

# 2024 RF & MICROWAVE

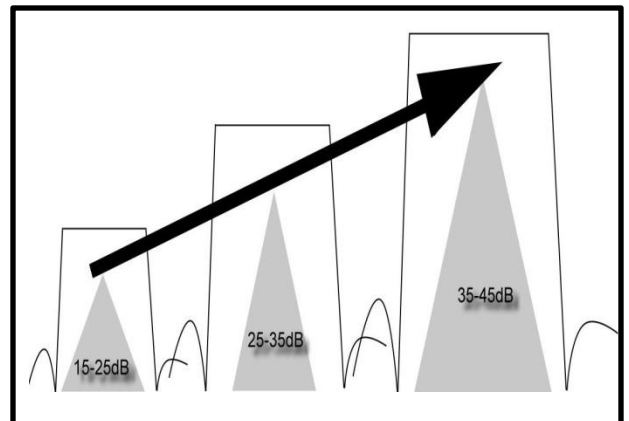
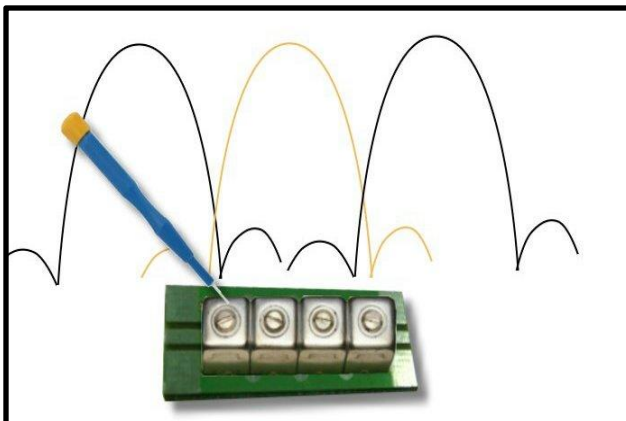
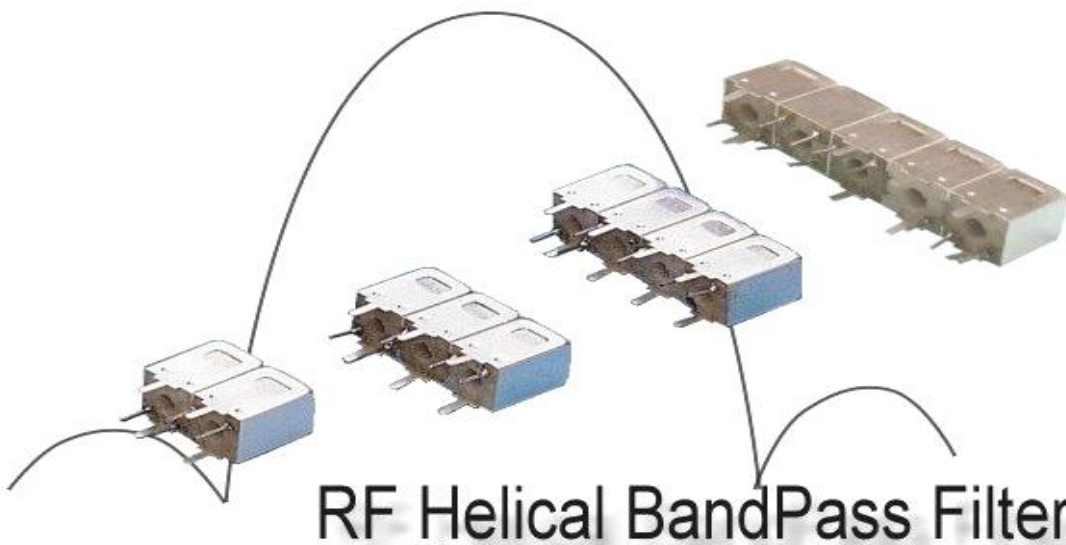
*RF Custom Design & Manufacture*



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- Center Frequency range: 42 ~ 2600MHz
- Bandwidth range: 5 ~ 200MHz
- Impedance: 50ohm & 75ohm
- Tunable range: 5-10MHz self-tuning
- Upgrading value: 10dB Attenuation upgraded by adding one pole
- Size: 7H/ 7S/ 5R/ 5W
- Standards selections: Over 3K items spec sheets in online store
- Custom design available
- DIP and SMD to choose (**SMD NEW!**)



