

## BTLL Series



Chilisin offer multilayer devices of Low-Temperature Cofired Ceramics (LTCC) for applications in wireless communication as WLAN, Bluetooth etc. Our commitment is to meet your goals through extensive technological innovation, excellent quality, short lead time and high volume production capability.

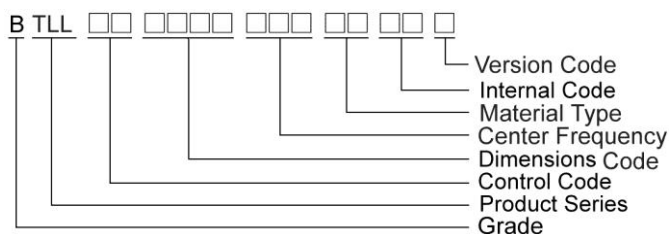
### Features

- RoHS, Halogen Free and REACH Compliance
- Miniaturized.
- Low insertion loss, high attenuation.
- Eliminate noise over a wide frequency range. Idea for high frequency and space limited designs.

### Applications

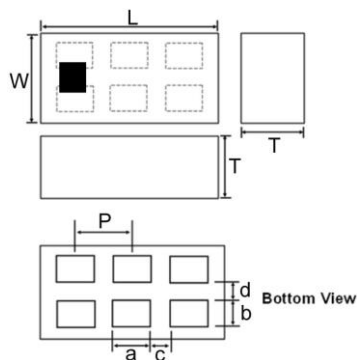
- WLAN ,Home RF, Bluetooth Module, WiMAX Modules, etc.

### Product Identification



### Shapes and Dimensions

FIG 1



### Terminal Configuration

FIG 1.1

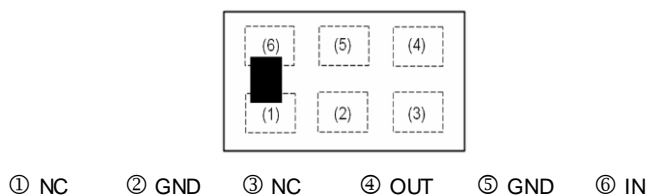


FIG 2

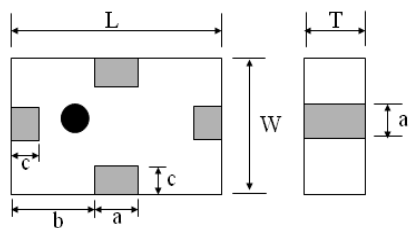
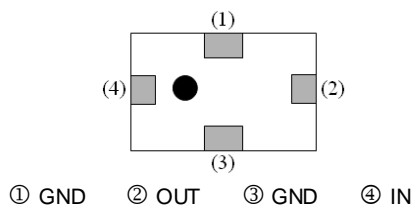
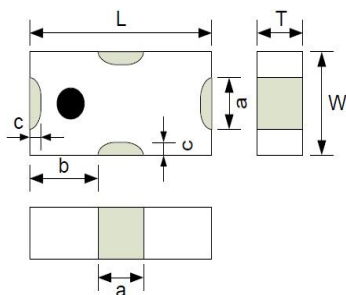


