BTLD 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.

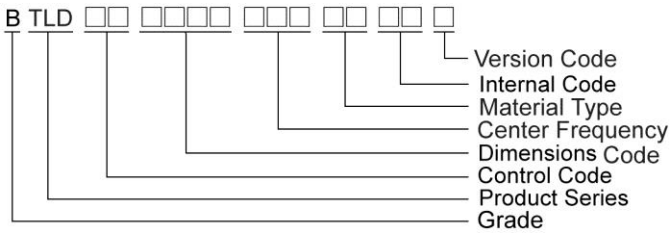
Features

- 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

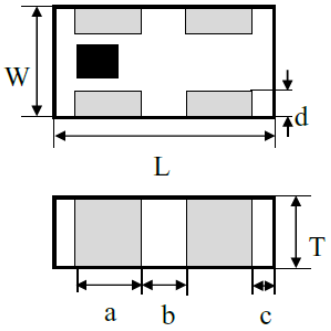
- WLAN ,Home RF, Bluetooth Module, WiFi 6E, etc.

Product Identification

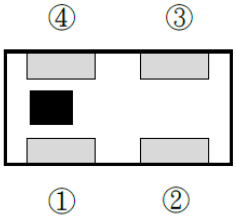


Shapes and Dimensions

FIG 1

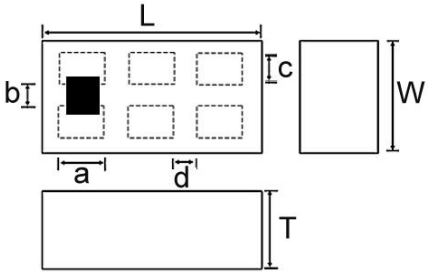


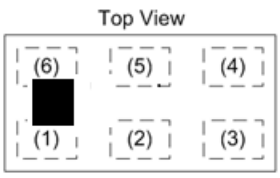
Terminal Configuration



① Common ② GND ③ High Band ④ Low Band

FIG 2

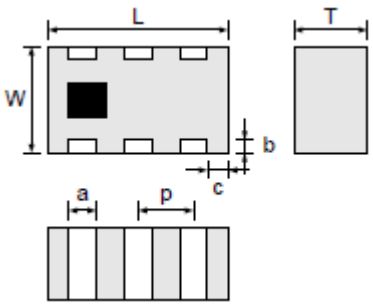




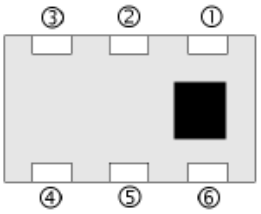
① ③ ⑤ GND ② Common ④ Low Freq. ⑥ High Freq.

Shapes and Dimensions

FIG 3

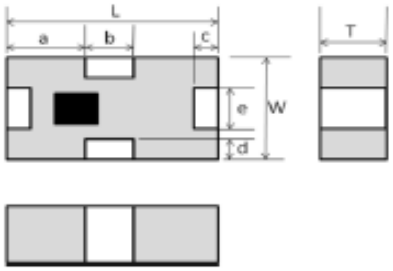


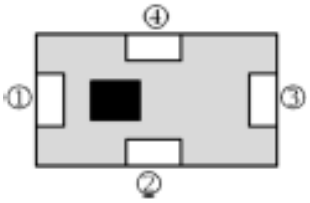
Terminal Configuration



Type	Port			GND
	High Freq.	Low Freq.	Common	
BTLD0016080G9S3A10	④	⑥	②	①③⑤
BTLD0016082G4S1A70	①	③	⑤	②④⑥
BTLD0016082G4S3YE0	①	③	⑤	②④⑥
BTLD0016082G4S3YF0	③	①	⑤	②④⑥
BTLD0016082G4S3WF0	③	①	⑤	②④⑥
BTLD001608MKXSMA10	④	⑥	②	①③⑤
BTLD001608KLXJMA10	④	⑥	②	①③⑤
BTLD001608MKXSPA10	⑥	④	②	①③⑤
BTLD001608KLXJPA10	⑥	④	②	①③⑤
BTLD001608KLXKPA90	⑥	④	②	①③⑤
BTLD001608KLXKMA90	④	⑥	②	①③⑤
BTLD001608KLXKND60	①	③	⑤	②④⑥
BTLD001608KLXKQD60	③	①	⑤	②④⑥
BTLD0020122G4S1B50	⑥	④	②	①③⑤
BTLD0020122G4S1B60	④	⑥	②	①③⑤
BTLD0020122G4S1D20	①	③	⑤	②④⑥
BTLD0020122G4S3A70	④	⑥	②	①③⑤
BTLD0020122G4S3A80	⑥	④	②	①③⑤
BTLD0020122G4S3E80	⑥	④	②	①③⑤

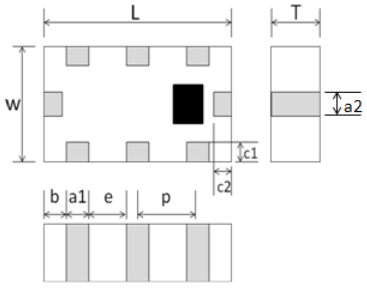
FIG 4

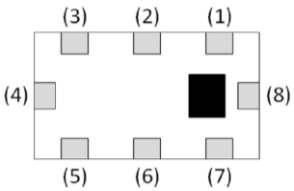




① Low Freq. ② Common ③ High Freq. ④ GND

FIG 5



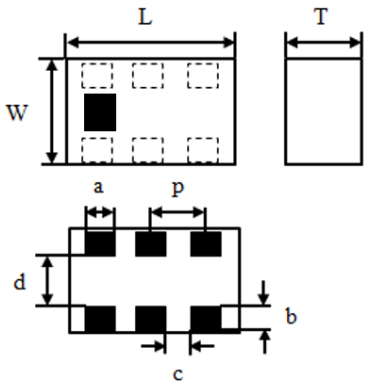


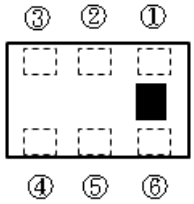
Type	Port			GND	NC
	High Freq.	Low Freq.	Common		
BTLD001608KLXKNA20	①	③	⑥	②⑤⑦	④⑧
BTLD001608KLXKQA20	③	①	⑥	②⑤⑦	④⑧
BTLD0020122G4S1A40	④	⑧	②	①③⑤⑥⑦	-

Shapes and Dimensions

Terminal Configuration

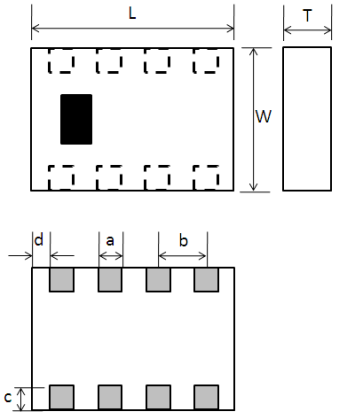
FIG 6

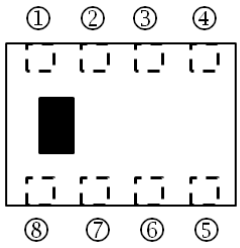




Type	Port			GND
	High Freq.	Low Freq.	Common	
BTLD002012DLXJVA10	①	③	⑤	②④⑥
BTLD002012JOXKSA10	④	⑥	②	①③⑤

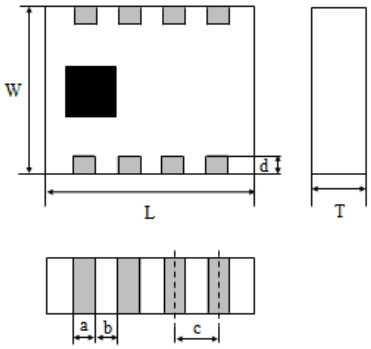
FIG 7

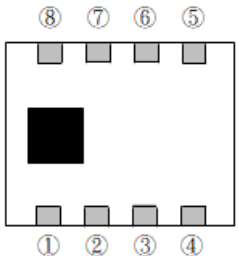




① TRXA ② ⑤ ⑥ ⑧ GND ③ RXG ④ TXG

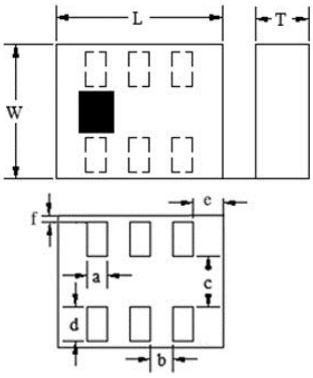
FIG 8

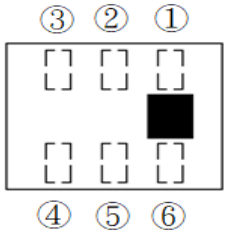




① ② ④ ⑥ ⑦ GND ③ Common
⑤ High Bend ⑧ Low Bend

FIG 9

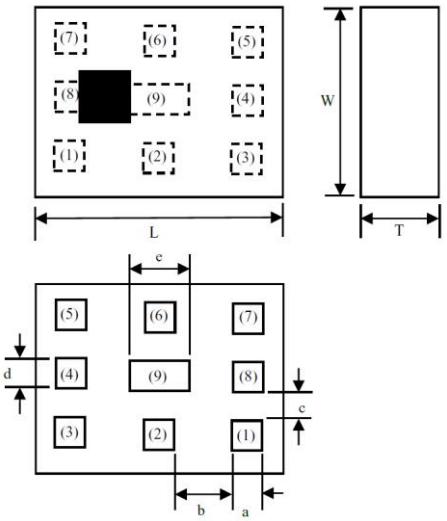




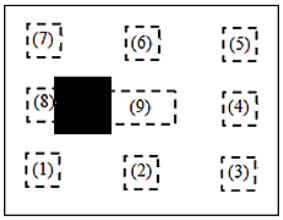
① High Frequency ② ④ ⑥ GND ③ Low Frequency ⑤ Common