Temwell PN	Fo (MHz)	Bandwidth
TT67709B-146M	146	5M
TT6762B-223.5M	223.5	9M
TT67100D-435M	435	9M
TTW3630B-435M	435	26M
TT67295B-435M	435	34M
TT67550E-915M	915	27M
TTW3684B-915M	915	25M

## Application: 2way Radio Design

- Standard item and ready in stock.
- Series : 7H3 Series
- Centre Freq. (Fo) : 70M/ 140M/160M/  
180M/ 460M
- Bandwidth (B.W.): 5~30MHz
- Case (H x L x W) :  
12.5 x 7.6 x 22.9 mm(7H3)

Temwell PN	Fo (MHz)	Bandwidth
TT63721B-146M	146	2M
TT63722B-157M	157	2M
TT63723B-160M	160	2M
TT63724A-172M	172	2M
TT63725A-460M	460	2M
TT63726A-700M	700	2M
TT63727A-868M	868	2M
TT63728A-915M	915	2M

## Application: Ham Radio User

- Standard item and ready in stock.
- Series : 7H3 / 5W3 Series
- Centre Freq. (Fo) : 146M/ 223.5M/  
435M/ 915M/1270M/1282.5M
- Bandwidth (B.W.): 5~30MHz
- Case(H x L x W):  
12.5 x 7.6 x 22.9 mm(7H3)/  
16.8 x 5.6 x 8.6 mm(5W3)

Temwell PN	Fo (MHz)	Bandwidth
TT6806B1-70M	70	1.5M
TT67487B-70M	70	9M
TT6756B-140M	140	3M
TT6755D1-140M	140	5M
TT67677B1-140M	140	10M
TT67680B1-140M	140	35M
TT6821B-160M	160	5M
TT67711B-160M	160	10M
TT63447B-160M	160	20M
TT67377A-160M	160	26M
TT63499B-160M	160	31M
TT63206A-160M	160	40M

## Application: NB lot Equipment

- Standard item and ready in stock.
- Series : 7H3 Series
- Centre Freq. (Fo) :146M/ 157M/ 160M/  
172M/ 460M/ 700M/ 868M/ 915M
- Bandwidth (B.W.): 2~5MHz
- Case (HxLxW):  
12.5 x 7.6 x 22.9 mm (7H3)

## Bass Pass Filters

Temwell PN	Fo (MHz)	Bandwidth	Insertion Loss	Attenuation
ST-WF01-435S	435	20M	2.0dB	60db@DC-400M, 60dB@460-800M
ST-WF02-500S	500	600M	8.0dB	50db@DC-50M, 50dB@1500-2500M
ST-WF03-632N	632	14M	1.0dB	70db@ FC+/-25M
ST-WF04-707N	707	20M	1.0dB	70db@ FC-21M/ 70db@ FC+19M
ST-WF05-881S	881	30M	1.5dB	45db@ FC+/-10M
ST-WF06-942S	942	35M	1.5dB	45db@ FC+/-10M
ST-WF07-1200S	1200	20M	1.0dB	50db@DC-1100M, 50dB@1300-3000M
ST-WF08-1810S	1810	40M	1.5dB	20db@DC-1760M, 20dB@1860-4000M
ST-WF09-2225S	2225	30M	2.0dB	40db @ FC+/-50M
ST-WF10-2425S	2425	50M	1.5dB	45db @ FC+/-15M
ST-WF11-2900S	2900	404M	0.5dB	60db@DC-2648M, 60dB@3152-6000M
ST-WF12-5800S	5800	150M	2.2dB	10db @ FC+/-100M/ 20db @ FC+/-125M
ST-WF13-12GS	12200	1000M	2.0dB	60db @ FC+/-950M
ST-WF14-15GS	15000	2700M	1.0dB	40db @ FC+/-2500M
ST-WF15-26GK	26875	5250M	1.0dB	30db@22750M, 30dB@31000M
ST-WF16-28GK	28000	3000M	1.0dB	30db@25000M, 30dB@31000M
ST-WB01-500S	500	600M	8.0dB	50db@DC-50M, 50dB@1500-2500M
ST-WB02-515N	515	970M	2.0dB	40db@DC-22M, 40dB@1400-6000M
ST-WB03-1450S	1450	1900M	1.5dB	40db@DC-400M, 40dB@2900-4000M
ST-WB04-1800S	1800	1000M	2.0dB	25db@DC-1150M, 45dB@2700-4000M
ST-WB05-3000S	3000	1750M	1.0dB	40db@1875M, 40dB@4125M
ST-WB06-5000S	5000	2700M	1.0dB	40db @ FC+/-2500M
ST-WB07-7000S	7000	2700M	1.0dB	40db @ FC+/-2500M
ST-WB08-9000S	9000	2000M	1.0dB	60db@DC-7000M, 60dB@11000-18000M
ST-WB09-11GS	11200	1000M	2.0dB	60db @ FC+/-950M
ST-WB10-12GS	12500	2000M	1.0dB	30db @ FC+/-14000M
ST-WB11-13GS	13000	2700M	1.0dB	40db @ FC+/-2500M
ST-WB12-15GS	15000	2700M	1.0dB	40db @ FC+/-2500M

