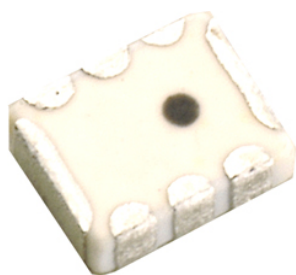


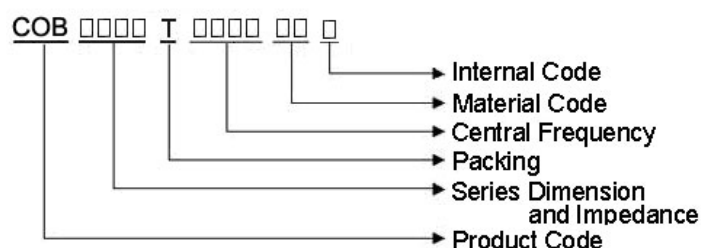
COMBO (Balance Filter) Series



Features

- RoHS Compliant
- Miniaturized
- Low insertion loss
- High rejection at lower stop band and 2nd harmonic band

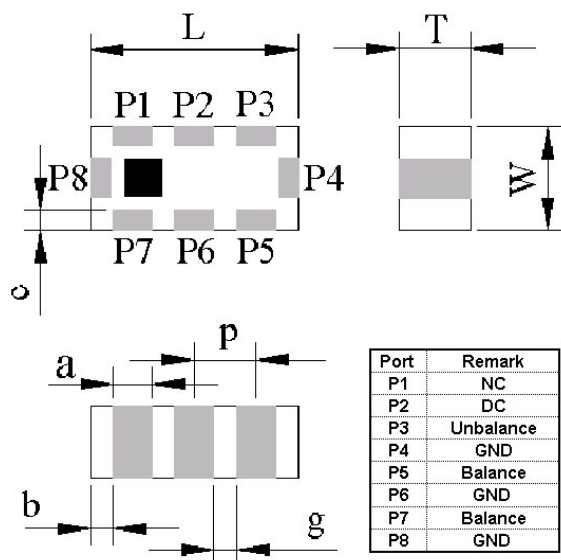
Product Identification



Applications

- 2.4GHz ISM band WLAN and Bluetooth

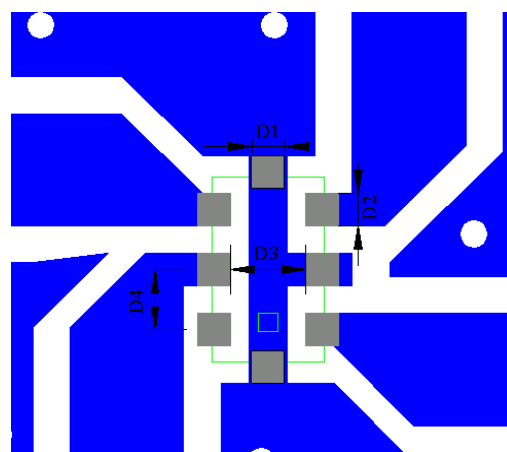
Shapes and Dimensions



Dimension in mm

TYPE	L	W	T	a	b	c	p	g
COB2012T2450HA1	2.0±0.1	1.25±0.1	0.9±0.15	0.3±0.1	0.2±0.15	0.2±0.15	0.65±0.1	0.35±0.1
COB2012T2450HA2	2.0±0.1	1.25±0.1	0.9±0.15	0.3±0.1	0.2±0.15	0.2±0.15	0.65±0.1	0.35±0.1