Shapes and Dimensions

FIG 10



Terminal Configuration



① ③ ④ ⑥ ⑧ ⑨ GND ② Common ⑤ High Bend ⑦ Low Bend

Dimension in mm

TYPE	FIG	L	W	T	a	b	c	d
BTLD001005KLXKMA10	1	1.0±0.1	0.5±0.1	0.33Max	0.3±0.1	0.2±0.1	0.1±0.1	0.55±0.1
BTLD001608DFXJUA10	2	1.6±0.1	0.8±0.1	0.6±0.1	0.35±0.1	0.2±0.1	0.22±0.05	0.22±0.05
BTLD0020152G4S3A10	7	2.0±0.1	1.5±0.1	0.65±0.1	$0.25^{+0.1}_{-0.05}$	0.5±0.05	$0.25^{+0.1}_{-0.15}$	0.125±0.1
BTLD002520DHXKMA10	8	2.5±0.15	2.0±0.15	0.65Max	0.25±0.15	0.25±0.15	0.5±0.15	0.2±0.15
BTLD002520DHXKMB10	8	2.5±0.15	2.0±15	0.65Max	0.25±0.15	0.25±0.15	0.5±0.15	0.2±0.15
TYPE	**FIG**	**L**	**W**	**T**	**a**	**b**	**c**	**p**
BTLD0016080G9S3A10	3	1.6±0.15	0.8±0.1	0.6±0.1	0.3±0.1	$0.3^{+0.1}_{-0.2}$	0.1±0.1	0.55±0.1
BTLD0016082G4S1A70	3	1.6±0.15	0.8±0.1	0.6±0.1	0.3±0.1	$0.3^{+0.1}_{-0.2}$	0.1±0.1	0.55±0.1
BTLD0016082G4S3C00	3	1.6±0.15	0.8±0.1	0.5±0.1	0.3±0.1	$0.3^{+0.1}_{-0.2}$	0.1±0.1	0.55±0.1
BTLD0016082G4S3YE0	3	1.6±0.15	0.8±0.1	0.5±0.1	0.3±0.1	$0.3^{+0.1}_{-0.2}$	0.1±0.1	0.55±0.1
BTLD0016082G4S3YF0	3	1.6±0.15	0.8±0.1	0.5±0.1	0.3±0.1	$0.3^{+0.1}_{-0.2}$	0.1±0.1	0.55±0.1
BTLD0016082G4S3WF0	3	1.6±0.15	0.8±0.1	0.5±0.1	0.3±0.1	$0.3^{+0.1}_{-0.2}$	0.1±0.1	0.55±0.1
BTLD001608MKXSMA10	3	1.6±0.15	0.8±0.1	0.6±0.1	0.2±0.1	0.15±0.1	0.2±0.15	0.5±0.05
BTLD001608MKXSPA10	3	1.6±0.15	0.8±0.1	0.6±0.1	0.2±0.1	0.15±0.1	0.2±0.15	0.5±0.05
BTLD001608KLXJMA10	3	1.6±0.15	0.8±0.1	0.6±0.1	0.2±0.1	0.15±0.1	0.2±0.15	0.5±0.05
BTLD001608KLXJPA10	3	1.6±0.15	0.8±0.1	0.6±0.1	0.2±0.1	0.15±0.1	0.2±0.15	0.5±0.05
BTLD001608KLXKPA90	3	1.6±0.15	0.8±0.1	0.6±0.1	0.2±0.1	0.15±0.1	0.2±0.1	0.5±0.05
BTLD001608KLXKMA90	3	1.6±0.15	0.8±0.1	0.6±0.1	0.2±0.1	0.15±0.1	0.2±0.1	0.5±0.05
BTLD001608KLXKND60	3	1.6±0.15	0.8±0.1	0.7±0.1	0.2±0.1	0.15±0.1	0.2±0.15	0.5±0.05
BTLD001608KLXKQD60	3	1.6±0.15	0.8±0.1	0.7±0.1	0.2±0.1	0.15±0.1	0.2±0.15	0.5±0.05
BTLD0020120G9S3A10	3	2.0±0.15	1.25±0.1	0.9±0.1	0.3±0.15	0.2±0.1	0.2±0.15	0.65±0.15
BTLD0020122G4S1B50	3	2.0±0.15	1.25±0.15	0.5±0.1	0.3±0.2	0.3±0.2	0.2±0.2	0.65±0.2
BTLD0020122G4S1B60	3	2.0±0.15	1.25±0.15	0.5±0.1	0.3±0.2	0.3±0.2	0.2±0.2	0.65±0.2
BTLD0020122G4S1D20	3	2.0±0.15	1.25±0.15	0.95±0.1	$0.3^{+0.1}_{-0.15}$	$0.3^{+0.1}_{-0.2}$	0.2±0.2	0.65±0.2
BTLD0020122G4S3A70	3	2.0±0.15	1.25±0.15	0.5±0.1	0.3±0.2	0.3±0.2	0.2±0.2	0.65±0.2
BTLD0020122G4S3A80	3	2.0±0.15	1.25±0.15	0.5±0.1	0.3±0.2	0.3±0.2	0.2±0.2	0.65±0.2
BTLD0020122G4S3E80	3	2.0±0.15	1.25±0.15	0.5±0.1	0.3±0.2	0.3±0.2	0.2±0.2	0.65±0.2

Dimension in mm

TYPE	FIG	L	W	T	a	b	c	d	e
BTLD0016082G4S3AL0	4	1.6±0.15	$0.8^{+0.2}_{-0.1}$	$0.6^{+0.05}_{-0.1}$	0.65±0.15	$0.3^{+0.1}_{-0.15}$	0.15±0.1	0.15±0.1	$0.3^{+0.1}_{-0.15}$
BTLD002520JOXKSA10	10	2.5±0.15	2±0.15	0.65Max	0.4±0.1	0.55±0.1	0.3±0.1	0.4±0.1	0.9±0.15
TYPE	**FIG**	**L**	**W**	**T**	**a**	**b**	**c**	**d**	**p**
BTLD002012DLXJVA10	6	2.0±0.1	1.25±0.1	0.9±0.1	0.35±0.1	0.275±0.1	0.3±0.1	0.6±0.1	0.65±0.05
BTLD002012JOXKSA10	6	2.0±0.1	1.25±0.1	0.6Max	0.35±0.1	0.275±0.1	0.3±0.1	0.6±0.1	0.65±0.1

TYPE	FIG	L	W	T	a	b	c	d	e	f
BTLD002520EIXSTA10	9	2.5±0.1	2±0.1	0.8±0.1	0.3±0.1	0.35±0.1	0.75±0.1	0.525±0.1	0.45±0.1	0.1±0.1

TYPE	FIG	L	W	T	a1	a2	b	c1	c2	e	p
BTLD001608KLXKNA20	5	1.6±0.1	0.8±0.1	0.7Max	0.2±0.1	0.2±0.1	0.2±0.15	0.15±0.1	0.15±0.1	0.3±0.1	0.5±0.05
BTLD001608KLXKQA20	5	1.6±0.1	0.8±0.1	0.7Max	0.2±0.1	0.2±0.1	0.2±0.15	0.15±0.1	0.15±0.1	0.3±0.1	0.5±0.05
BTLD0020122G4S1A30	5	2.0±0.15	1.25±0.1	0.95±0.1	$0.3^{+0.1}_{-0.15}$	$0.3^{+0.1}_{-0.15}$	0.2±0.15	$0.3^{+0.1}_{-0.2}$	$0.3^{+0.1}_{-0.2}$	0.35±0.1	0.65±0.2
BTLD0020122G4S1A40	5	2.0±0.15	1.25±0.1	0.95±0.1	$0.3^{+0.1}_{-0.15}$	$0.3^{+0.1}_{-0.15}$	0.2±0.15	$0.3^{+0.1}_{-0.2}$	$0.3^{+0.1}_{-0.2}$	0.35±0.1	0.65±0.2

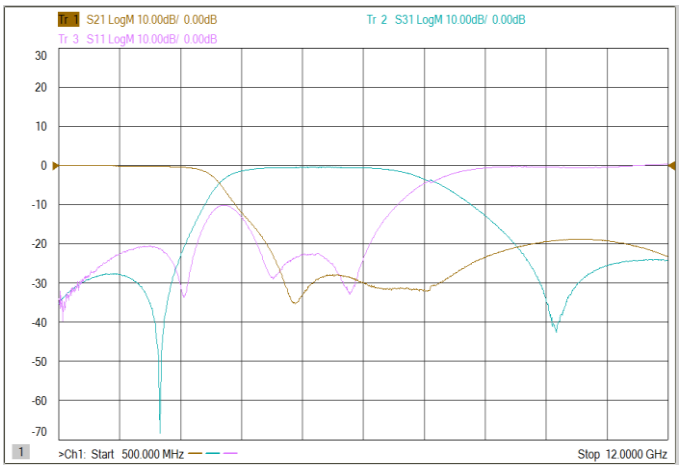
Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max		Return Loss (dB)Min	Attenuation	Application
BTLD001005KLXKMA10	2400~2500	25℃	0.5	12(20Typ)	23dB Min./ 27.8dB Typ.@ 4800~6000 MHz	WiFi
		-40~85℃	0.6		23dB Min./ 27.2dB Typ.@ 7200~7500 MHz	
	4900~5950	25℃	0.8	10(18.5Typ)	25dB Min./ 27.5dB Typ.@ 30~2400 MHz 32dB Min./ 38.8dB Typ.@ 2400~2500 MHz 23dB Min./ 27.1dB Typ.@ 2500~2690 MHz 20dB Min./ 25dB Typ.@ 9800~11900 MHz	
		-40~85℃	1			