## High Power BPFs

Temwell PN	Fo (MHz)	Bandwidth	Insertion Loss	Attenuation	Power
ST-WP01-632N	632	14M	1.0dB	70db@ FC+/-25M	100W
ST-WP02-692N	692	14M	1.0dB	70db@ FC+/-25M	100W
ST-WP03-707N	707	20M	1.0dB	70db@ FC-21M/ 70db@ FC+19M	100W
ST-WP04-740N	740	26M	1.0dB	70db@ FC+/-24M	100W
ST-WP05-1090SN	1090	20M	0.5dB	40db@1020-1040M	1500W
ST-WP06-1300S	1300	100M	0.5dB	55db@DC-1100M, 50dB@1500-3000M	1000W
ST-WP07-2535N	2535	70M	1.0dB	70db @ FC+/-53M	100W
ST-WP08-2655N	2655	70M	1.5dB	70db @ FC+/-53M	100W



## 5G BPFs

Temwell PN	Passband	Applications
ST-25.875A587W	Fo:24.25~27.5Ghz	5G-NR n258
ST-28GA586W	Fo:26.5~29.5GHz	5G-NR n257
ST-1792A771W	Fo:1785~1800Mhz	5G-NR n3 UL & n80, LTE Band 3 UL, GSM 1800 UL
ST-27.5-40.5G-L1BW	Fo:27.5~40.5Ghz	5G-NR n258 to n260
ST-897A492W	Fo:880~915Mhz	5G-NR n8 UL & n81, LTE Band 8 UL, E-GSM 1800 UL
ST-867A010W	Fo:862~872Mhz	LoRa 868
ST-862/867-Q7SW	Fo:862-867Mhz	LoRa 868
ST-865A833NW	Fo:863~868Mhz	LoRa 868
ST-868.4A28NW	Fo:866.8~870Mhz	LoRa 868
ST-920/925-Q7S	Fo:920-950Mhz	ISM Band 915
ST-2450A673W	Fo:2400~2500Mhz	ISM Band 2450
ST-2450A592W	Fo:2400~2500Mhz	ISM Band 2450
ST-2450A593W	Fo:2400~2500Mhz	ISM Band 2450
ST-5800A590W	Fo:5725~5875Mhz	ISM Band 5800

## 5G Notch Filters

Temwell PN	Passband	Applications
ST-710A874-B12W	FC:710M, BW:12M	LTE Band 17 UL
ST-782A875-B10W	FC:782M, BW:10M	LTE Band 13 UL, GSM 750
ST-836.5A876-B2W	FC:836.5M, BW:2M	GSM 850 UL
ST-902.6A877-B2W	FC:902.6M, BW:2M	GSM 900 UL
ST-1747.6A869-B2W	FC:1747.6M, BW:2M	GSM 1800 UL
ST-1840A868-B82W	FC:1840M, BW:82M	GSM 1900 UL
ST-836.5A871-B20W	FC:836.5M, BW:20M	5G-NR n5 UL, LTE Band 5 UL
ST-847A873-B20W	FC:847M, BW:20M	5G-NR n20 UL, LTE Band 20 UL
ST-897.5A872-B20W	FC:897.5M, BW:20M	5G-NR n8 UL, LTE Band 8 UL
ST-1732.5A867-B20W	FC:1732.5M, BW:20M	5G-NR n3 & n4 UL, LTE Band 3 & Band 4 UL
ST-1880A864-B20W	FC:1880M, BW:20M	5G-NR n2, LTE Band 2
ST-1882.5A865-B20W	FC:1882.5M, BW:20M	5G-NR n25 UL, LTE Band 25 UL, GSM 1900 UL
ST-1950A866-B20W	FC:1950M, BW:20M	5G-NR n1 UL, LTE Band 1 UL
ST-2535A870-B20W	FC:2535M, BW:20M	5G-NR n7 UL, LTE Band 7 UL
ST-1890A779-B20W	FC:1890M, BW:20M	DECT

