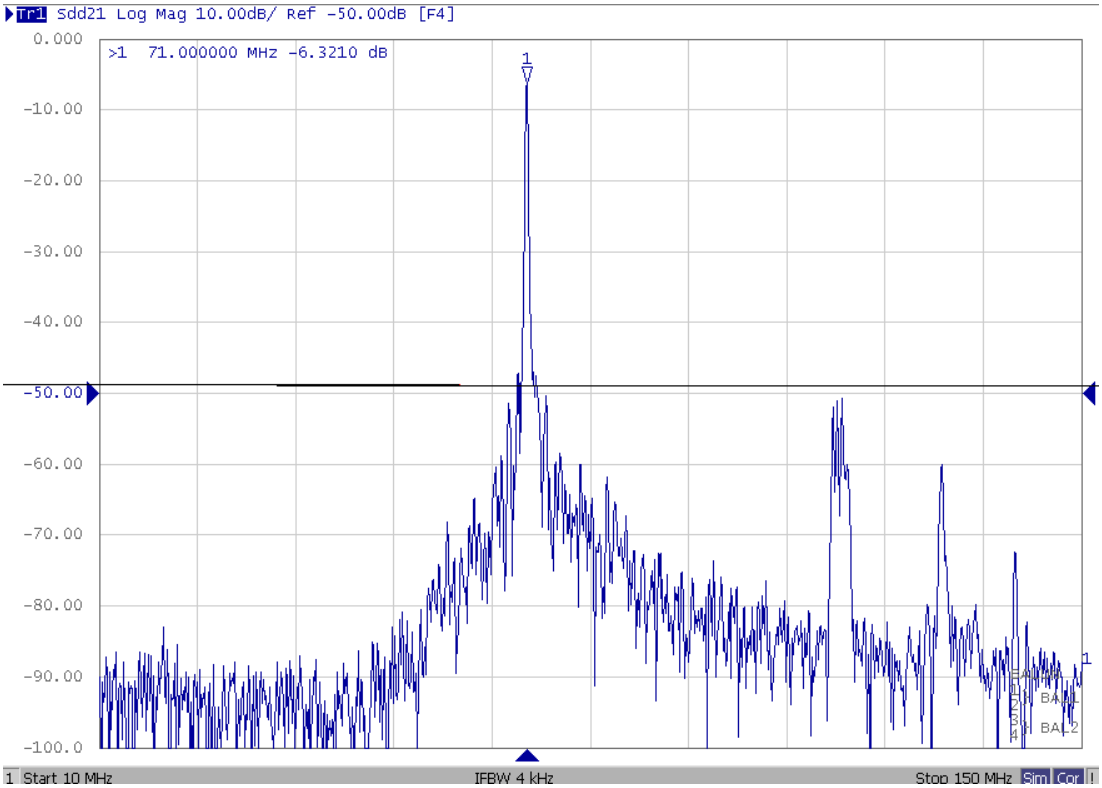
Typical Balanced Matching Network

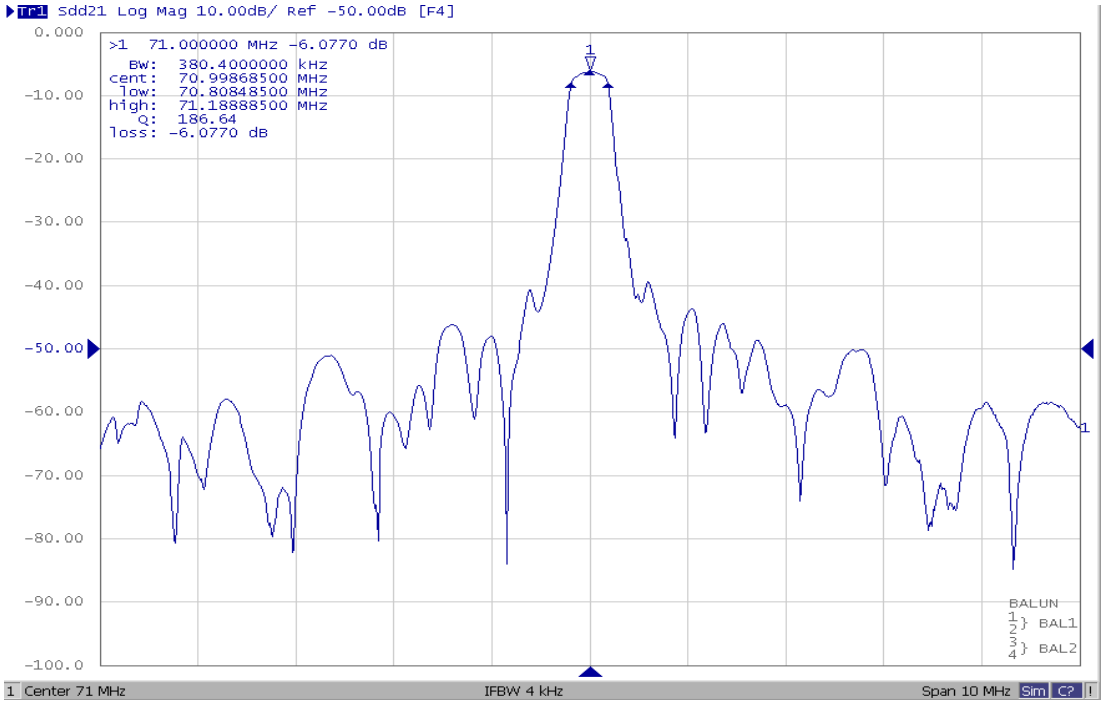
Pin out and reference matching network. Optimal values may be different on customer PCB.