FIG 2.1



## Shapes and Dimensions

FIG 3



## Terminal Configuration

FIG 3.1

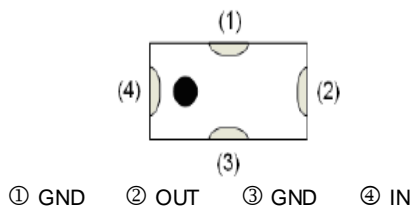


FIG 4

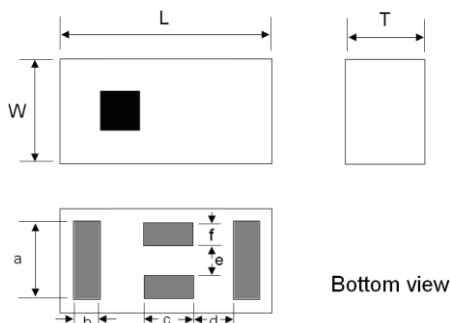


FIG 4.1~2

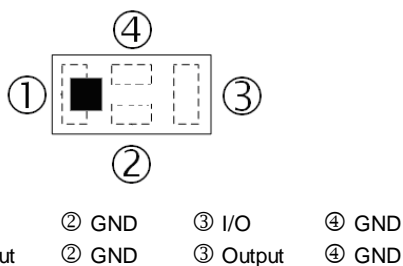


FIG 5

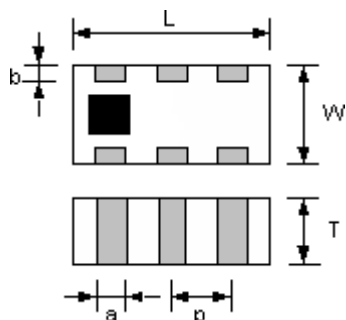


FIG 5.1~3

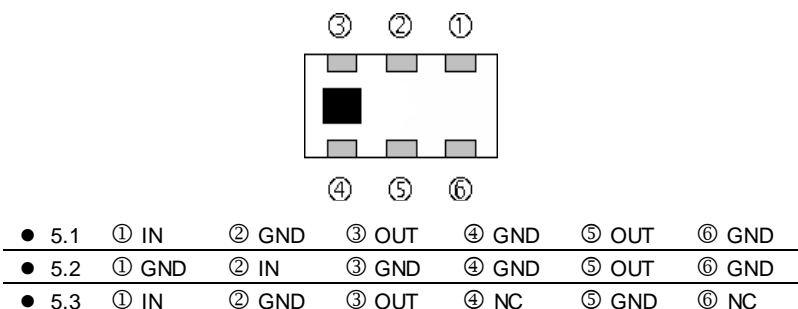


FIG 6

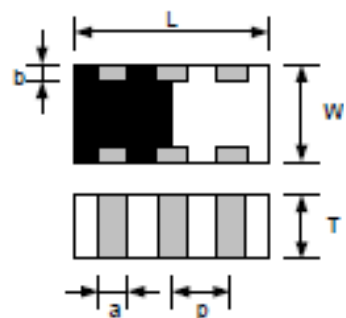


FIG 6.1

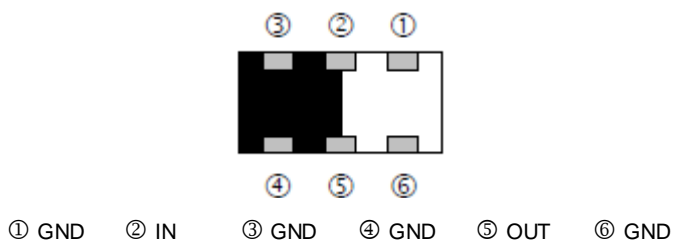


FIG 7

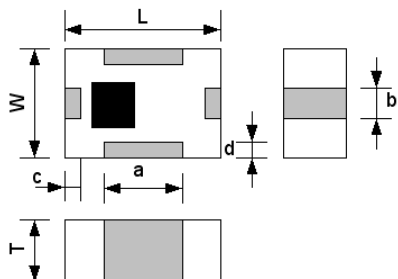
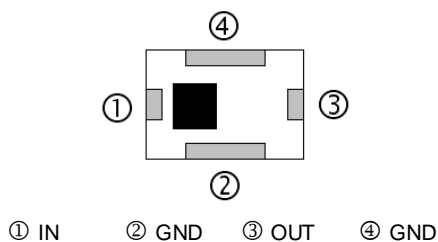
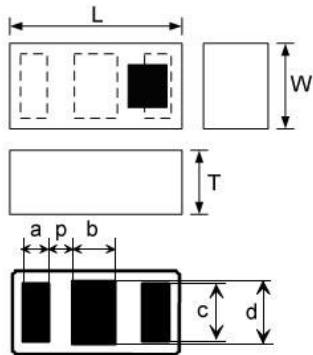


FIG 7.1



## Shapes and Dimensions

FIG 8



## Terminal Configuration

FIG 8.1

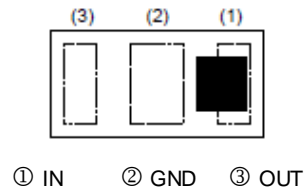


FIG 9

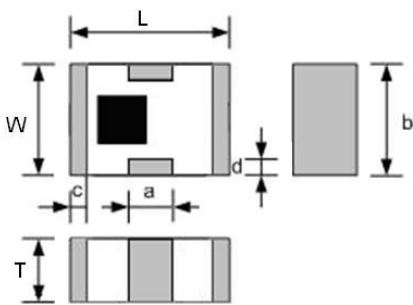


FIG 9.1

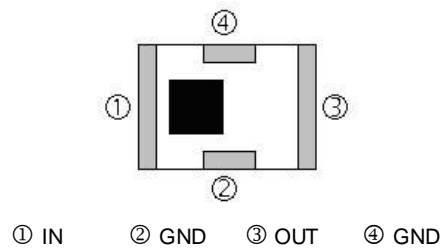


FIG 10

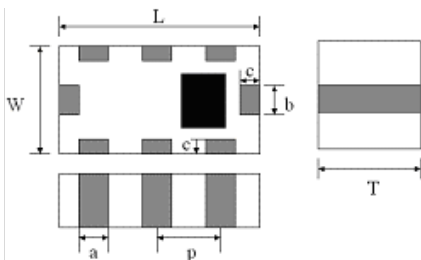


FIG 10.1

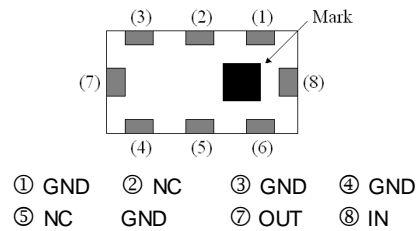


FIG 11

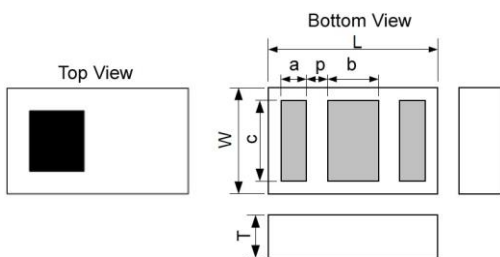
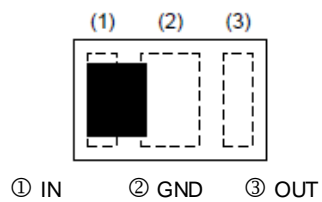


FIG 11.1



# Low Temperature Cofired Ceramic - BTLL Series

Dimension in mm

TYPE	FIG	L	W	T	a	b	c	d	P	
BTLL0010050G9H6A30	1	1.0±0.05	0.5±0.05	0.4Max	0.18±0.05	0.125±0.05	0.18±0.05	0.15±0.05	0.36±0.05	
BTLL0010051G7H6A10	1	1.0±0.05	0.5±0.05	0.4±0.1	0.18±0.05	0.125±0.05	0.18±0.05	0.15±0.05	0.36±0.05	
BTLL001005EXVHBA10	1	1.0±0.05	0.5±0.05	0.38±0.05	0.18±0.05	0.125±0.05	0.18±0.05	0.15±0.05	0.36±0.05	
BTLL001005EXVHBB10	1	1.0±0.05	0.5±0.05	0.38±0.05	0.18±0.05	0.125±0.05	0.18±0.05	0.15±0.05	0.36±0.05	
BTLL0010052G4S1A30	2	1.0±0.05	0.5±0.05	0.4±0.05	0.3±0.1	0.35±0.1	0.15±0.05	-	-	
BTLL0010052G4S1G20	3	1.0±0.05	0.5±0.05	0.4±0.05	0.3±0.1	0.35±0.1	0.15±0.05	-	-	
BTLL0016080G8H6A30	5.1	1.6±0.1	0.8±0.1	0.6±0.1	0.2±0.1	0.15±0.1	0.2 <sup>+0.1</sup> <sub>-0.15</sub>	-	0.5±0.05	
BTLL0016082G4S1A10	6	1.6±0.15	0.8±0.1	0.65±0.1	0.3±0.1	0.3 <sup>+0.1</sup> <sub>-0.2</sub>	-	-	0.55±0.1	
BTLL0016082G4S1A30	7	1.6±0.1	0.8±0.1	0.6±0.1	0.7±0.15	0.3 <sup>+0.1</sup> <sub>-0.15</sub>	0.15±0.1	0.15±0.1	-	
BTLL0016082G4S1A50	5.2	1.6±0.15	0.8±0.1	0.6±0.1	0.3±0.1	0.3 <sup>+0.1</sup> <sub>-0.2</sub>	-	-	0.55±0.1	
BTLL0016082G4S1C10	5.2	1.6±0.15	0.8±0.1	0.65±0.1	0.3±0.1	0.3 <sup>+0.1</sup> <sub>-0.2</sub>	-	-	0.55±0.1	
BTLL0016082G4S1C20	5.3	1.6±0.1	0.8±0.1	0.6±0.1	0.2±0.1	0.2 <sup>+0.1</sup> <sub>-0.15</sub>	0.15±0.1	-	0.5±0.05	
BTLL0016082G5S1A20	5.2	1.6±0.15	0.8±0.1	0.65±0.1	0.3±0.1	0.3 <sup>+0.1</sup> <sub>-0.2</sub>	-	-	0.55±0.1	
BTLL0016082G7S1B10	8	1.6±0.1	0.8±0.1	0.65Max	0.25±0.1	0.4±0.1	0.55±0.1	0.6±0.1	0.23±0.05	
BTLL0016083G5S1A20	5.1	1.6±0.1	0.8±0.1	0.6±0.1	0.3±0.1	0.3 <sup>+0.1</sup> <sub>-0.2</sub>	0.1±0.1	-	0.55±0.1	
BTLL0016083G6S1A10	5.2	1.6±0.15	0.8±0.1	0.65±0.1	0.3±0.1	0.3 <sup>+0.1</sup> <sub>-0.2</sub>	-	-	0.55±0.1	
BTLL0016085G5S1A20	9	1.6±0.1	0.8±0.1	0.6±0.1	0.5±0.1	0.8±0.1	0.2±0.1	0.2±0.1	-	
BTLL0020120G9S1B20	10	2±0.1	1.25±0.1	0.85±0.1	0.3±0.1	0.3±0.1	0.3 <sup>+0.1</sup> <sub>-0.2</sub>	-	0.65±0.1	
BTLL0020122G0S1A20	11	1.6±0.1	0.8±0.1	0.65Max	0.25±0.1	0.4±0.1	0.55±0.1	-	0.6±0.1	
BTLL0020125G5S1A20	10	2±0.2	1.25±0.2	0.9±0.1	0.3 <sup>+0.1</sup> <sub>-0.15</sub>	0.3 <sup>+0.1</sup> <sub>-0.15</sub>	0.2±0.15	-	0.65±0.15	
TYPE		L	W	T	a	b	c	d	e	f
BTLL0016080G8H6A10	4.1	1.6±0.1	0.8±0.1	0.6±0.1	0.65±0.1	0.225±0.05	0.4±0.05	0.3±0.05	0.21±0.05	0.225±0.05
BTLL001608JXVSBA30	4.1	1.6±0.1	0.8±0.1	0.6±0.1	0.65±0.1	0.225±0.05	0.4±0.05	0.3±0.05	0.21±0.05	0.22±0.05
BTLL001608DXVHBB10	4.2	1.6±0.1	0.8±0.1	0.6±0.1	0.65±0.1	0.225±0.05	0.4±0.05	0.3±0.05	0.21±0.05	0.22±0.05