## 40G UP Selections

P/N	Pass Band Freq	Centre Freq	Bandwidth
ST-41GA734	39.95-42.1 GHz	41.025 GHz	2.15 GHz
ST-43GA855	40-46 GHz	43 GHz	6 GHz
ST-47GB856	44-50 GHz	47 GHz	6 GHz
ST-49GB206	46.7-51.9 GHz	49.3 GHz	5.2 GHz
ST-40GB248	37.45-42.55 GHz	40 GHz	5.1 GHz
ST-50GB371	50.35-51.45 GHz	50.9 GHz	1.1 GHz
ST-49GB372	49.15-50.25 GHz	49.7 GHz	1.1 GHz
ST-48GB373	48.15-49.25 GHz	48.7 GHz	1.1 GHz
ST-47GB374	47.15-48.25 GHz	47.7 GHz	1.1 GHz
ST-44GB497	43.45-45.55 GHz	44.5 GHz	2.1 GHz
ST-40GB748	39.5-41 GHz	40.25 GHz	1.5 GHz
ST-40GB856	37.7-43.5 GHz	40.6 GHz	5.8 GHz
ST-46GB250	44-48 GHz	46 GHz	4 GHz
ST-42GB251	40-44 GHz	42 GHz	4 GHz
ST-40GB490	37-43 GHz	40 GHz	6 GHz
ST-40GB491	37-43 GHz	40 GHz	6 GHz
ST-40GB593	37.7-43.5 GHz	40.6 GHz	5.8 GHz
ST-40GB594	37-43 GHz	40 GHz	6 GHz

## Notch Filters

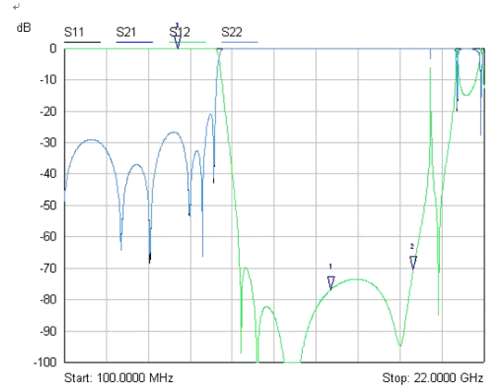


Freq (MHz)	Rejection (dB Max.)	Passband 1 (MHz)	Insertion Loss (dB Min.)
617-652	40	DC-602	1.5
663-698	40	DC-648	1.5
703-784	40	DC-688	1.5
758-803	40	DC-743	1.5
791-821	40	DC-781	3
824-846	45	DC-790	3
824-894	50	DC-790	2
850-960	40	DC-830	2.5
876-960	50	DC-836	2
897-907	40	DC-887	1.5
925-960	40	DC-915	2
930-960	60	DC-910	2.5
995-1005	60	DC-980	2.5
1240-1260	50	DC-1230	2
1447-1467	60	DC-1422	2.5
1565-1585	60	DC-1558	2.5
1710-1785	40	DC-1690	1.5
1742-1752	60	DC-1732	1.5
1805-1850	40	DC-1760	1.5
1850-1910	40	DC-1830	1.5
1865-1895	40	DC-1810	1.5
1880-1920	60	DC-1870	1.5
1890-1910	50	DC-1880	2.5
2010-2025	50	DC-1986	2.5
2110-2170	60	DC-2070	2.5
2225-2375	55	DC-2150	2.5
2300-2320	50	DC-2290	2.5
2320-2370	60	DC-2290	2.5
2360-2380	50	DC-2350	2.5