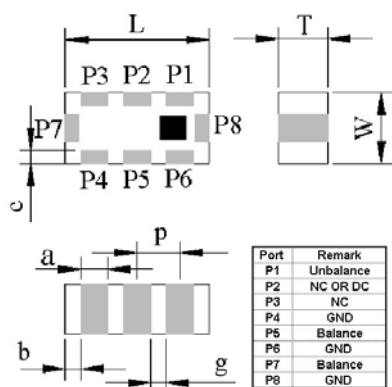
Recommended Pattern



Dimension in mm

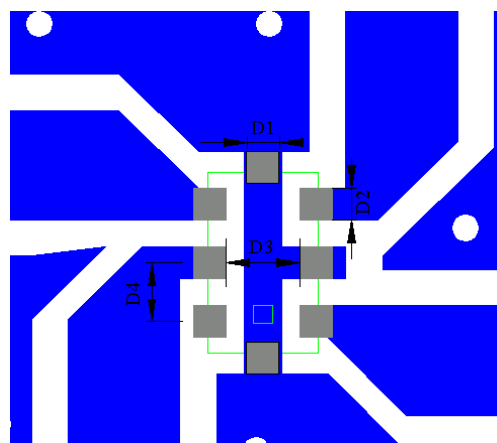
TYPE	D1	D2	D3	D4
COB2012T2450HA1	0.35±0.1	0.35±0.1	0.80±0.1	0.65±0.1
COB2012T2450HA2	0.35±0.1	0.35±0.1	0.80±0.1	0.65±0.1

Low Temperature Cofired Ceramic LTCC Series



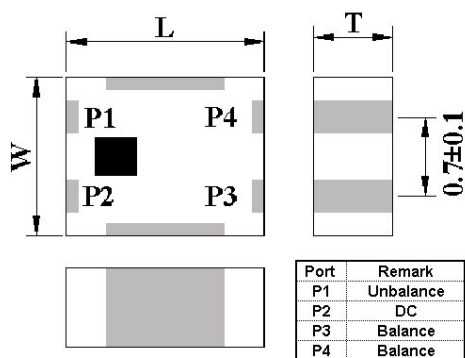
Dimension in mm

TYPE	L	W	T	a	b	c	p	g
COB2012T2450NA3	2.0±0.1	1.25±0.1	0.9±0.15	0.3±0.1	0.2±0.15	0.2±0.15	0.65±0.1	0.35±0.1