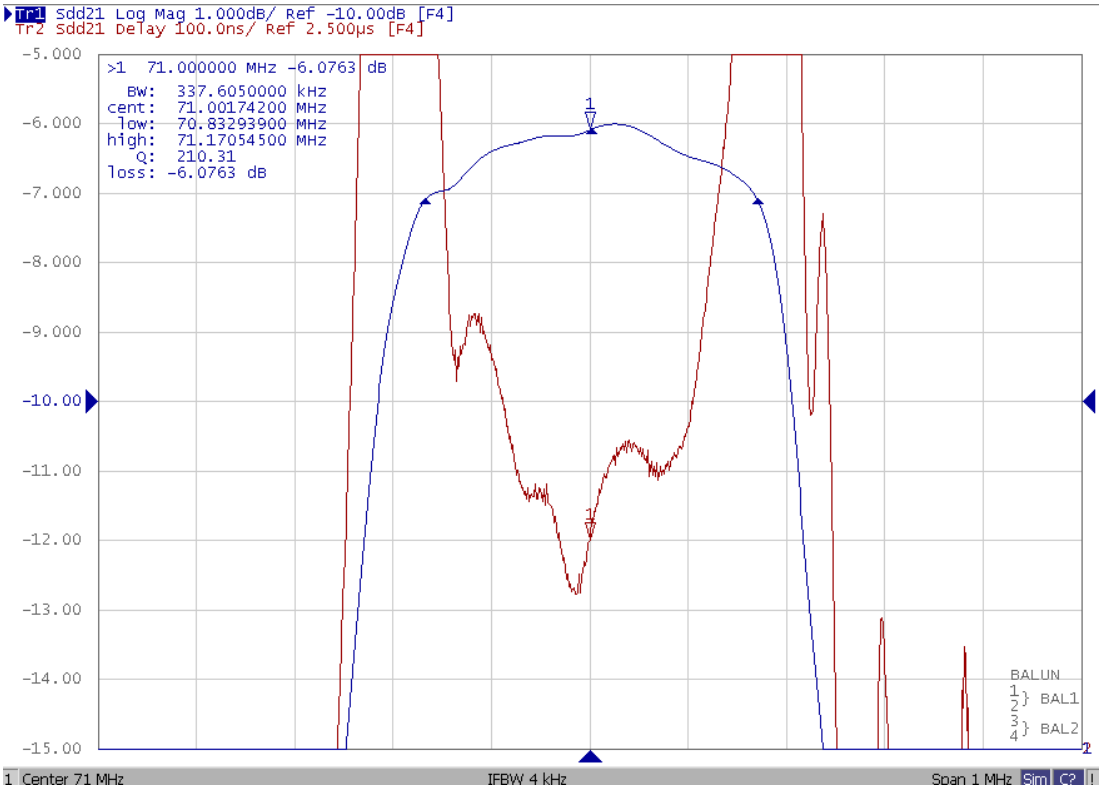


L1=L2=165nH L3=68pF L4=L5=165nH L6=82pF