- Operating temperature range －40℃～85℃

Test Instruments：Agilent E5071C Network Analyzer

BTLD001005KLXKMA10



Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Application
BTLD001608DFXJUA10	698~960	0.9(0.75Typ)	10(18.5Typ)	25dB Min./ 30dB Typ.@ 1710~2700 MHz	GPS WCDMA LTE
	1710~2700	0.8(0.65Typ)	10(17Typ)	20dB Min./ 26.5dB Typ.@ 698~960 MHz 20dB Min./ 22dB Typ.@ 5150~5850 MHz	
BTLD0016080G9S3A10	704~960	0.5	14	15dB Min.@ 1710~2170 MHz 10dB Min.@ 2170~2690 MHz	LTE
	1710~1800	0.7	11.8	20dB Min.@ 704~960 MHz	
	1800~1990	0.6			
	1990~2170	0.55			
	2170~2690	1.4	6.5		
BTLD0016082G4S1A70	2400~2500	0.6	10	20dB Min.@ 4800~6000 MHz 20dB Min.@ 7200~7500 MHz	WLAN
	5100~5900	1.4	10	35dB Min.@ 2400~2500 MHz 18dB Min.@ 3300~3900 MHz 12dB Min.@ 9800~11900 MHz	
BTLD0016082G4S3AL0	2400~2500	0.4	12.74	20dB Min.@ 4900~5850 MHz	WLAN
	4900~5850	0.6	10.16	20dB Min.@ 2400~2500 MHz	
BTLD0016082G4S3YE0	2400~2500	0.45	12.74	21dB Min.@ 4800~5000 MHz 23dB Min.@ 5000~6000 MHz 25dB Min.@ 7200~7500 MHz	WLAN
	4900~5950	0.75	11.73	27dB Min.@ 824~2170 MHz 32dB Min.@ 2400~2500 MHz 23dB Min.@ 9800~11900 MHz	
BTLD0016082G4S3YF0	2400~2500	0.45	12.74	21dB Min.@ 4800~5000 MHz 23dB Min.@ 5000~6000 MHz 25dB Min.@ 7200~7500 MHz	WLAN
	4900~5950	0.75	11.73	27dB Min.@ 824~2170 MHz 32dB Min.@ 2400~2500 MHz 23dB Min.@ 9800~11900 MHz	

- Operating temperature range －40℃～85℃

Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Application
BTLD001608KLXKPA90 BTLD001608KLXKMA90	2400~2500	0.6(0.51Typ)	12(19Typ)	2dB Min./ 4.7dB Typ.@ 3300~4800 MHz 33dB Min./ 33.6dB Typ.@ 4800~5000 MHz 28dB Min./ 37dB Typ.@ 5170~7125 MHz 30dB Min./ 43.8dB Typ.@ 7200~7500 MHz 24dB Min./ 28.8dB Typ.@ 9600~10000 MHz 17dB Min./ 22.4dB Typ.@ 12000~12500 MHz	WiFi 6E
	5170~7125	0.9(0.74Typ)	10(15.8Typ)	35dB Min./ TBDdB Typ.@ 70~108 MHz 35dB Min./ 41dB Typ.@ 700~915 MHz 35dB Min./ 41.4dB Typ. @ 915~960 MHz 35dB Min./ 44.8dB Typ.@ 1425~1470 MHz 35dB Min./ 44.9dB Typ.@ 1470~1557 MHz 35dB Min./ 46.9dB Typ.@ 1557~1607 MHz 35dB Min./ 53.7dB Typ.@ 1710~1785 MHz 35dB Min./ 69.6dB Typ.@ 1805~1850 MHz 35dB Min./ 54.5dB Typ.@ 1850~1910 MHz 35dB Min./ 47.6dB Typ.@ 1910~2020 MHz 30dB Min./ 40.8dB Typ.@ 2110~2200 MHz 26dB Min./ 35dB Typ.@ 2300~2400 MHz 25dB Min./ 32.5dB Typ.@ 2400~2500 MHz 20dB Min./ 28.9dB Typ.@ 2500~2690 MHz 10dB Min./ 20.1dB Typ.@ 3400~3800 MHz 25dB Min./ 27.3dB Typ.@ 10340~14250 MHz 20dB Min./ 25.2dB Typ.@ 15510~19500 MHz TBDdB Min./ Typ. @ 19500~21375 MHz	

- Operating temperature range －40℃～85℃

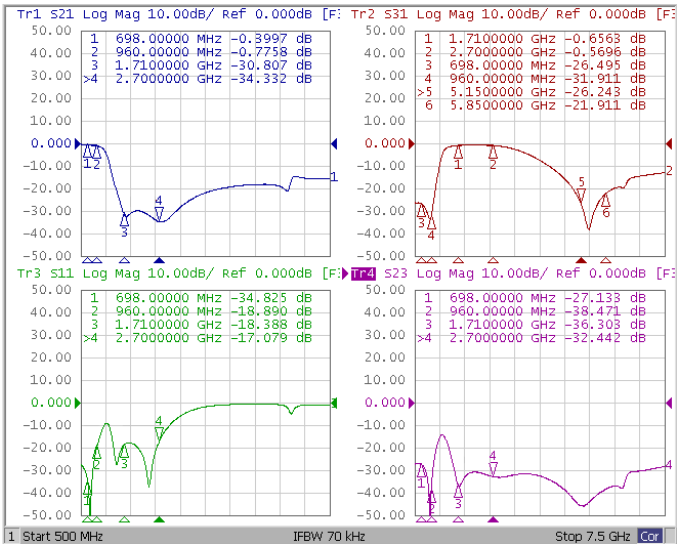
Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB) Max(Typ)	Return Loss (dB) Min(Typ)	Isolation (dB) Min(Typ)	Attenuation	Application
BTLD0016082G4S3WF0	2400~2500	0.5	10	30	21dB Min.@ 4800~5000 MHz 23dB Min.@ 5000~6000 MHz 25dB Min.@ 7200~7500 MHz	WLAN
	4900~5950	0.75	10	20	26dB Min.@ 824~1990 MHz 30dB Min.@ 2170~2500 MHz 10dB Min.@ 8100~8800 MHz 15dB Min.@ 8820~9800 MHz 23dB Min.@ 9800~11900 MHz	
BTLD001608KLXKNA20 BTLD001608KLXKQA20	2400~2500	25℃ 0.35(0.3) -40~85℃ 0.45(0.3)	10.88	-	20dB Min./ 26dB Typ.@ 4800~5000 MHz 22dB Min./ 25.5dB Typ.@ 5000~5950 MHz 20dB Min./ 26dB Typ.@ 7200~7500 MHz	WLAN
	4900~5950	25℃ 0.50(0.4) -40~85℃ 0.60(0.4)			26dB Min./ 27dB Typ.@ 824~2170 MHz 30dB Min./ 40dB Typ.@ 2400~2500 MHz 25dB Min./ 27.5dB Typ.@ 9800~11900 MHz 15dB Min./ 25dB Typ.@ 15000~18000 MHz	
BTLD001608MKXSMA10 BTLD001608MKXSPA10	1550~1580	0.6	10	20	12dB Min.@ 2400~2500 MHz 12dB Min.@ 4900~6000 MHz	GPS/WLAN
	1594~1610	0.7				
	2400~2500	0.7		12	20dB Min.@ 1550~1610 MHz	
	4900~6000	0.6				
BTLD001608KLXJPA10 BTLD001608KLXJMA10	2400~2500	25℃ 0.6 -40~105℃ 0.8	10(24.1)	38(43.3)	30dB Min./ 37.2dB Typ.@ 4800~5000 MHz 30dB Min./ 38.1dB Typ.@ 5000~5950 MHz 30dB Min./ 38.3dB Typ.@ 7200~7500 MHz	WLAN
	4900~5950	25℃ 0.78 -40~105℃ 0.98	10(15.2)	38(39.3)	26dB Min./ 31.9dB Typ.@ 824~2170 MHz 30dB Min./ 43.2dB Typ.@ 2400~2500 MHz 25dB Min./ 28.8dB Typ.@ 9800~11900 MHz 15dB Min./ 18.5dB Typ.@ 14700~17850 MHz	
BTLD001608KLXKND60	2400~2500	25℃ 0.85(0.74) -40~105℃ 0.95	13(18.8)	40(43)	9dB Min./ 11.5dB Typ.@ 100~1000 MHz 30dB Min./ 34dB Typ.@ 4800~7125 MHz 30dB Min./ 33.5dB Typ.@ 7200~7500 MHz 20dB Min./ 34dB Typ.@ 7500~12000 MHz	WiFi 6E
	5170~5875	25℃ 1.05(0.78) -40~105℃ 1.25	11(15.4)	25(32.5)	35dB Min./ 42.5dB Typ.@ 100~1000 MHz 30dB Min./ 35.5dB Typ.@ 1000~2400 MHz 40dB Min./ 42.5dB Typ.@ 2400~2500 MHz 10dB Min./ 13.5dB Typ.@ 2500~3500 MHz 25dB Min./ 28.5dB Typ.@ 10340~14250 MHz 25dB Min./ 38.5dB Typ.@ 15510~17625 MHz TBDdB Min./ Typ.@ 17625~21375 MHz	
	5875~7125	25℃ 1.05(0.76) -40~105℃ 1.25				
BTLD001608KLXKQD60	2400~2500	TBD(0.75)	10(18.8)	TBD(42)	TBDdB Min./ 11.5dB Typ.@ 100~1000 MHz TBDdB Min./ 34dB Typ.@ 4800~7125 MHz TBDdB Min./ 33.5dB Typ.@ 7200~7500 MHz TBDdB Min./ 34dB Typ.@ 7500~12000 MHz	WiFi 6E
	5170~5875	TBD(0.78)	10(15.4)	TBD (32.5)	TBDdB Min./ 42.5dB Typ.@ 100~1000 MHz TBDdB Min./ 35.5dB Typ.@ 1000~2400 MHz TBDdB Min./ 41.5dB Typ.@ 2400~2500 MHz TBDdB Min./ 13dB Typ.@ 2500~3500 MHz TBDdB Min./ 28.5dB Typ.@ 10340~14250 MHz TBDdB Min./ 38.5dB Typ.@ 15510~17625 MHz TBDdB Min./ Typ.@ 17625~21375 MHz	
	5875~7125	TBD(0.76)				