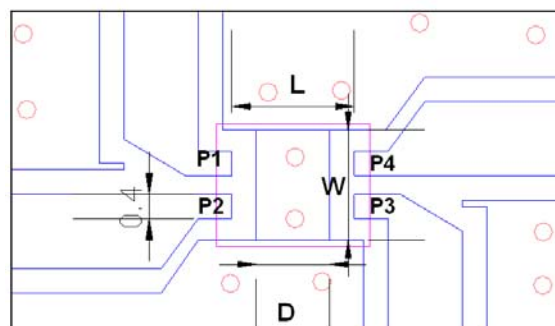
Dimension in mm

TYPE	D1	D2	D3	D4
COB2012T2450NA3	0.35±0.1	0.35±0.1	0.80±0.1	0.65±0.1



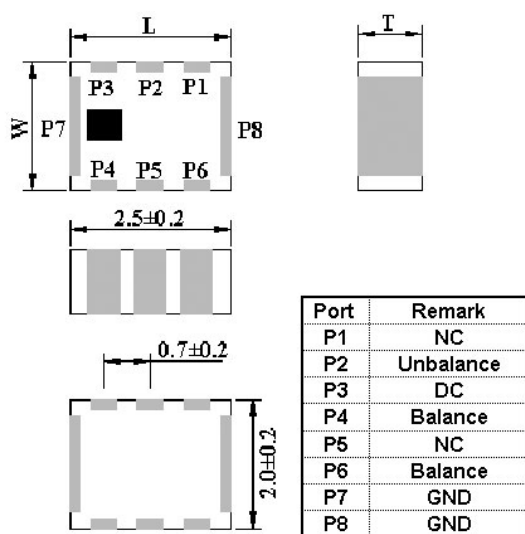
Dimension in mm

TYPE	L	W	T	P1	P2	P3	P4
COB2520T2450HA1	2.5±0.2	2.0±0.2	0.9±0.2	0.4±0.2	0.4±0.2	0.4±0.2	0.4±0.2



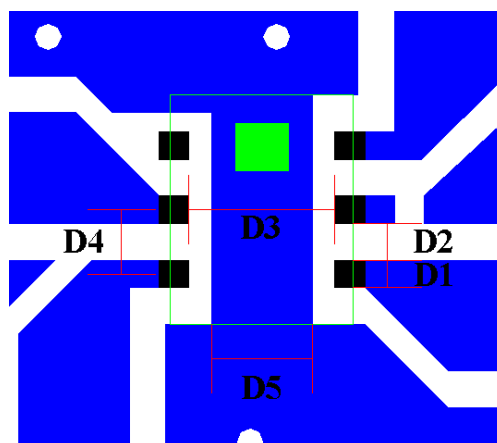
Dimension in mm

TYPE	L	W	P1~P4	D
COB2520T2450HA1	2.1±0.1	1.8±0.1	0.4±0.1	1.2±0.1



Dimension in mm

TYPE	L	W	T	P1~P6	P7~P8
COB2520T2450HA3	2.5±0.2	2.0±0.2	0.85±0.15	0.4±0.2	1.4±0.2



Dimension in mm

TYPE	D1	D2	D3	D4	D5
COB2520T2450HA3	0.3±0.1	0.4±0.1	1.5±0.1	0.7±0.1	1.1±0.1

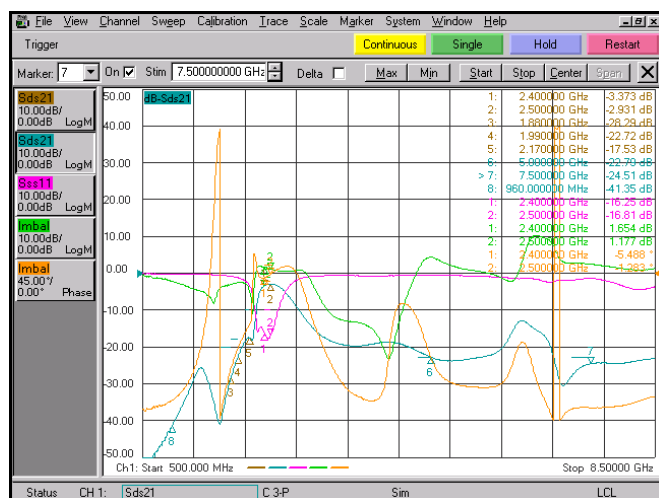
Low Temperature Cofired Ceramic LTCC Series

Electrical Characteristics

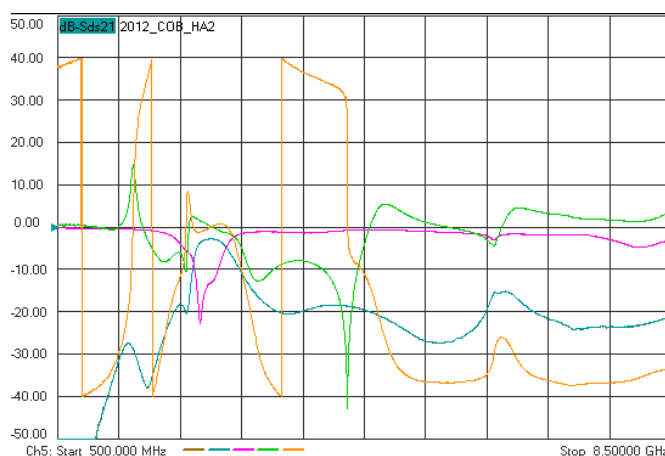
Part Number	Pass Band (GHz)	Impedance Unbalance / Balance (Ω)	VSWR	IL (dB)	Difference		Attenuation
					Amplitude (dB)	Phase (Degree)	