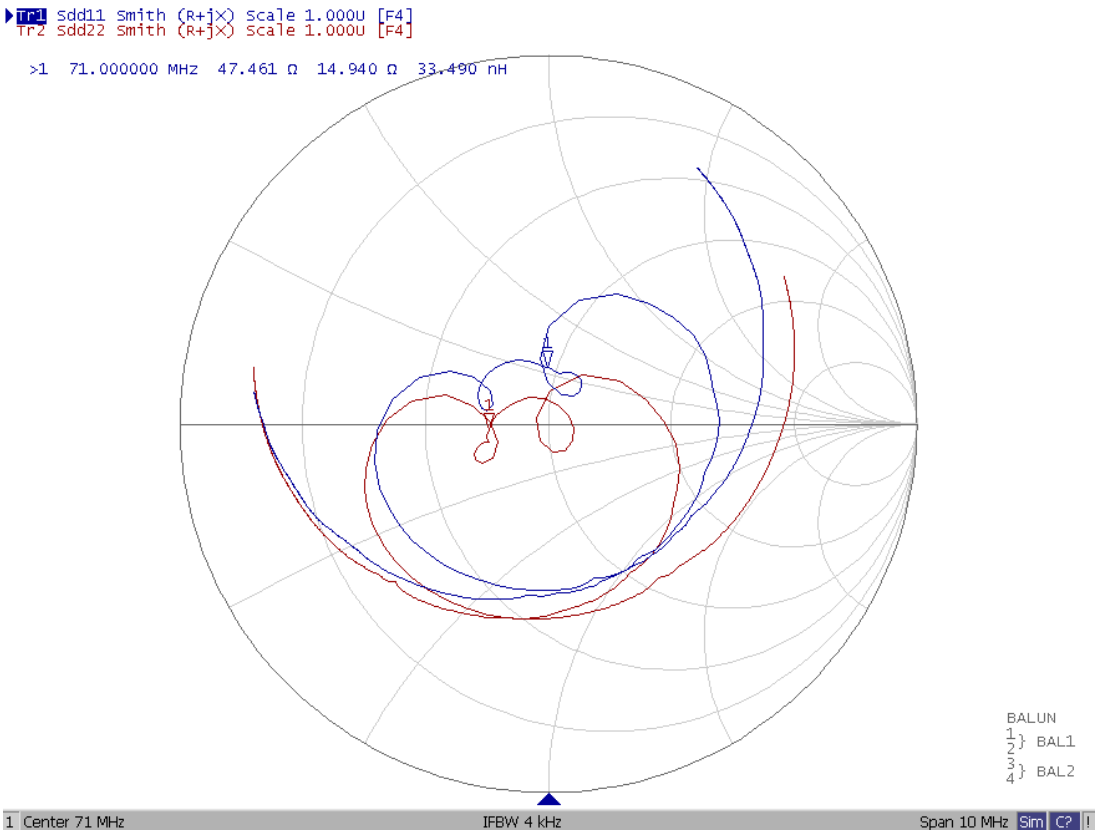
Filter Response Plots, Balanced Operation