Freq (MHz)	Rejection (dB Max.)	Passband 1 (MHz)	Insertion Loss (dB Min.)
2380-2400	50	DC-2370	2.5
2490-2510	50	DC-2480	1.5
2500-2570	40	DC-2440	2
2496-2690	40	DC-2481	1.5
2500-2570	40	DC-2470	1.5
2535-2575	45	DC-2520	1.5
2620-2690	40	DC-2590	1.5
3300-3850	40	DC-3270	3
3550-3700	40	DC-3500	1.5
3740-3760	50	DC-3730	2
3800-4200	40	DC-3770	3
4400-5000	40	DC-4370	3
5150-5850	40	DC-5120	3
617-652	80	DC-605	2
663-698	80	DC-651	2
699-716	80	DC-684	2
1427-1432	80	DC-1412	2
1432-1517	80	DC-1407	2
1695-1710	80	DC-1685	2
2110-2200	80	DC-2085	2
2300-2400	80	DC-2273	2
2400-2485	80	DC-2375	2
3300-3800	80	DC-3250	5
3800-4200	80	DC-3750	3
4400-5000	80	DC-4240	5
5150-5250	80	DC-5125	3
5250-5350	80	DC-5225	3
5470-5725	80	DC-5420	3
5725-5850	80	DC-5695	3

## 4.5G -6G LC BandPass Filter

Pass Band Frequency Range	4.5~6.0GHz
Pass Band Insertion Loss	$\leq 1.0(\text{dB})$
Stop Band Frequency Range	DC~3.6GHz , 6.7~15GHz
VSWR	$\leq 1.4$
Package Type	SMA female*2
Impedance	$50\pm 1\Omega @ I/O$
Power Handling	1W
Operating Temperatures	-55~+85°C
Flatness	less than +/- 1 dB



## 0.5G -2G LC BandPass Filter

Pass band	500 MHz to 2 GHz
VSWR @ pass band	1.4:1 max
Insertion Loss @pass band	1.2 dB max
Rejection	>65 dBc @ DC-280 MHz & 3.2-6 GHz
Ripple in band	1.0 dB peak to peak
Impedance	50Ω
Operating Temperature	-55~+85°C

## Filter Bank Microstrip High Pass Filter

- Application: Filter Bank, Laboratory
- Impedance: 50 Ohms
- Miniature Design
- Low Pass option
- ODM & OEM Service



Pass Band	1.2-8 GHz	3-18 GHz	18-28 GHz	1-8 GHz	7-18 GHz
Attenuation	> 40dB	> 60dB	> 50dB	> 50dB	> 60dB
Insertion Loss	< 1.5dB	< 2.0dB	< 2.0dB	< 1.5dB	< 1.5dB
VSWR	< 1.5	< 1.5	< 1.8	< 1.8	< 1.5
Power	15W				
Connector	SMA				

## C-Band 6750MHz BPF

Specification	
Center Freq (Fo)	6750 MHz
Bandwidth	600 MHz (6450~7050MHz)
Insertion Loss	<1.0dB
Stop Band Rejection	>80dB @DC~5500M, 11000~16500M >60dB @5500~6250M, 7250~11000M
Power Handling	<2 Watt
Temperature	-30°C ~ +70°C
Impedance	50 ohm
Connector	Input: SMA-Female Output: SMA-Male
Dimension	212x23x12 mm

- L-Band (1-2 Ghz)
- S-Band (2-4 Ghz)
- C-Band (4-8 Ghz)
- X-Band (8-12 Ghz)
- Ku-Band (12-18 Ghz)
- Ka-Band (26-40 Ghz)

## S-Band 2900MHz BPF



Specification	
Center Freq (Fo)	2900 MHz
Bandwidth	30 MHz (2885~2915MHz)
Insertion Loss	<1.5dB
Rejection	>40dB @Fo±60MHz (DC~2840M、2960~7000M)
Power Handling	<20 Watt
Temperature	-40°C ~ +70°C
Impedance	50 ohm
Connector	SMA-Female
Surface Color	Black Paint or Silver Plain
Dimension	97x30x20 mm