# Low Temperature Cofired Ceramic - BTLL Series

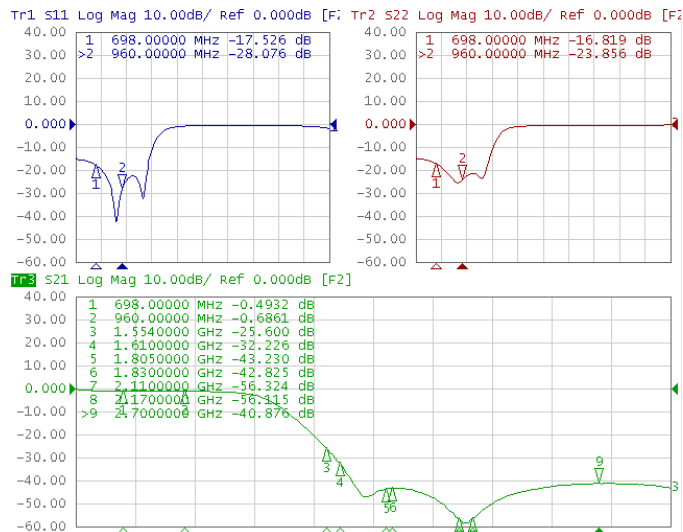
## Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Application
BTLL0010050G9H6A30	698~960	0.9	10	13dB Min. @ 1554~1610 MHz 35dB Min. @ 1805~1830 MHz 35dB Min. @ 2110~2170 MHz 30dB Min. @ 1710~2700 MHz	GSM/WCDMA/LTE
BTLL0010051G7H6A10	1695~2180	0.6	10	20dB Min. @ 3350~4360 MHz 45dB Min. @ 5085~6540 MHz	GSM/WCDMA/LTE
BTLL0010052G4S1A30	2400~2500	0.45(25°C)	11.7	21dB Min. @ 4800~5000 MHz	WLAN/BT
		0.55(-40~85°C)	-	21dB Min. @ 7200~7500 MHz	
BTLL0010052G4S1G20	2400~2500	0.75(25°C)	12.7	30dB Min. @ 4800~5000 MHz	WLAN/BT
		0.9(-40~85°C)	10	35dB Min. @ 7200~7500 MHz	
BTLL001005EXVHBA10	1880~2025	1.4(25°C)	10	10dB Min. @ 2400~2500 MHz 25dB Min. @ 3760~4050 MHz 25dB Min. @ 5150~5850 MHz 25dB Min. @ 5640~6075MHz 25dB Min. @ 7520~8100 MHz 22dB Min. @ 9400~10125 MHz	GSM/WCDMA/LTE
		1.6(-40~85°C)			
BTLL001005EXVHBB10	1710~2025	1.4(25°C)	10	10dB Min. @ 2400~2500 MHz 25dB Min. @ 3420~4050 MHz 25dB Min. @ 5150~5850 MHz 25dB Min. @ 5130~6075 MHz 25dB Min. @ 6840~8100 MHz 22dB Min. @ 8550~10125 MHz	GSM/WCDMA/LTE
		1.6(-40~85°C)			

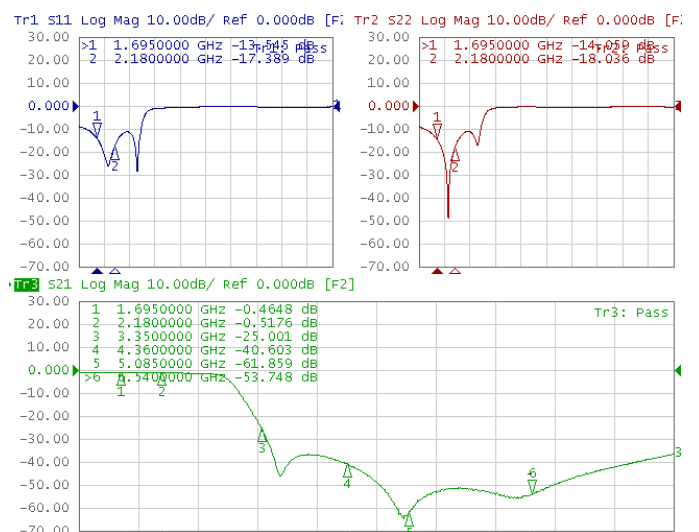
- Operating temperature range -40°C ~ 85°C