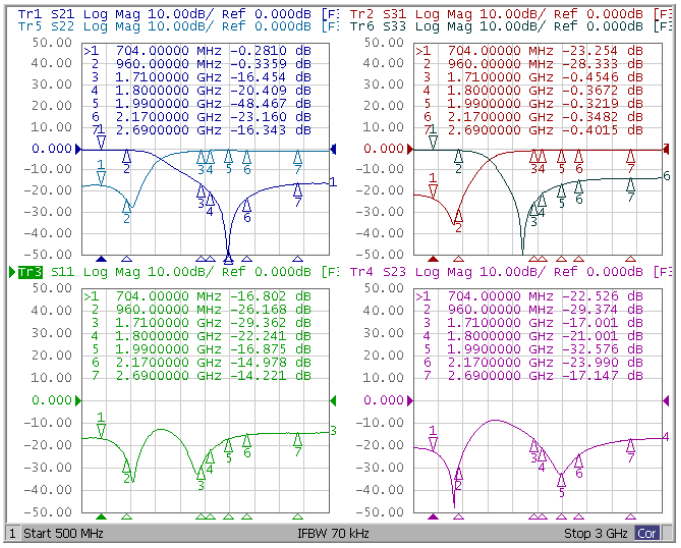
- Operating temperature range －40℃～85℃

Test Instruments：Agilent E5071C Network Analyzer

BTLD001608DFXJUA10



BTLD0016080G9S3A10



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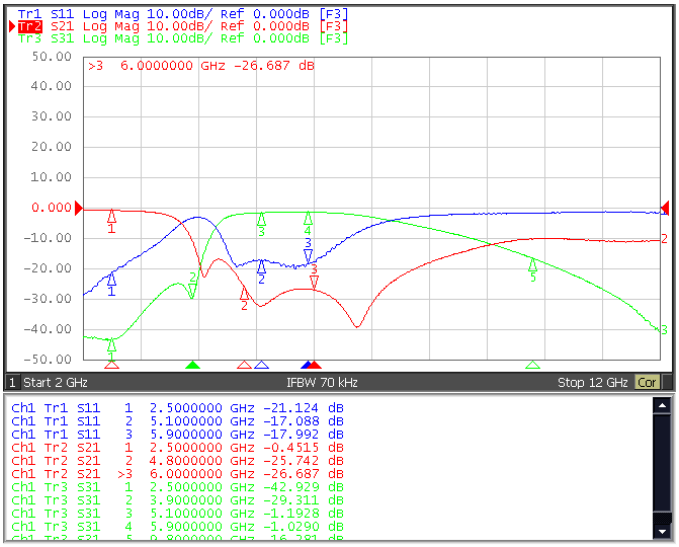

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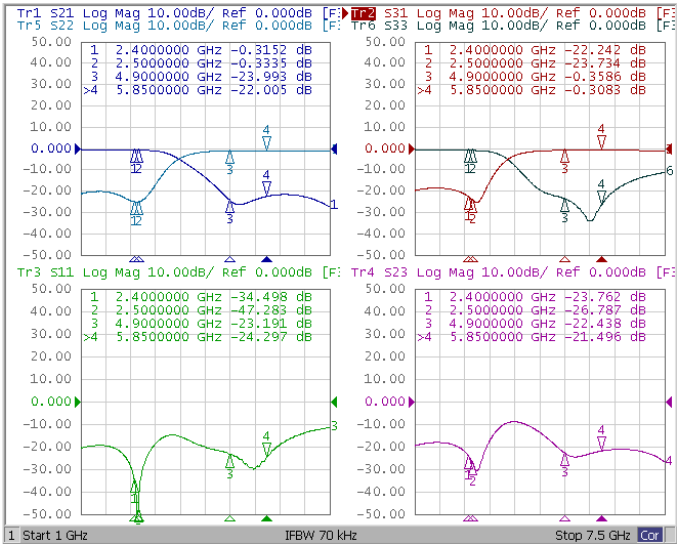

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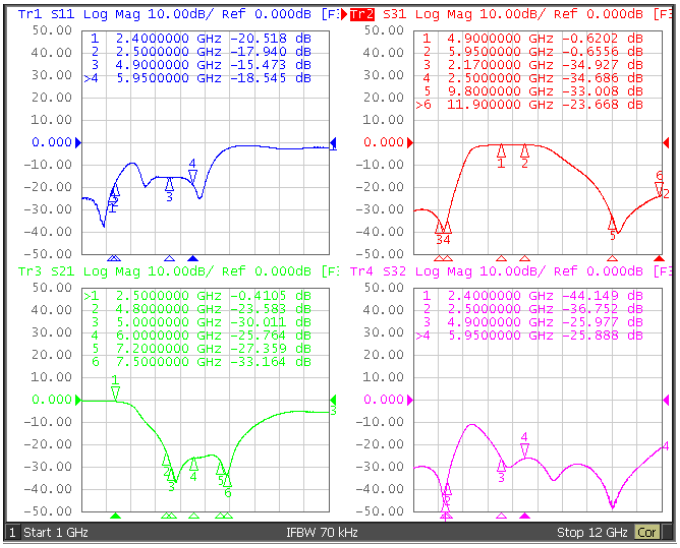

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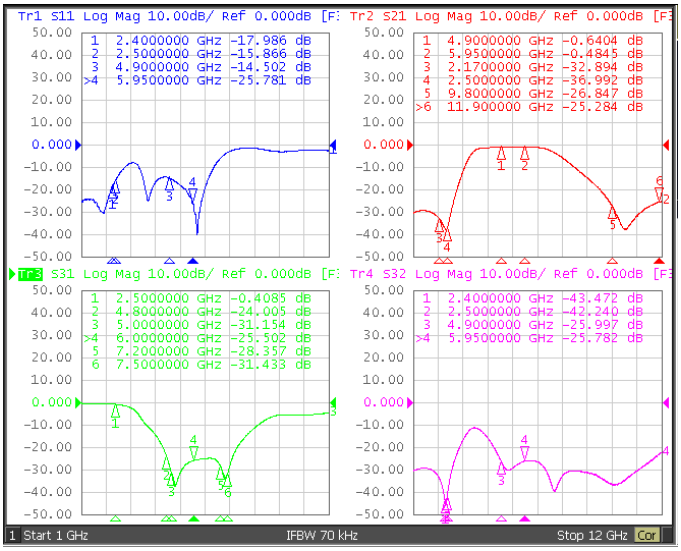
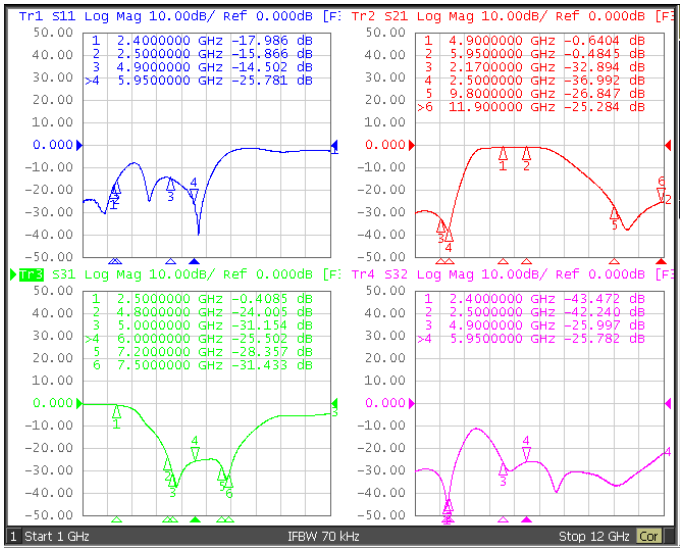


Test Instruments：Agilent E5071C Network Analyzer

BTLD0016082G4S3WF0



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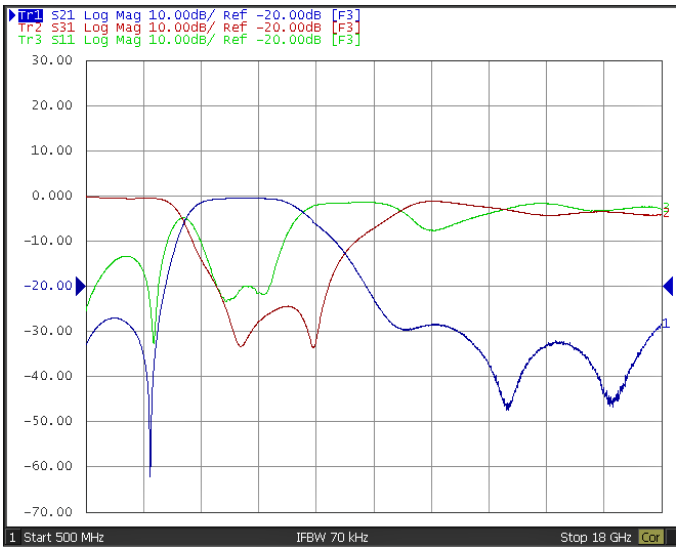

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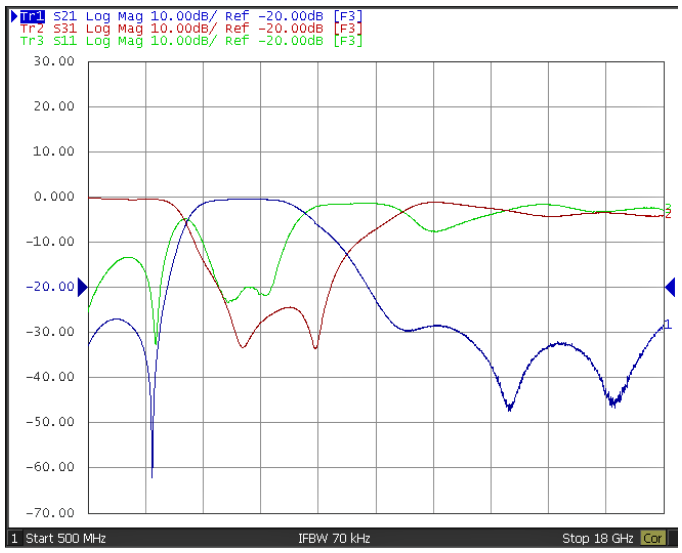

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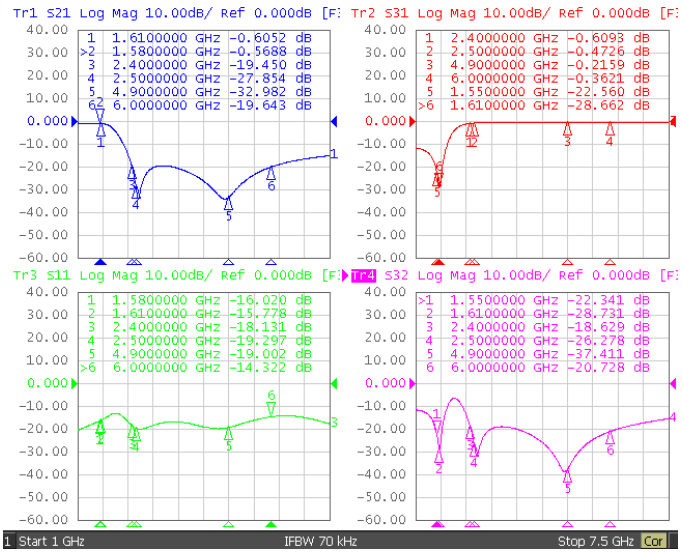