## Ku Band 11.7GHz BPF



Specification	
Center Freq (Fo)	11.7 GHz
Bandwidth	1500 MHz (10.95~12.45GHz)
Insertion Loss	<0.85dB
Ripple Band	<0.2dB peak-peak in any 80MHz interval <0.4dB peak-peak within signal BW (1500MHz)
Rejection	>80dB @DC-10400MHz >80dB @13000-26000MHz
Group Delay Variation	<1.0ns @ peak-peak within any 80MHz interval, in the range of 10950~12450MHz.
Return Loss(Input/ Output)	>20dB
Power Handling	5W
Temperature	-30°C ~ +70°C
Impedance	50 ohm
Connector	SMA-f
Surface Color	Black Paint
Dimension	110x16x12 mm



## Rural UHF Broadband Comb Band Pass Filter



- Application: Rural Broadband
- Power: 20 Watt
- Impedance: 50 Ohms
- Connector variable
- ODM & OEM Service

Pass Band Freq.	470~564MHz	540~648MHz	620~749MHz	720~798MHz
Insertion Loss	≤ 1.0dB	≤ 1.0dB	≤ 1.0dB	≤ 1.3dB
Flatness	≤ 0.6dB	≤ 0.6dB	≤ 0.6dB	≤ 0.7dB
Rejection	≥ 60dB			
VSWR	≤ 1.3:1	≤ 1.3:1	≤ 1.3:1	≤ 1.3:1
Connector	SMA-Female	SMA-Female	SMA-Female	SMA-Female

## 5.8GHz Railway Cavity Band Pass Filter

- Application: Railway System
- Impedance: 50 Ohms
- Connector Changeable
- Band Stop & Waterproof option
- ODM & OEM Service

Pass Band Freq	5735-5835 MHz
Insertion Loss	<1.0 dB
Attenuation	>20 dB
Power	<10 W
Altitude	60,000 ft. 1.0psi min
Connector	N-f & N-m



## Suspended Substrate Stripline Filters

### High Pass Filter Series



Model	3dB Cut off(GHz)	1dB Pass Band(GHz)	Insertion Loss(dB)	VSWR	Stop Band Rejection (dB@GHz)	Size LxWxH(mm)
TA0138-HS	1	1.1 ~ 4	≤1.0	≤2.0	≥45@DC ~ 0.85 (Type50)	71x40x10
TA0139-HS	2	2.2 ~ 12	≤1.0	≤2.0	≥45@DC ~ 1.7 (Type50)	38x34x10
TA0140-HS	3	3.3 ~ 12	≤1.0	≤2.0	≥45@DC ~ 2.55 (Type50)	35x31x10
TA0141-HS	4	4.4 ~ 12	≤1.0	≤2.0	≥45@DC ~ 3.4 (Type50)	34x25x10
TS-A0107-HS	5	5.5 ~ 16	≤1.0	≤2.0	≥45@DC ~ 4.25 (Type50)	26x25x10
TA0072-HS	6	6.6 ~ 18	≤1.0	≤2.0	≥45@DC ~ 5.1 (Type50)	29x28x10
TA0142-HS	7	7.7 ~ 18	≤1.0	≤2.0	≥45@DC ~ 5.95 (Type50)	29x23x10
TA0143-HS	8	8.8 ~ 18	≤1.0	≤2.0	≥45@DC ~ 6.8 (Type50)	23x25x10
TA0144-HS	9	9.9 ~ 18	≤1.0	≤2.0	≥45@DC ~ 7.65 (Type50)	25x24x10
TA0145-HS	10	11 ~ 18	≤1.0	≤2.0	≥45@DC ~ 8.5 (Type50)	25x23x10
TA0146-HS	11	12.1 ~ 18	≤1.0	≤2.0	≥45@DC ~ 9.35 (Type50)	24x22x10
TA0147-HS	12	13.2 ~ 18	≤1.0	≤2.0	≥45@DC ~ 10.2 (Type50)	24x21x10
TA0034-HS	----	2 ~ 18	≤1.0	≤2.0	≥50@DC ~ 1.5 (Type60)	44x17x10
TA0223-HS	----	3 ~ 18	≤1.0	≤2.0	≥65@DC ~ 2 (Type70)	31x17x10
TA0225-HS	----	4 ~ 18	≤1.0	≤2.0	≥40@DC ~ 3 (Type45)	28x17x10
TA0074-HS	----	1.5 ~ 13	≤1.0	≤2.0	≥50@DC ~ 1 (Type65)	53x20x10
TA0233-HS	----	4 ~ 18	≤1.0	≤2.0	≥40@DC ~ 2.5	22x17x10