## Test Instruments : Agilent E5071C Network Analyzer

**BTLL0010050G9H6A30**



**BTLL0010051G7H6A10**

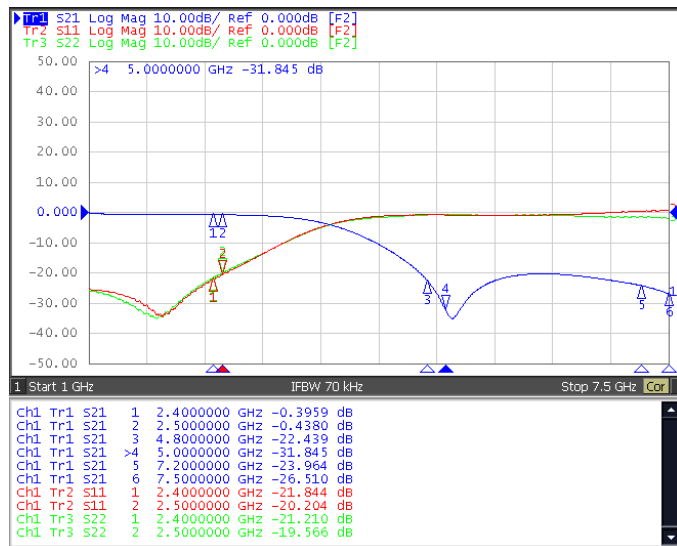


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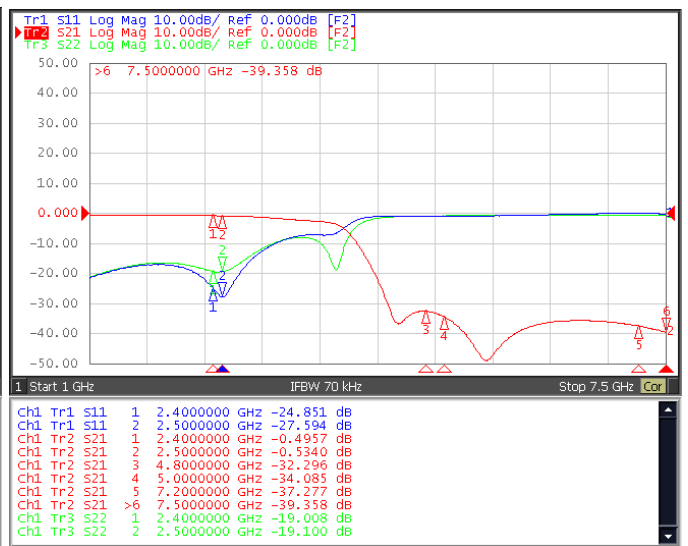
# Low Temperature Cofired Ceramic - BTLL Series

Test Instruments : Agilent E5071C Network Analyzer

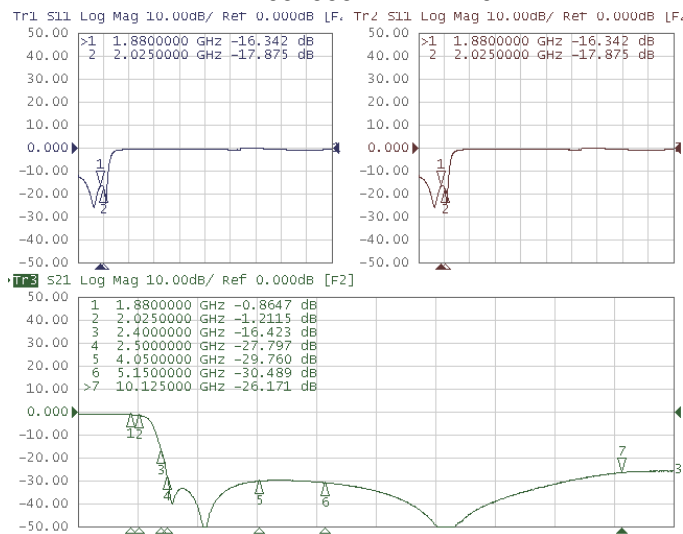
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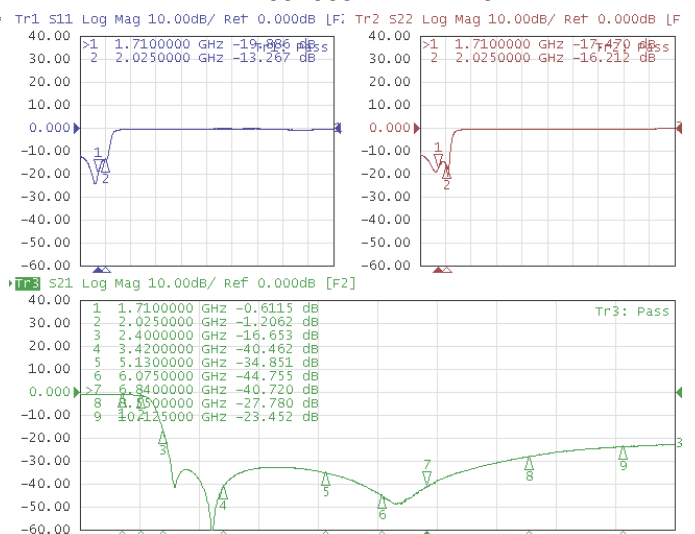
**BTLL0010052G4S1G20**



**BTLL001005EXVHBA10**



**BTLL001005EXVHBB10**



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## Low Temperature Cofired Ceramic - BTLL Series

### Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Application
BTLL0016080G8H6A10	690~960	0.9(25°C)	10	20dB Min. @ 1350~1920 MHz	GSM/WCDMA/LTE
		1.1(-40~85°C)		48dB Min. @ 2070~2880 MHz	
BTLL0016080G8H6A30	699~787	0.6	10	30dB Min. @ 1427~1920 MHz	GSM/WCDMA/LTE
	787~960	0.7		30dB Min. @ 2097~2880 MHz	
BTLL0016082G4S1A10	2400~2500	0.55	10	25dB Min. @ 4800~5000 MHz 20dB Min. @ 7200~7500 MHz	WLAN/BT
BTLL0016082G4S1A30	2300~2690	0.8	10	25dB Min. @ 4600~5400 MHz 25dB Min. @ 6900~8070 MHz	WLAN/BT
BTLL0016082G4S1A50	2400~2500	1	10	15dB Min. @ 3200 MHz 20dB Min. @ 3600 MHz 25dB Min. @ 4800~5000 MHz 20dB Min. @ 7200~7500 MHz	WLAN/BT
BTLL0016082G4S1C10	2400~2500	0.48	14	35dB Min. @ 4800~5000 MHz 27dB Min. @ 7200~7500 MHz	WLAN/BT
BTLL0016082G4S1C20	2400~2500	0.5	10	27dB Min. @ 4800~5000 MHz 30dB Min. @ 7200~7500 MHz	WLAN/BT
BTLL0016082G5S1A20	2400~2700	0.45	10	30dB Min. @ 4800~5400 MHz 23dB Min. @ 7200~8100 MHz	WLAN/BT
BTLL0016082G7S1B10	673~2690	0.5(25°C)	10	35dB Min. @ 4950~6000 MHz 37dB Min. @ 6000~7500 MHz 23dB Min. @ 7500~8100 MHz 20dB Min. @ 8100~12500 MHz	LTE
		0.7(-40~85°C)			
BTLL0016083G5S1A20	3300~3800	0.5	10	17dB Min. @ 6600~7600 MHz 20dB Min. @ 9900~11400 MHz	WiMAX
BTLL0016083G6S1A10	3300~3800	0.55	10	35dB Min. @ 6600~7600 MHz 25dB Min. @ 9900~11400 MHz	WiMAX
BTLL0016085G5S1A20	4900~5950	0.7	10	20dB Min. @ 9800 MHz 30dB Min. @ 11900 MHz	WLAN
BTLL001608JXVSB30	699~2690	0.18(0.15Typ)	15	23dB Min./ 25.7dB Typ. @ 5150~5960 MHz	LTE/WLAN/BT

- Operating temperature range -40°C ~ 85°C

## Low Temperature Cofired Ceramic - BTLL Series

### Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Application
BTLL001608DXVHBB10	450~698	0.5(0.23Typ)	10(16Typ)	30dB Min./ 35dB Typ. @ 1574~1605 MHz 30dB Min./ 51dB Typ. @ 1648~1698 MHz 30dB Min./ 47dB Typ. @ 1760~1830 MHz 25dB Min./ 29dB Typ. @ 2472~2494 MHz 13dB Min./ 28dB Typ. @ 2495~2547 MHz 30dB Min./ 34dB Typ. @ 5280~5490 MHz 25dB Min./ 29dB Typ. @ 5768~5943 MHz 20dB Min./ 26dB Typ. @ 6160~6405 MHz 18dB Min./ 24dB Typ. @ 6592~6792 MHz 17dB Min./ 21dB Typ. @ 7040~7320 MHz	GSM/WCDMA/LTE
	698~960	0.6(0.48Typ)	16(21Typ)	18dB Min./ 28dB Typ. @ 2640~2745 MHz 16dB Min./ 30dB Typ. @ 3296~3396 MHz 21dB Min./ 31dB Typ. @ 3520~3660 MHz 28dB Min./ 37dB Typ. @ 4120~4245 MHz 32dB Min./ 42dB Typ. @ 4400~4575 MHz 33dB Min./ 39dB Typ. @ 4944~5094 MHz 14dB Min./ 20dB Typ. @ 7416~7614 MHz 4dB Min./ 16dB Typ. @ 7902~8235 MHz	

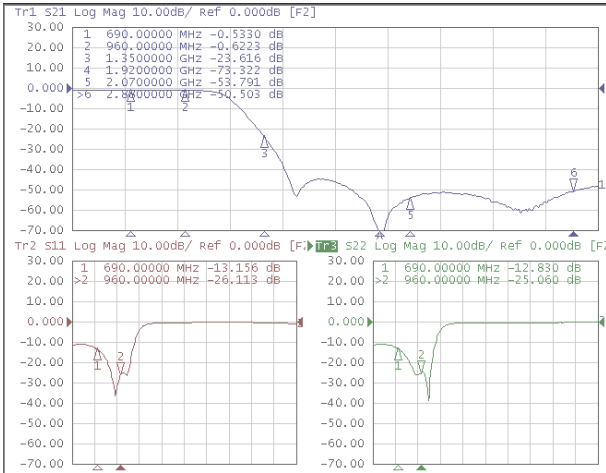
- Operating temperature range  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$



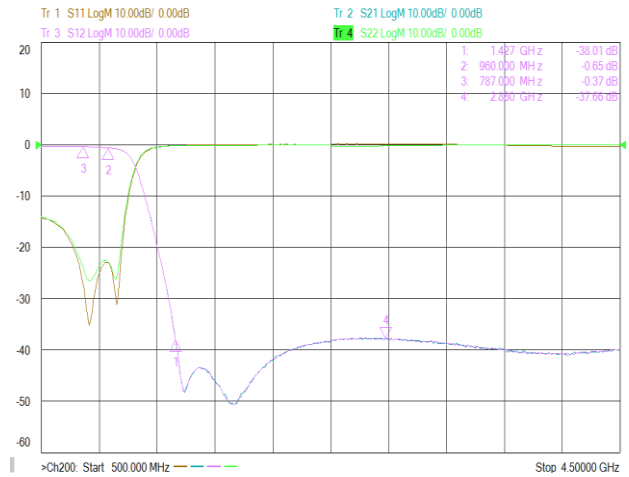
# Low Temperature Cofired Ceramic - BTLL Series