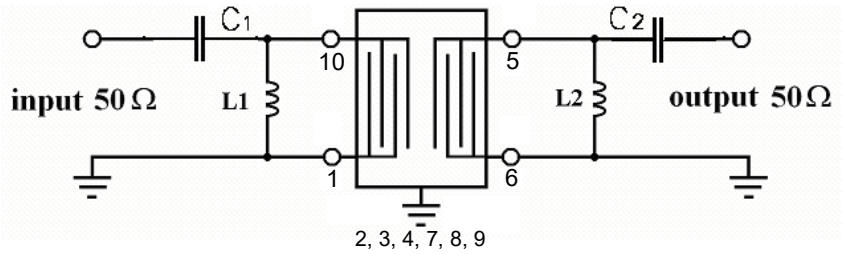




Impedance Plots (matched), Balanced Operation



Typical Single-ended Matching Network

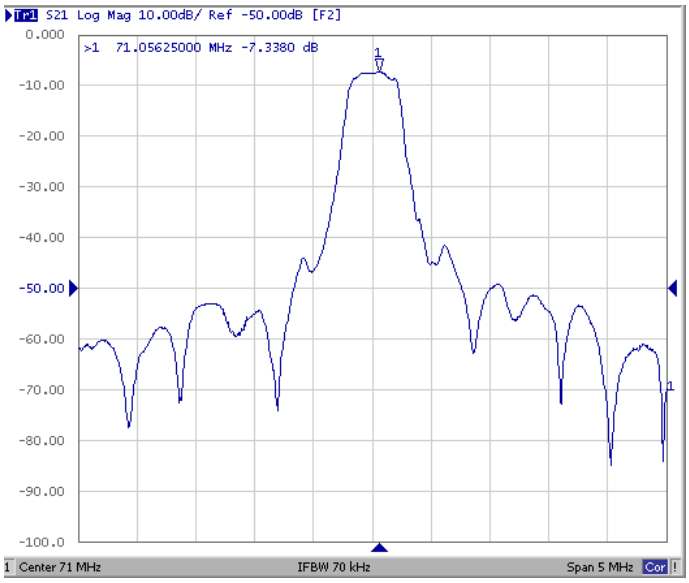


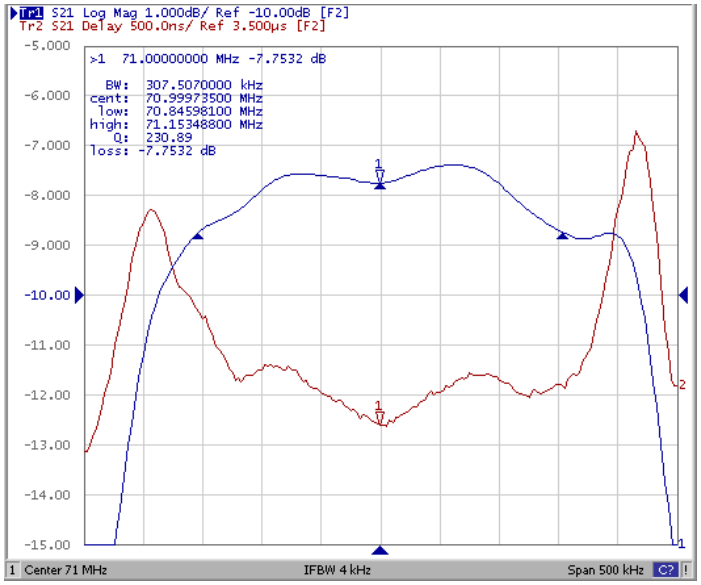
L1 = 220 nH C1 = 9 pF L2 = 220 nH C2 = 9 pF

Single-ended Electrical Connections

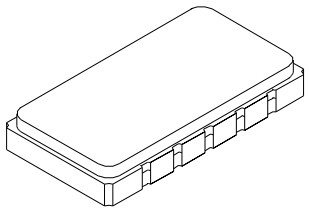
Connection	Terminals
Port 1	10
Port 2	5
Case Ground	All others