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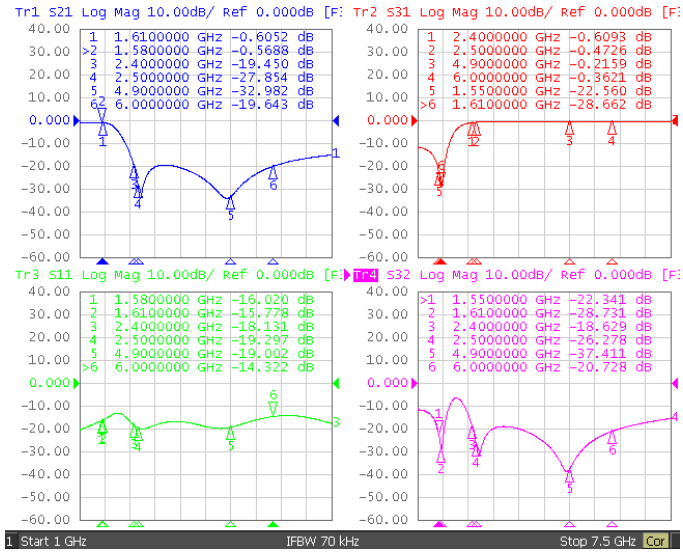

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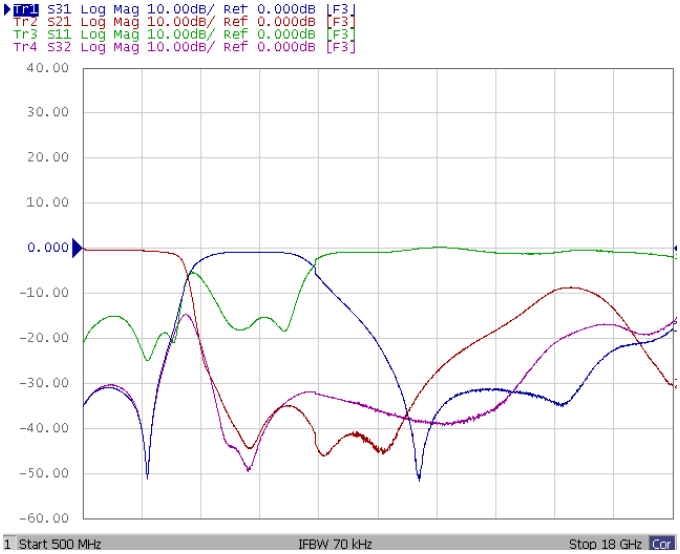
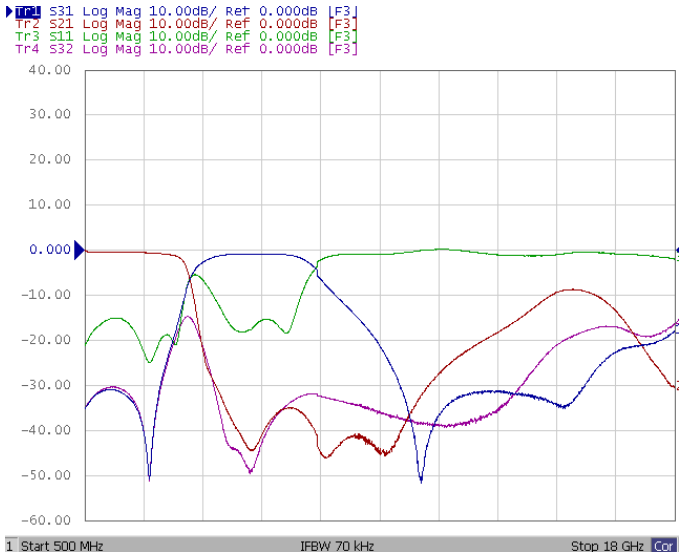


Test Instruments：Agilent E5071C Network Analyzer

BTLD001608KLXJMA10



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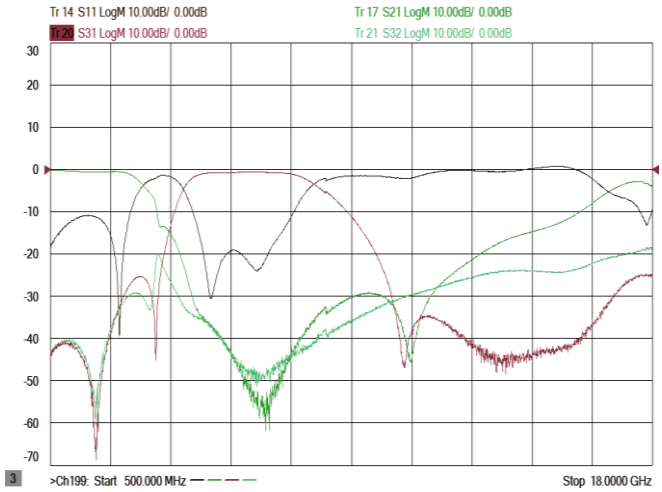
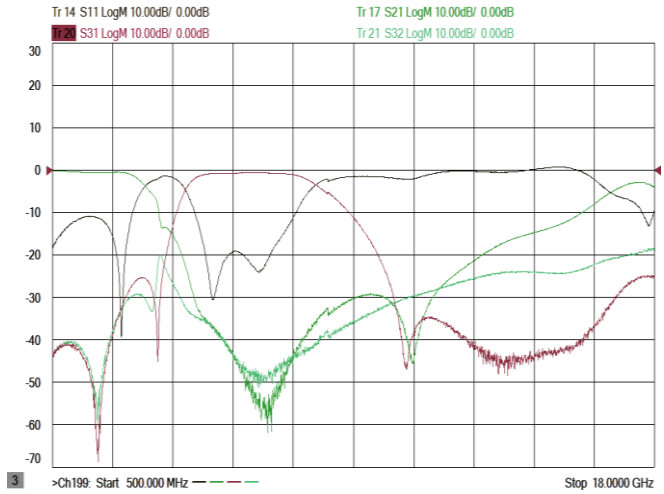


BTLD001608KLXKMA90



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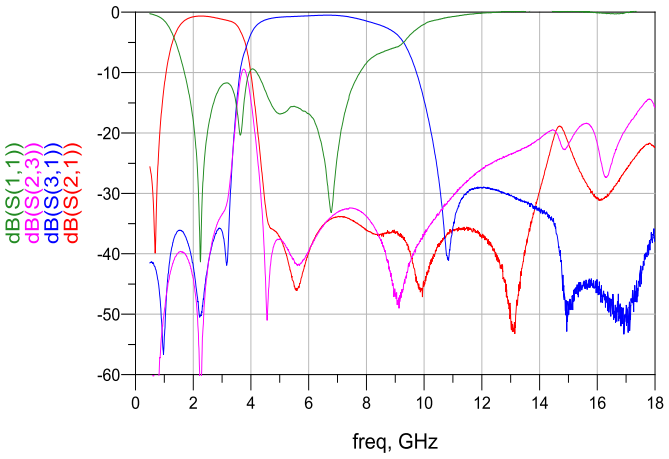
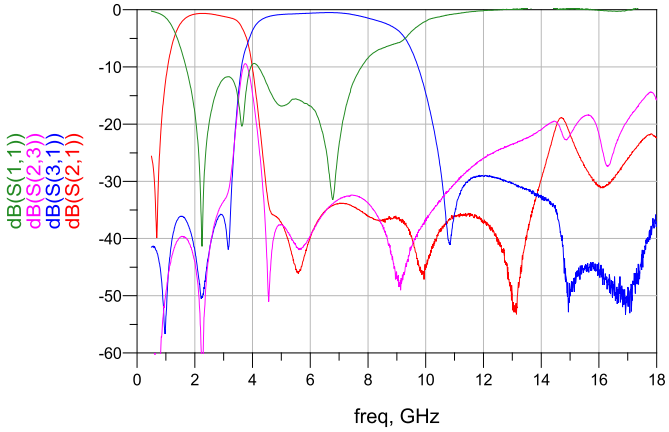


BTLD001608KLXKQD60



Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Isolation (dB)Min	Application
BTLD002012DLXJVA10	699~960	0.9	10	25dB Min.@ 1427~1511 MHz 30dB Min.@ 1559~1610 MHz 35dB Min.@ 1805~2170 MHz 30dB Min.@ 2400~2700 MHz 20dB Min.@ 3400~3800 MHz 20dB Min.@ 5150~5850 MHz	25	GSM WCDMA LTE
	1427~2200	0.9	10	25dB Min.@ 699~960 MHz	25	
	3400~3800	0.7	10		-	
	5150~5925	0.9	10		-	
BTLD002012JOXKSA10	617~960	0.35(0.2Typ)	12(17.5Typ)	17dB Min./ 20dB Typ.@ 3300~3400 MHz 23dB Min./ 26dB Typ.@ 3400~4200 MHz 23dB Min./ 26.9dB Typ.@ 4400~5000 MHz 28dB Min./ 33.2dB Typ.@ 5150~5925 MHz	30	GSM WCDMA LTE NR WiFi
	1427~1511	0.45(0.3Typ)			30	
	1710~2170	0.55(0.45Typ)			23	
	2300~2496	0.75(0.6Typ)				
	2496~2690	0.95(0.75Typ)				
	3300~3400	1.4(1.15Typ)	12(19Typ)	30dB Min./ 36.8dB Typ.@ 617~960 MHz 30dB Min./ 35.5dB Typ.@ 1427~1511 MHz 25dB Min./ 27.3dB Typ.@ 1710~2170 MHz 22dB Min./ 27dB Typ.@ 2170~2690 MHz 22dB Min./ 27dB Typ.@ 2170~2690 MHz 10dB Min./ 23.5dB Typ.@ 1.545~1.7775 GHz	18	
	3400~4200	1.1(0.95Typ)			23	
	4400~5000	0.7(0.5Typ)			23	
	5150~5925	0.55(0.4Typ)			28	
BTLD0020122G4S1A40	2400~2500	0.7	11.73	20dB Min.@ 4800~6000 MHz	-	WLAN
	4900~5850	0.9	10.88	20dB Min.@ 2400~2500 MHz		
BTLD0020122G4S1B50	2400~2500	25℃ 0.5 -40~85℃ 0.65	10	20dB Min.@ 4800~5000 MHz 20dB Min.@ 7200~7500 MHz	-	WLAN
	4900~5950	25℃ 1 -40~85℃ 1.15	10	20dB Min.@ 2400~2500 MHz 15dB Min.@ 9800~11900 MHz		
BTLD0020122G4S1B60	2400~2500	25℃ 0.5 -40~85℃ 0.7	10	20dB Min.@ 4800~5000 MHz 20dB Min.@ 7200~7500 MHz	-	WLAN
	4900~5950	25℃ 1 -40~85℃ 1.2	10	20dB Min.@ 1800~2500 MHz 15dB Min.@ 9800~11900 MHz		
BTLD0020122G4S1D20	2400~2500	0.7	10	20dB Min.@ 4800~6000 MHz 15dB Min.@ 7200~7500 MHz	-	WLAN
	4900~5950	1	10	20dB Min.@ 1800~2500 MHz 25dB Min.@ 9800~11900 MHz 15dB ref.@ 14700~17850 MHz		