Test Instruments : Agilent E5071A Network Analyzer

**BTLL0016080G8H6A10**

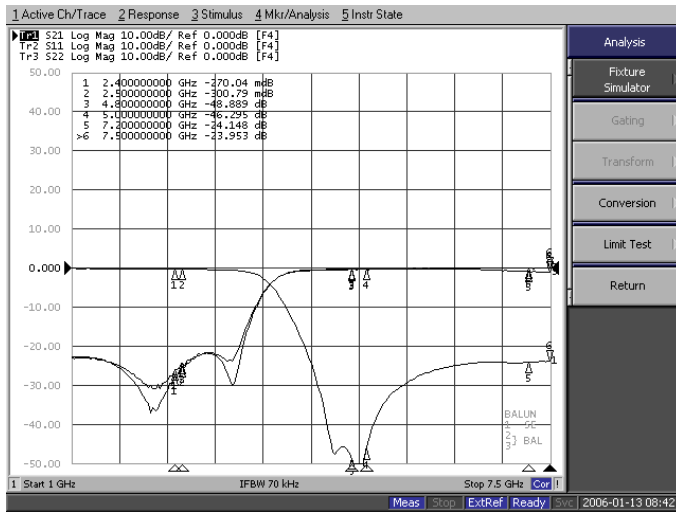


**BTLL0016080G8H6A30**

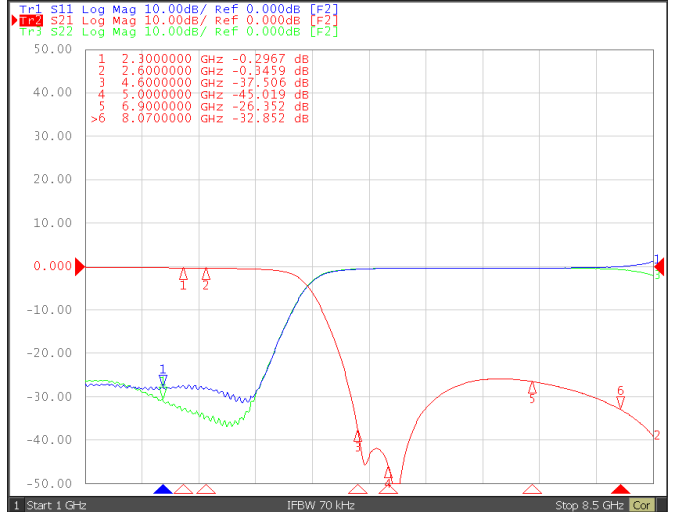


Test Instruments : Agilent E5071A Network Analyzer

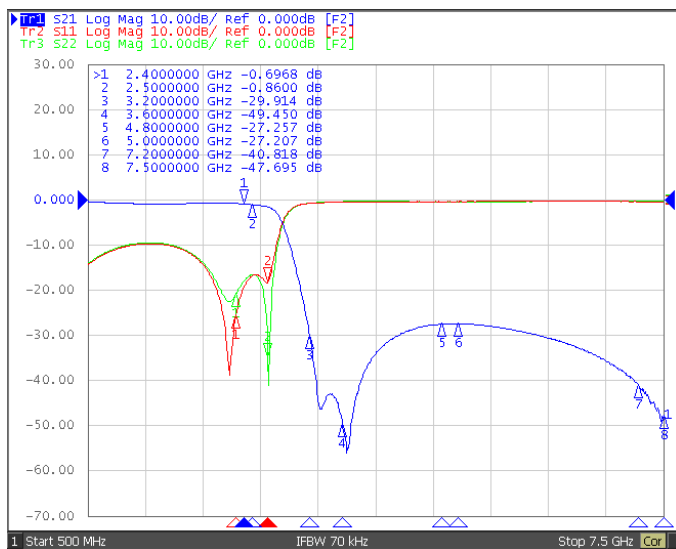
**BTLL0016082G4S1A10**



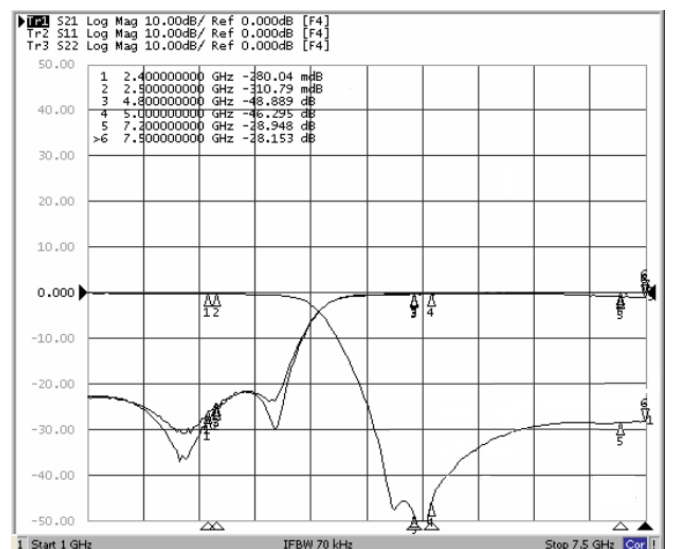
**BTLL0016082G4S1A30**



**BTLL0016082G4S1A50**



**BTLL0016082G4S1C10**

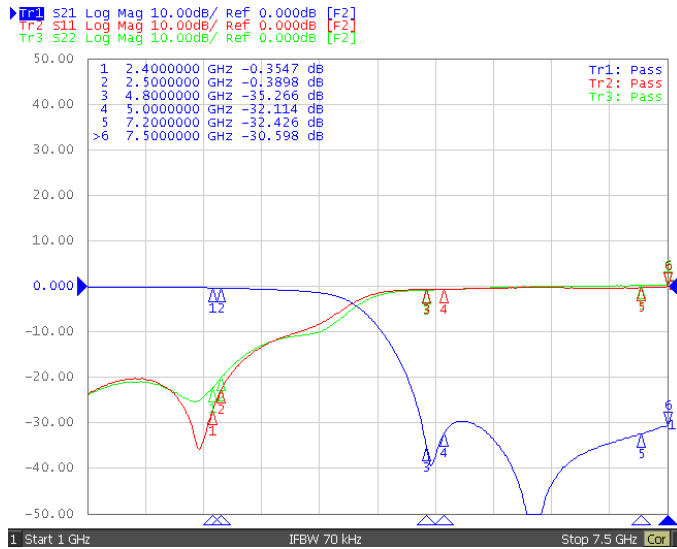


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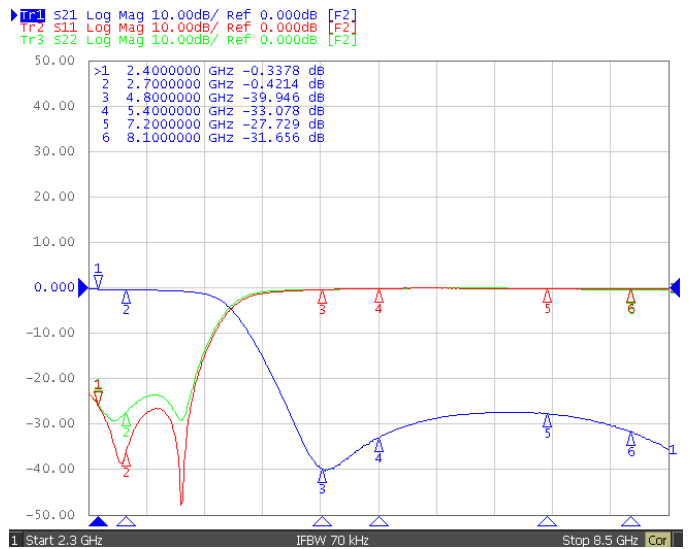
# Low Temperature Cofired Ceramic - BTLL Series