Filter Response Plots, Single-ended Operation





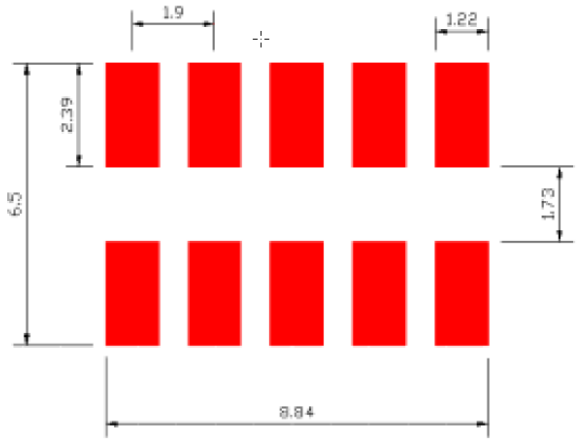
10-terminal Ceramic Surface-mount Case
13.3 x 6.5 mm Nominal Footprint



Case Dimensions

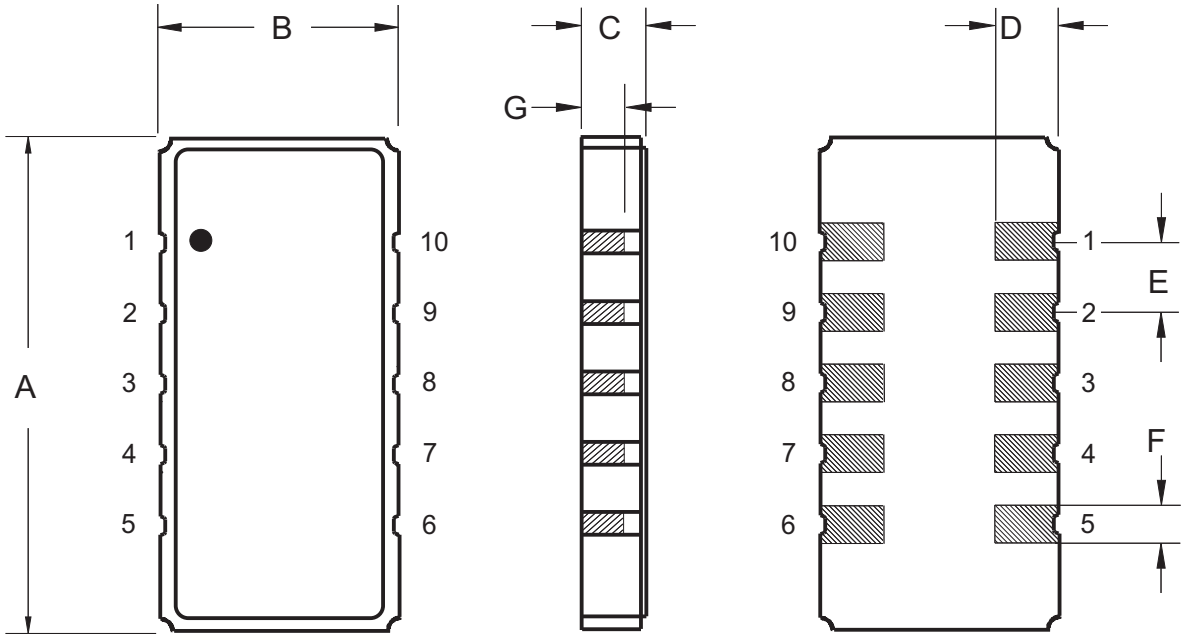
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	13.2	13.3	13.5	.520	.524	.531
B	6.4	6.5	6.7	.251	.256	.264
C			2.00			.078
D	1.75	1.83	1.90	.069	.072	.075
E		1.91			.075	
F		1.02			.040	
G		0.76			.030	