- Operating temperature range －40℃～85℃

Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Isolation (dB)Min	Application
BTLD0020122G4S3A70	2400~2500	0.5	10	20dB Min.@ 4800~6000 MHz 22dB Min.@ 7200~7500 MHz	-	WLAN
	4900~5950	0.65	10	22dB Min.@ 824~915 MHz 22dB Min.@ 1800~2500 MHz 15dB Min.@ 9800~11900 MHz		
BTLD0020122G4S3A80	2400~2500	0.5	10	20dB Min.@ 4800~6000 MHz 22dB Min.@ 7200~7500 MHz	-	WLAN
	4900~5950	0.65	10	22dB Min.@ 824~915 MHz 22dB Min.@ 1800~2500 MHz 15dB Min.@ 9800~11900 MHz		
BTLD0020122G4S3E80	2400~2500	0.5	10	20dB Min.@ 4800~6000 MHz 22dB Min.@ 7200~7500 MHz	-	WLAN
	4900~5950	0.65	10	22dB Min.@ 824~915 MHz 25dB Min.@ 1800~2500 MHz 20dB Min.@ 9800~11900 MHz		

- Operating temperature range －40℃～85℃

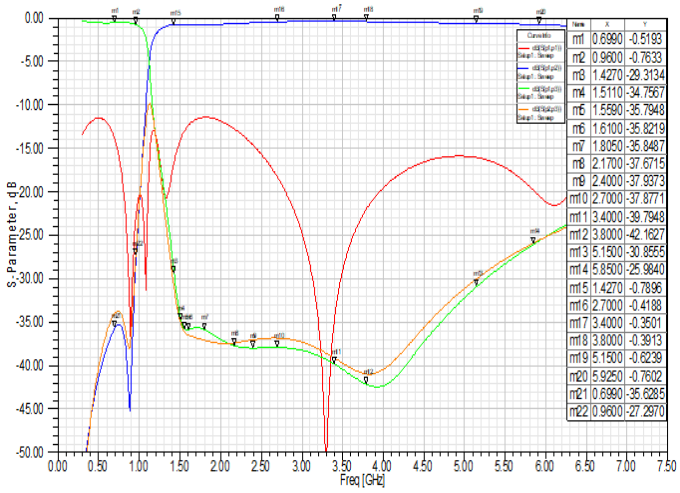
Electrical Characteristics

Part Number	Pass Band (MHz)	Impedance(Ω)		Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Isolation (dB)Min	Application
		ANT Port	RX/TX Port					
BTLD0020152G4S3A10	2400~2500	50	RX: Conj. match to MT7668	25℃ 2.2 105℃ 2.5	10	21dB Min.@ 4800~5000 MHz 23dB Min.@ 5000~5950 MHz 20dB Min.@ 7200~7500 MHz	30dB Min @ 4900~5950 MHz	WLAN/BT
	2400~2500	50	TX: Conj. match to MT7668	25℃ 1.5 105℃ 1.8	10	27dB Min.@ 4800~5000 MHz 23dB Min.@ 5000~5950 MHz 20dB Min.@ 7200~7500 MHz		
	4900~5950	50	50	25℃ 1.3 105℃ 1.6	10	30dB Min.@ 2400~2500 MHz 10dB Min.@ 8100~8800 MHz 15dB Min.@ 8820~9800 MHz 23dB Min.@ 9800~11900 MHz	25dB Min @ 2400~2500 MHz	