Test Instruments : Agilent E5071A Network Analyzer

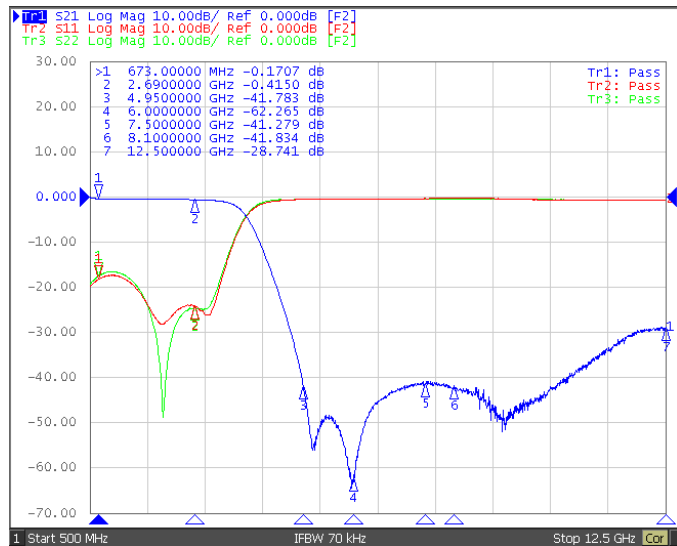
**BTLL0016082G4S1C20**



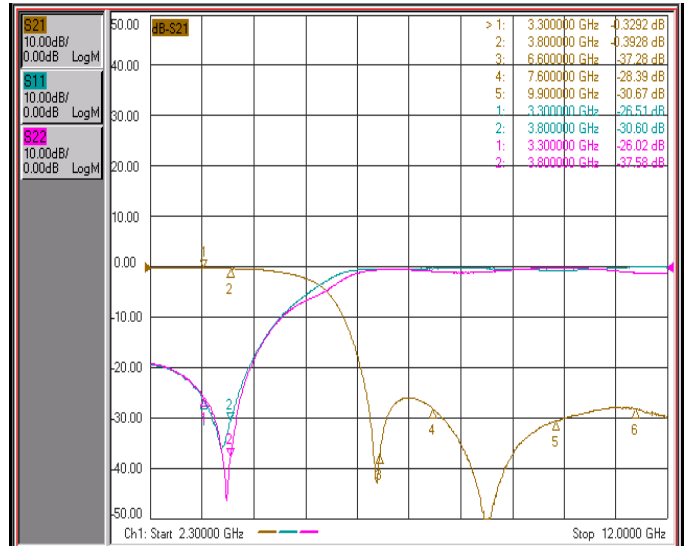
**BTLL0016082G5S1A20**



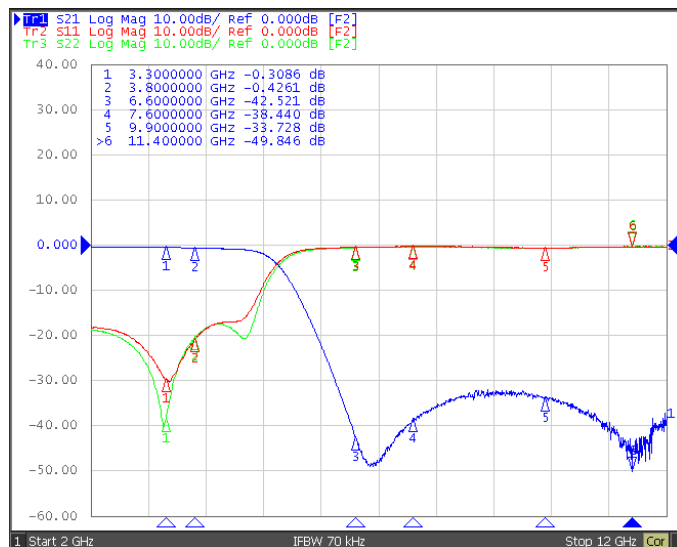
**BTLL0016082G7S1B10**



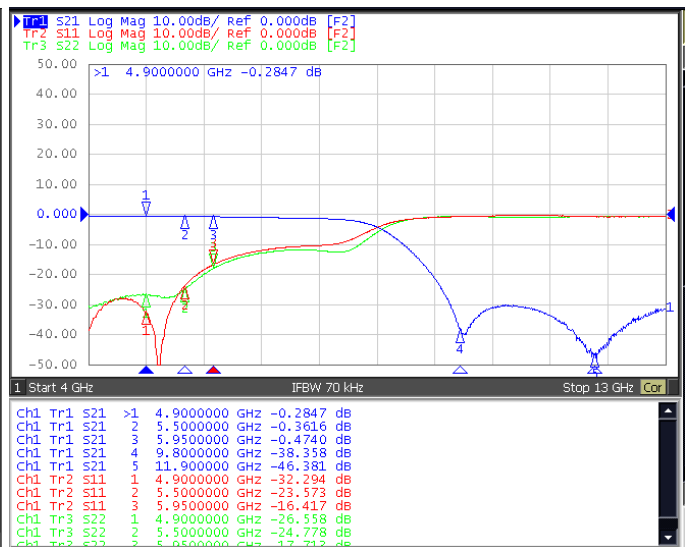
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**BTLL0016083G6S1A10**



**BTLL0016085G5S1A20**

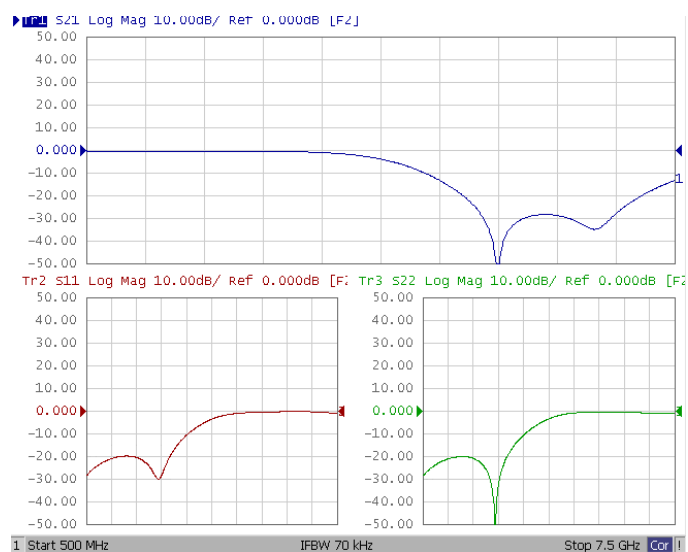


Please be sure to request approval specifications that provide further details of the products. Kindly note that the content of these specifications are subject to change or may be discontinued without prior notice. This product may not be designed/used in medical or high risk applications without Chilisin approval. Please contact our sales department before ordering.