Typical PCB Land Pattern

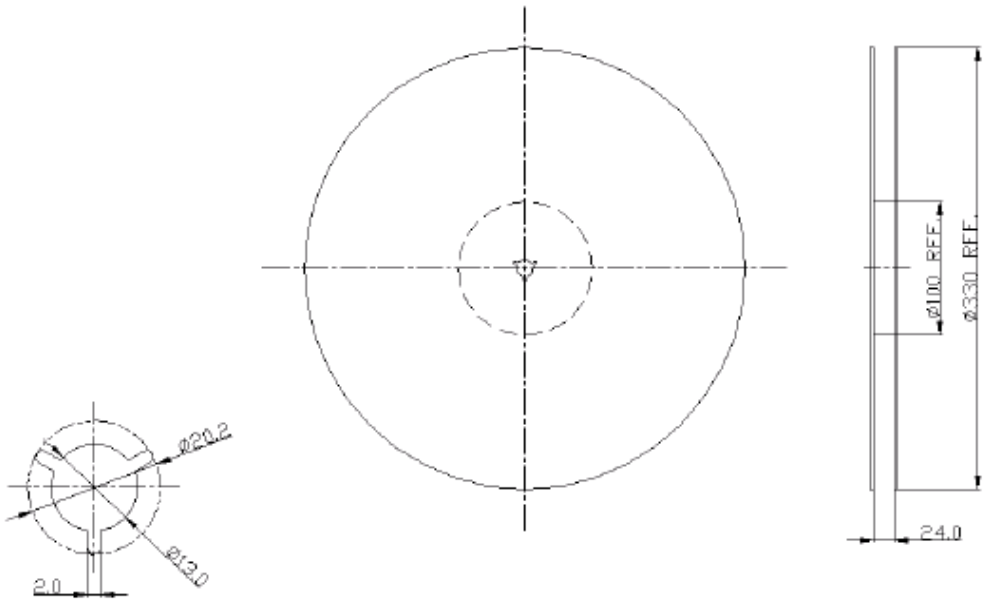


Electrical Connections

Connection	Terminals
Port 1 Hot or Return/Gnd	1
Port 1 Return/Gnd or Hot	10
Port 2 Hot or Return/Gnd	6
Port 2 Return/Gnd or Hot	5
Case Ground	All others
Single Ended Operation	**Return is ground**
Differential Operation	**Return is hot**

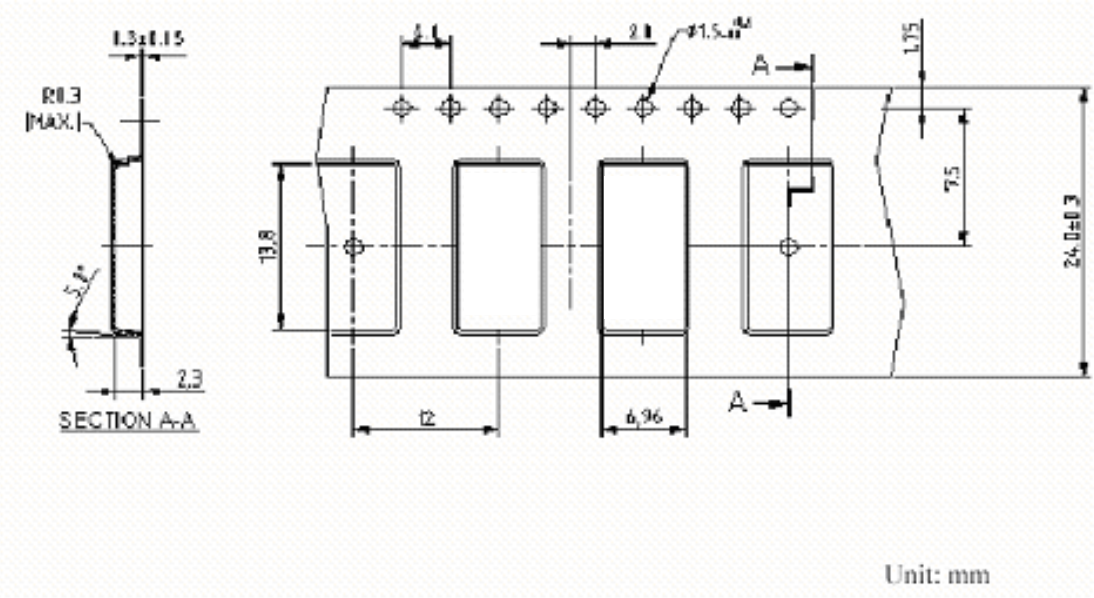


Tape Dimensions



Unit: mm

Reel Dimensions



Unit: mm