COB2012T2450HA 1	2.4~2.5	50/ 100	2.0	3.5	2.0	180±10	40dB Min @ 880~960MHz ref 27dB Min @ 1710~1880MHz 20dB Min @ 1880~1990MHz 15dB Min @ 2110~2170MHz 20dB Min @ 2fo 20dB Min @ 3fo
COB2012T2450HA 2	2.4~2.5	50/ Conjugate match to CSR BC series.	2.0	3.5	2.2	180±10	30dB Min @ 880~960MHz ref 20dB Min @ 1710~1880MHz 15dB Min @ 1880~1990MHz 10dB Min @ 2110~2170MHz 20dB Min @ 2fo 20dB Min @ 3fo
COB2012T2450NA3	2.4~2.5	50 /Conjugate match to CSR BC series.	2.0	2.8	2.2	180±10	40dB Min @ 880~960MHz ref 25dB Min @ 1710~1910MHz 15dB Min @ 4800~5000MHz 20dB Min @ 7200~7500MHz
COB2520T2450HA 1	2.4~2.5	50/ 100	2.0	3.3	1.0	180±10	40dB Min @ 880~960MHz ref 20dB Min @ 1710~1880MHz 18dB Min @ 1880~1990MHz 12dB Min @ 2110~2170MHz 25dB Min @ 4800~5000MHz 25dB Min @ 7200~7500MHz
COB2520T2450HA 3	2.4~2.5	50/ 100	2.0	2.5	2.0	180±10	35dB Min @ 880~960MHz 22dB Min @ 1710~1910MHz 30dB Min @ 4800~5000MHz 30dB Min @ 7200~7500MHz