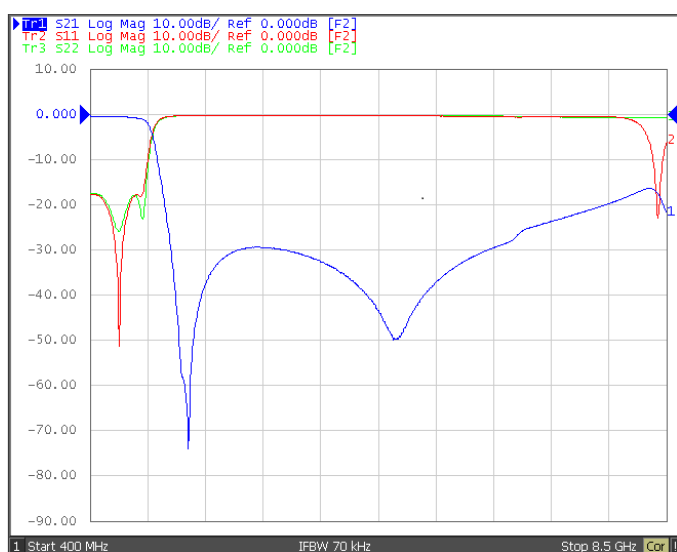
# Low Temperature Cofired Ceramic - BTLL Series

Test Instruments : Agilent E5071A Network Analyzer

### BTLL001608JXVSBA30



### BTLL001608DXVHBB10



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# Low Temperature Cofired Ceramic - BTLL Series

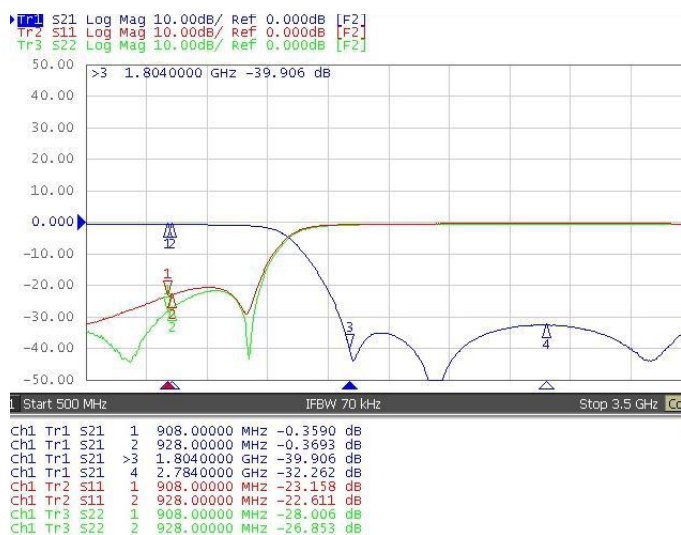
## Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Application
BTLL0020120G9S1B20	902~928	0.65	10	25dB Min. @ 2 x f0 25dB Min. @ 3 x f0	zigbee
BTLL0020122G0S1A20	1880~2025	1.4	10	30dB Min. @ 2400~2500 MHz 25dB Min. @ 4020~4045 MHz 30dB Min. @ 6030~6075 MHz	LTE
BTLL0020125G5S1A20	5149~5875	0.7	10	30dB Min. @ 2 x (f0±363)MHz 20dB Min. @ 3 x (f0±363)MHz	WLAN

- Operating temperature range  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$

## Test Instruments : Agilent E5071A Network Analyzer

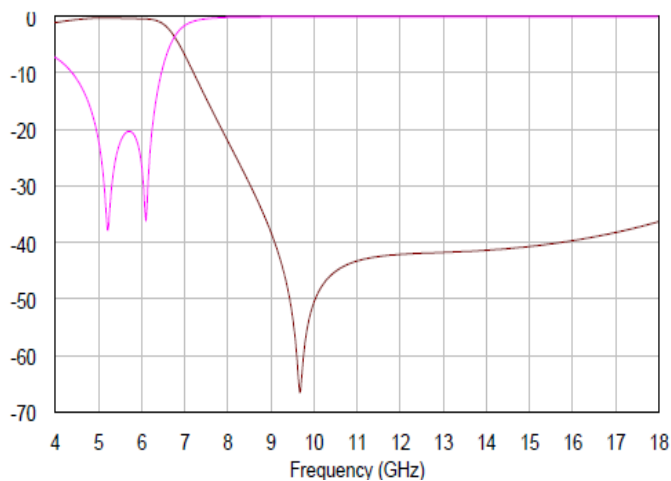
### BTLL0020120G9S1B20



### BTLL0020122G0S1A20



### BTLL0020125G5S1A20

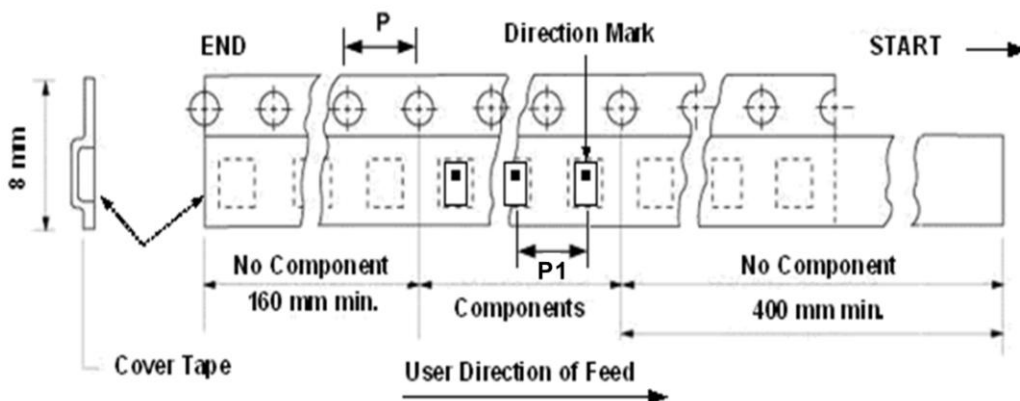


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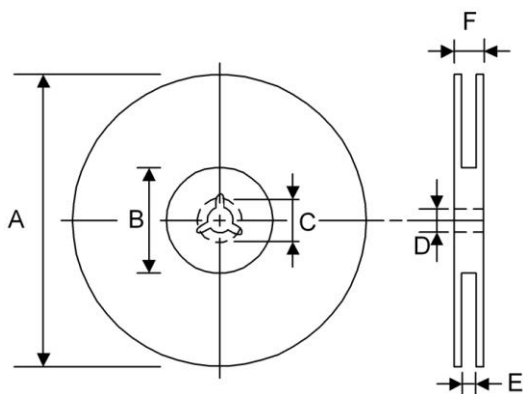
# Low Temperature Cofired Ceramic - BTLL Series

## Packaging Specifications

### Tape Dimensions



### Reel Dimensions



### Dimensions in mm

TYPE	Tape Dimensions		Reel Dimensions						Quantity PCS / REEL
	P	P1	A	B	C	D	E	F	
BTLL001005	4	2	178	60	-	13	9	12	10000
BTLL001608	4	4	178	60	-	13	9	12	4000
BTLL002012	4	4	178	60	-	13	9	12	4000

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