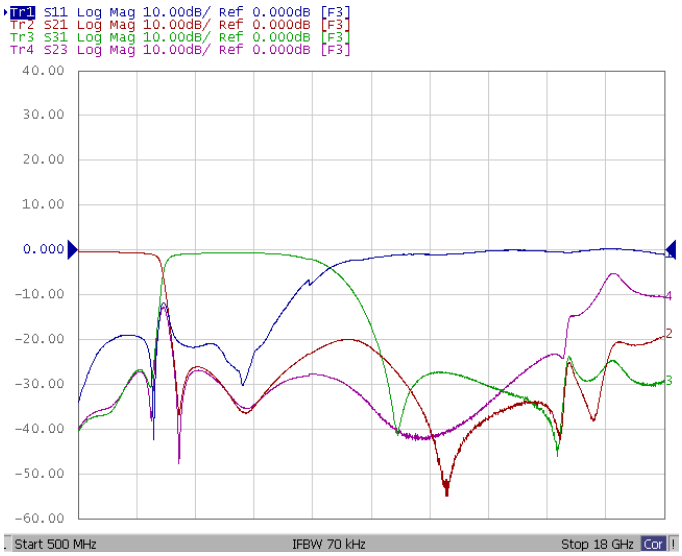
- Operating temperature range －40℃～85℃

Test Instruments：Agilent E5071C Network Analyzer

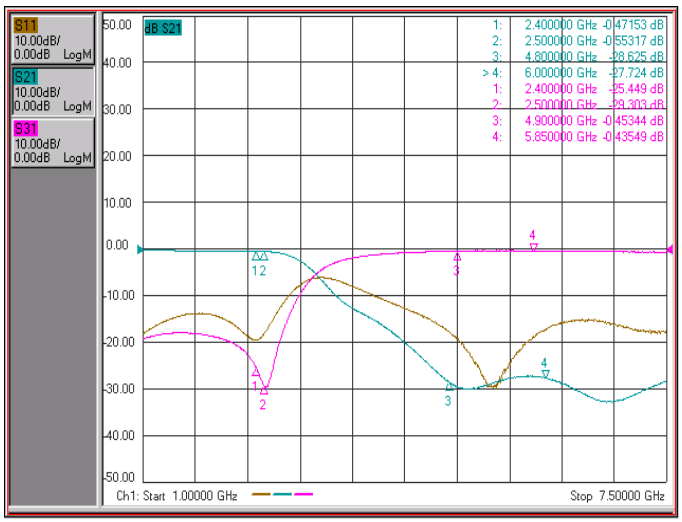
BTLD002012DLXJVA10



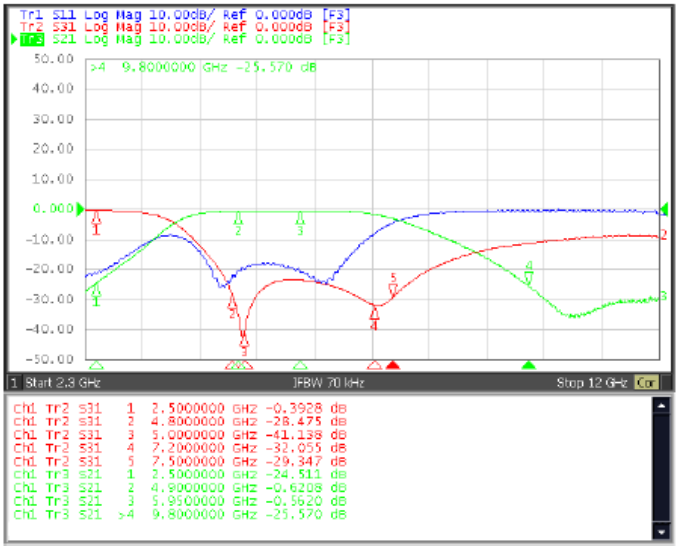
BTLD002012JOXKSA10



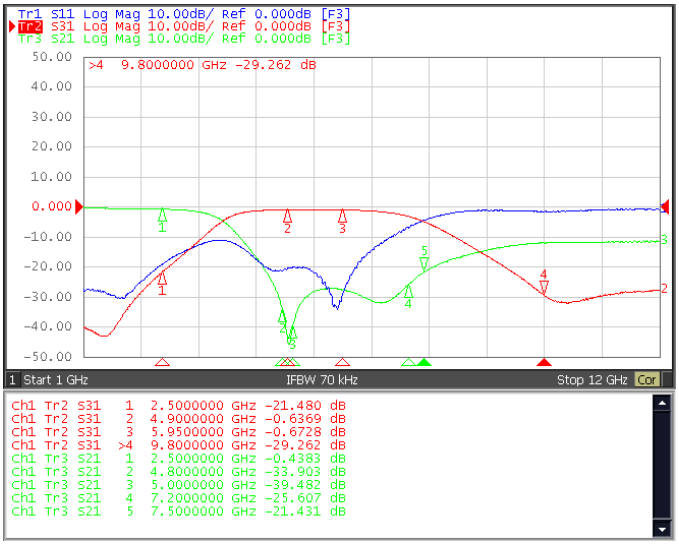
BTLD0020122G4S1A40



BTLD0020122G4S1B50

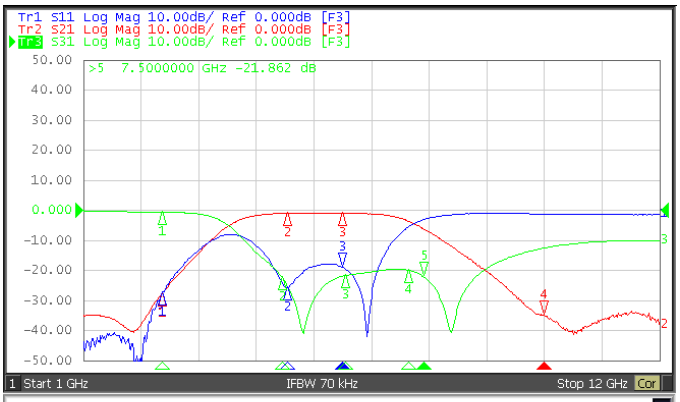


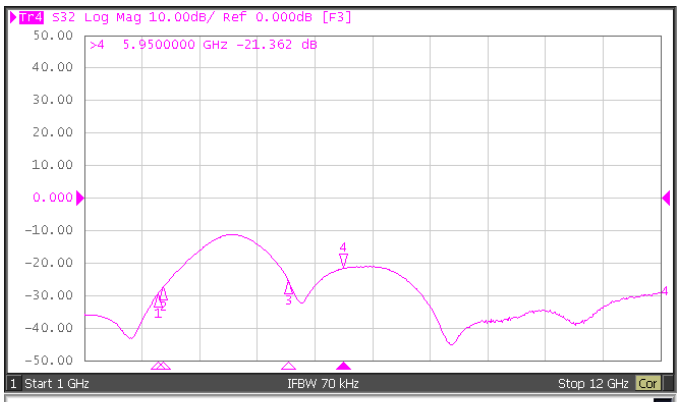
BTLD0020122G4S1B60



Test Instruments：Agilent E5071C Network Analyzer

BTLD0020122G4S1D20

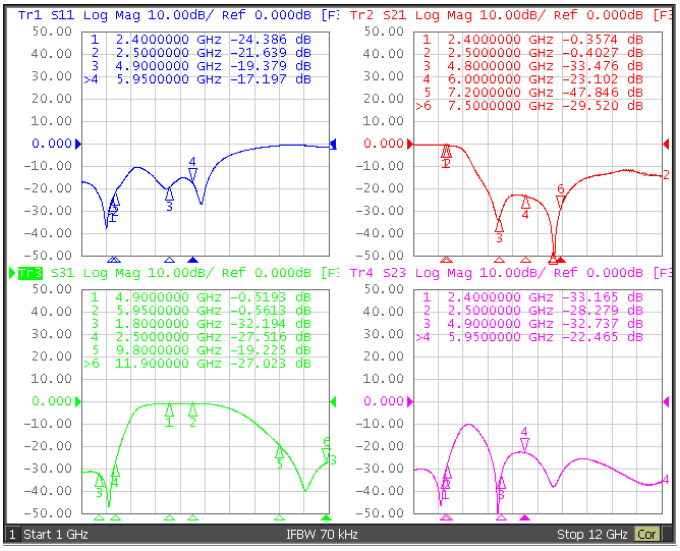




Ch1 Tr1 S11	1	2.5000000 GHz	-27.040 dB
Ch1 Tr1 S11	2	4.9000000 GHz	-25.450 dB
Ch1 Tr1 S11	3	5.9500000 GHz	-18.759 dB
Ch1 Tr2 S21	1	2.5000000 GHz	-27.386 dB
Ch1 Tr2 S21	2	4.9000000 GHz	-0.7207 dB
Ch1 Tr2 S21	3	5.9500000 GHz	-0.7802 dB
Ch1 Tr2 S21	4	9.8000000 GHz	-34.651 dB
Ch1 Tr3 S31	1	2.5000000 GHz	-0.2728 dB
Ch1 Tr3 S31	2	4.8000000 GHz	-22.161 dB
Ch1 Tr3 S31	3	6.0000000 GHz	-21.368 dB

Ch1 Tr4 S32	1	2.4000000 GHz	-29.351 dB
Ch1 Tr4 S32	2	2.5000000 GHz	-27.186 dB
Ch1 Tr4 S32	3	4.9000000 GHz	-25.343 dB
Ch1 Tr4 S32	>4	5.9500000 GHz	-21.362 dB

BTLD0020122G4S3A70



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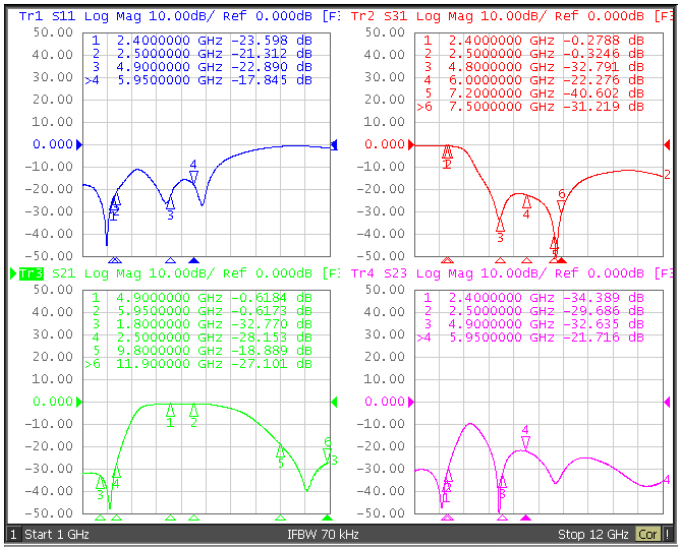

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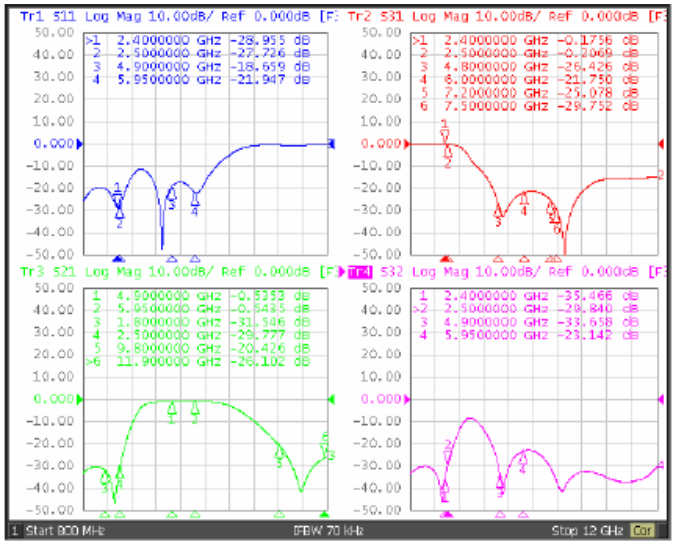
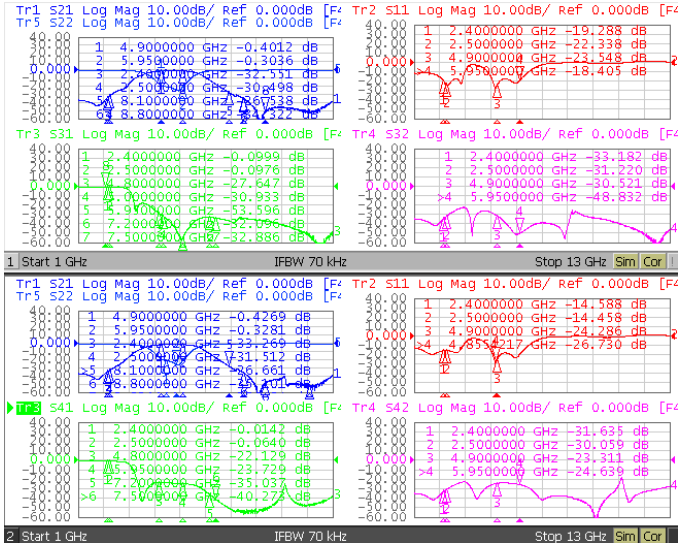


BTLD0020152G4S3A10



Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max 25℃	Insertion Loss (dB)Max -40~85℃	Return Loss (dB)Min	Attenuation	Isolation (dB)Min	Application
BTLD002520DHXKMA10 BTLD002520DHXKMB10	617~960	0.6	0.7	12(20Typ)	18dB Min./ 27dB Typ.@ 1427~1463 MHz 23dB Min./ 30dB Typ.@ 1452~1496 MHz 23dB Min./ 30dB Typ.@ 1463~1496 MHz 23dB Min./ 30dB Typ.@ 1496~1511 MHz 20dB Min./ 25dB Typ.@ 1554~1605 MHz 20dB Min./ 24dB Typ.@ 1695~1710 MHz 20dB Min./ 24dB Typ.@ 1710~1850 MHz 20dB Min./ 24dB Typ.@ 1760~1850 MHz 20dB Min./ 24dB Typ.@ 1850~2108 MHz 23dB Min./ 27dB Typ.@ 2109~2200 MHz 25dB Min./ 30dB Typ.@ 2300~2400 MHz 25dB Min./ 31dB Typ.@ 2401~2496 MHz 25dB Min./ 33dB Typ.@ 2496~2586 MHz 28dB Min./ 35dB Typ.@ 2620~2745 MHz 30dB Min./ 39dB Typ.@ 3300~4200 MHz 30dB Min./ 38dB Typ.@ 4400~5000 MHz 20dB Min./ 25dB Typ.@ 5150~5925 MHz 5dB Typ.@ 5925~12750 MHz	23	GSM/LTE WCDMA
	1452~1496	0.7	0.8	12(20Typ)	23dB Min./ 26dB Typ.@ 617~915 MHz 24dB Min./ 27dB Typ.@ 915~960 MHz 10dB Typ.@ 3300~3400 MHz	23	
	1710~1995	0.6	0.7		15dB Min./ 18dB Typ.@ 3400~3600 MHz 15dB Min./ 18dB Typ.@ 3600~3800 MHz	20	
	2010~2690	0.7	0.8		15dB Min./ 18dB Typ.@ 3800~5130 MHz 28dB Min./ 35dB Typ.@ 5130~5925 MHz 7.5dB Typ.@ 5925~12750 MHz	20	
BTLD002520EIXSTA10	699~960	0.6	0.7	10(15.7Typ)	5dB Min./ 10.1dB Typ.@ 2300~2350 MHz 10dB Min./ 15.5dB Typ.@ 2350~2500 MHz 15dB Min./ 22.4dB Typ.@ 2500~2690 MHz	12	LTE/NR
	960~1427	0.75	0.85			11	
	1427~1710	0.85	0.95			11	
	1710~1990	1	1.15			10	
	1990~2110	1.5	1.65			12	
	2110~2170	2.5	2.7			5	
	2300~2350	2.65	2.85	10(12.8Typ)	12dB Min./ 14.8dB Typ.@ 699~960 MHz 12dB Min./ 13.7dB Typ.@ 960~1427 MHz 12dB Min./ 13.7dB Typ.@ 1427~1710 MHz 10dB Min./ 14.2dB Typ.@ 1710~1990 MHz 12dB Min./ 17.6dB Typ.@ 1990~2110 MHz	5	
	2350~2500	1.5	1.65			10	
	2500~2690	0.7	0.85			15	
	3300~3600	0.7	0.85	9(11.5Typ)	5dB Min./ 10.7dB Typ.@ 2110~2170 MHz	-	