Test Instruments : Agilent E5071B/N5230A Vector Network Analyzer

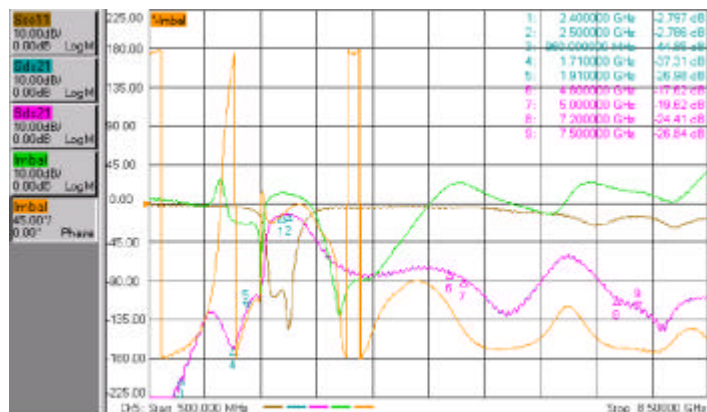
COB2012T2450HA1



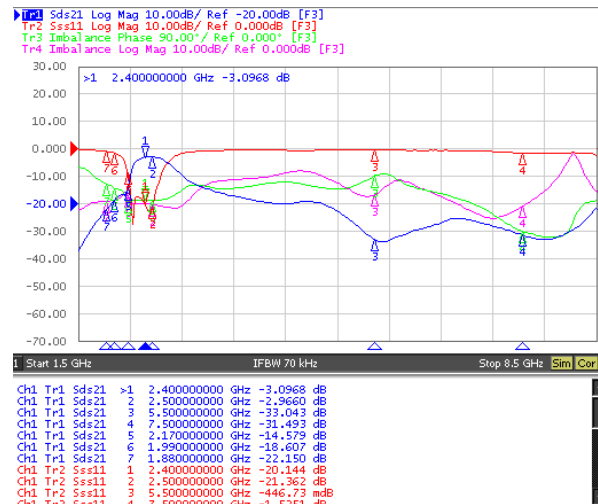
COB2012T2450HA2



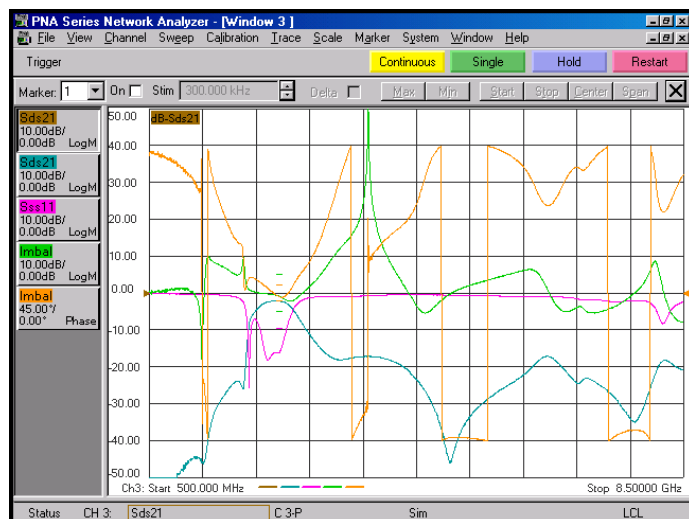
COB2012T2450NA3



COB2520T2450HA1

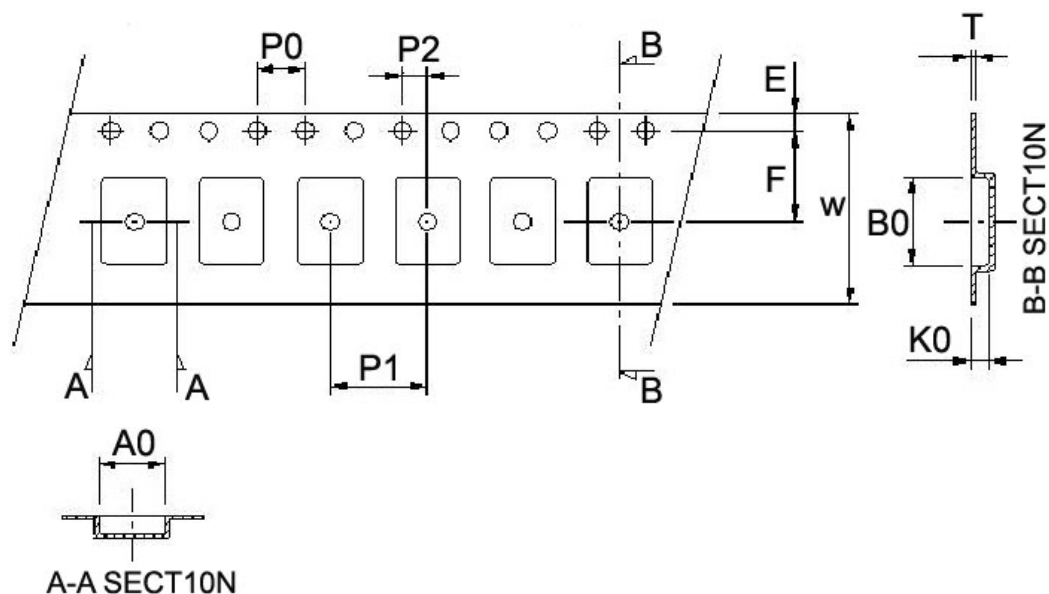


COB2520T2450HA3

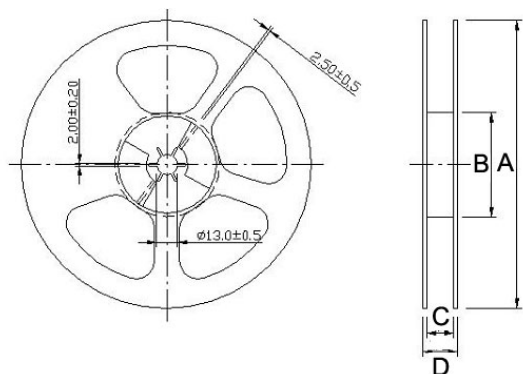


Packaging Specifications

Tape Dimensions



Reel Dimensions



Dimensions in mm

TYPE	Tape Dimensions										Reel Dimensions				Quantity
	A0	B0	T	E	W	P1	P2	F	K0	A	B	C	D Max	PCS / RELL	
COB2012T2450HA X	1.45	2.30	0.22	1.75	8.1	4	2	3.5	1.13	178	62	8.4	14.4	4000	
COB2012T2450NAX	1.45	2.30	0.22	1.75	8.1	4	2	3.5	1.13	178	62	8.4	14.4	4000	
COB2520T2450HA X	2.20	2.75	0.22	1.75	8.1	4	2	3.5	1.05	178	62	8.4	14.4	3000	