- Operating temperature range －40℃～85℃

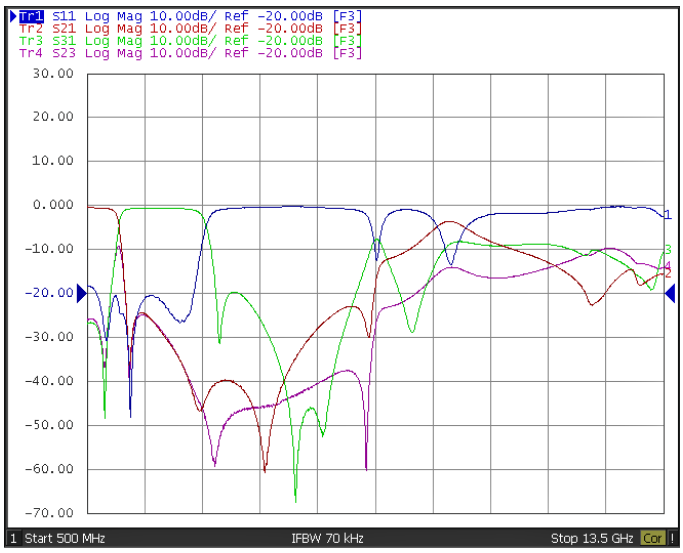
Electrical Characteristics

Part Number	Pass Band (MHz)	Insertion Loss (dB)Max	Return Loss (dB)Min	Attenuation	Isolation (dB)Min	Application
BTLD002520JOXKSA10 .	617~960	0.3(0.1Typ)	10(18.5Typ)	15dB Min./ 21.1dB Typ.@ 3300~3400 MHz 23dB Min./ 27dB Typ.@ 3400~3800 MHz 28dB Min./ 30.9dB Typ.@ 5150~5925 MHz	30	LTE/NR
	1427~1661	0.45(0.18Typ)			27	
	1710~2170	0.45(0.26Typ)			23	
	2300~2496	0.60(0.41Typ)			23	
	2496~2690	0.75(0.63Typ)			23	
	3300~3400	1.4(0.93Typ)	10(14.4Typ)	30dB Min./ 38.7dB Typ.@ 617~960 MHz 30dB Min./ 39dB Typ.@ 1427~1511 MHz 23dB Min./ 29.8dB Typ.@ 1710~2690 MHz 20dB Min./ 39.6dB Typ.@ 1.03~1.17 GHz 5dB Min./ 20.1dB Typ.@ 1.545~1.755 GHz	15	LTE/NR
	3400~3600	0.85(0.73Typ)			23	
	3600~3800	0.7(0.59Typ)			23	
	5150~5925	0.7(0.58Typ)			28	

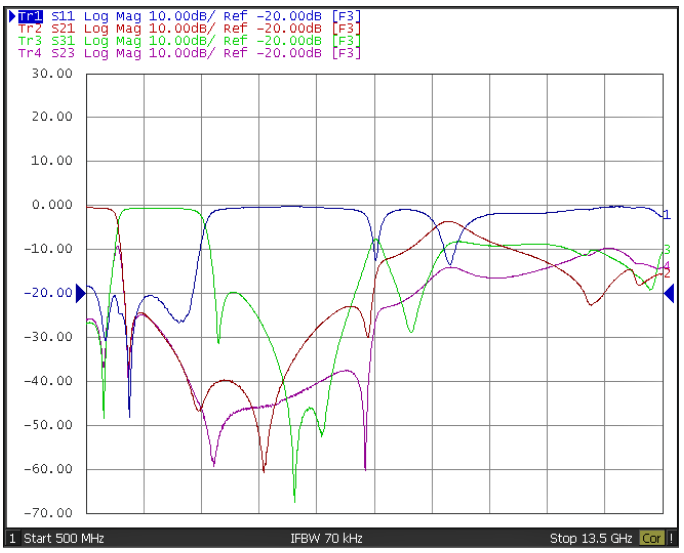
- Operating temperature range －40℃～85℃

Test Instruments：Agilent E5071C Network Analyzer

BTLD002520DHXKMA10



BTLD002520DHXKMB10



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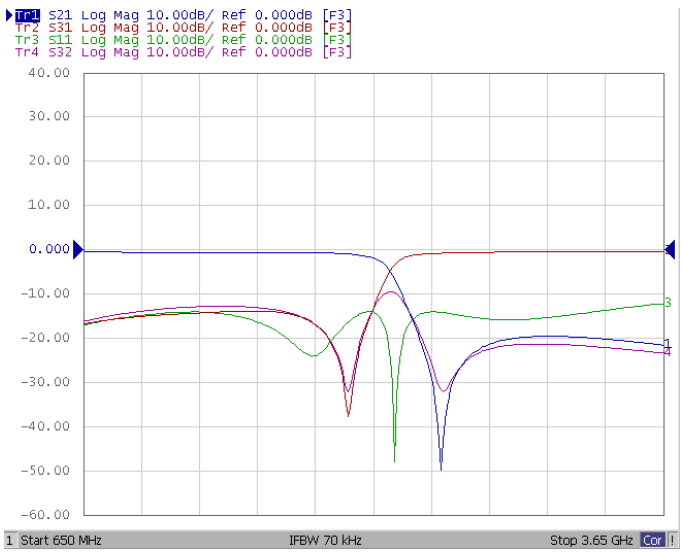

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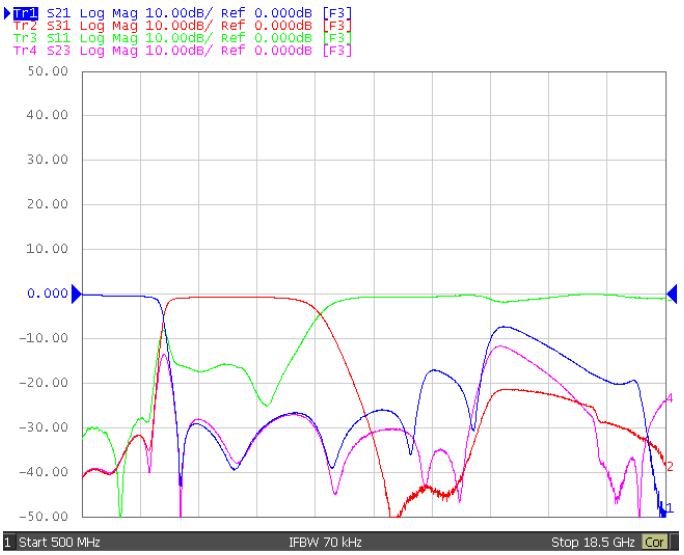
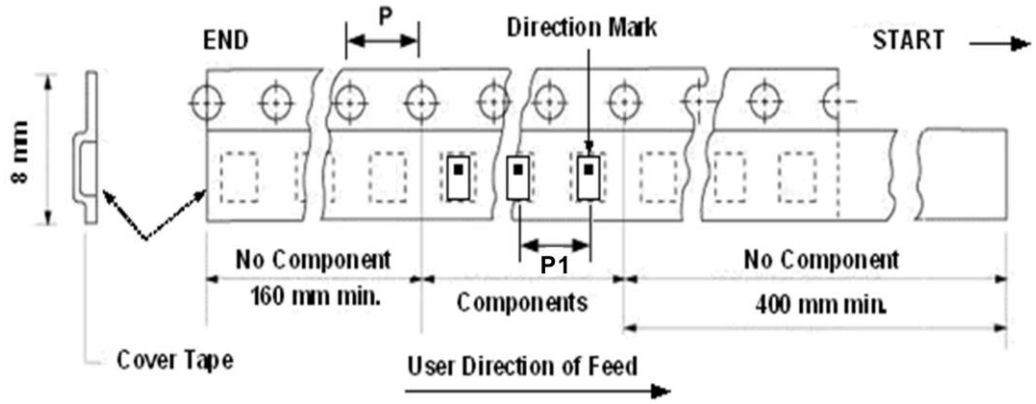
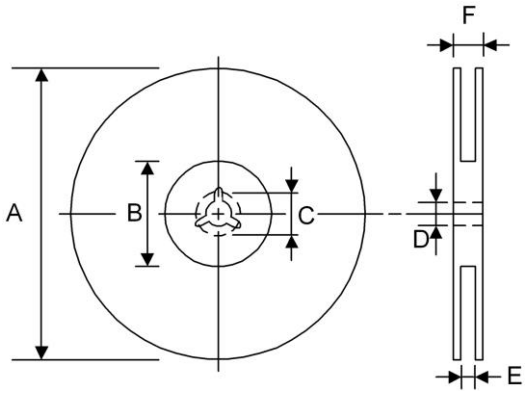


Packaging Specifications

Tape Dimensions



Reel Dimensions



Dimensions in mm

TYPE	Tape Dimensions		Reel Dimensions						Quantity
	P	P1	A	B	C	D	E	F	PCS / REEL
BTLD001005	4	2	178	60	-	13	9	12	10000
BTLD001608	4	4	178	60	-	13	9	12	4000
BTLD002012	4	4	178	60	-	13	9	12	4000
BTLD002520	4	4	178	60	-	13	9	12	3000