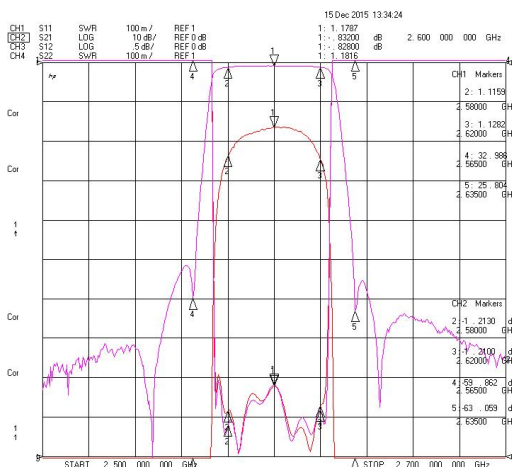
### Low Pass Filter Series

Model	3dB Cut off(GHz)	1dB Pass Band(GHz)	Insertion Loss(dB)	VSWR	Stop Band Rejection (dB@GHz)	Size LxWxH(mm)
TA0148-LS	1	DC ~ 0.9	≤1.0	≤2.0	≥45@1.2 ~ 4 (Type50)	120x41x10
TA0098-LS	2	DC ~ 1.8	≤1.0	≤2.0	≥45@2.3 ~ 6 (Type50)	53x36x10
TA0106-LS	3	DC ~ 2.7	≤1.0	≤2.0	≥45@3.45 ~ 8 (Type50)	41x34x10
TA0149-LS	4	DC ~ 3.6	≤1.0	≤2.0	≥45@4.6 ~ 10 (Type50)	39x27x10
TA0150-LS	5	DC ~ 4.5	≤1.0	≤2.0	≥45@5.8 ~ 12 (Type50)	35x24x10
TA0137-LS	6	DC ~ 5.4	≤1.0	≤2.0	≥45@6.9 ~ 14 (Type50)	35x22x10
TA0151-LS	7	DC ~ 6.3	≤1.0	≤2.0	≥45@8 ~ 15 (Type50)	33x22x10
TA0152-LS	8	DC ~ 7.2	≤1.0	≤2.0	≥45@9.2 ~ 16 (Type50)	33x21x10
TA0079-LS	9	DC ~ 8.1	≤1.0	≤2.0	≥45@10.4 ~ 16.5 (Type50)	25x19x10
TA0153-LS	10	DC ~ 9	≤1.0	≤2.0	≥45@11.5 ~ 17 (Type50)	24x18.5x10
TA0154-LS	11	DC ~ 9.9	≤1.0	≤2.0	≥45@12.5 ~ 17.5 (Type50)	23x18.5x10
TA0155-LS	12	DC ~ 10.8	≤1.0	≤2.0	≥45@13.8 ~ 18 (Type50)	20x18x10
TA0229-LS	13	DC ~ 11.7	≤1.0	≤2.0	≥45@15 ~ 19 (Type50)	20x17.5x10
TA0224-LS	14	DC ~ 12.6	≤1.0	≤2.0	≥45@16.1 ~ 20 (Type50)	19x17.5x10
TA0173-LS	----	DC ~ 2	≤1.0	≤2.0	≥50@2.5 ~ 13 (Type55)	83x35x10
TA0071-LS	----	DC ~ 2.75	≤1.6	≤1.7	≥40@3 ~ 8.5 (Type45)	59x39x10

## Single TV Channel Filters

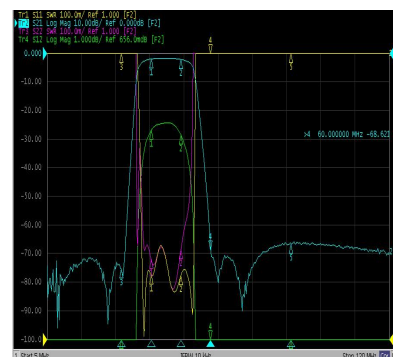
Application: Wireless Video Link, Broadcast, Telecom

Pass Band	2065~2100 MHz	2090~2100 MHz	2250~2270 MHz	2580~2620 MHz
Bandwidth	35 MHz	10 MHz	20 MHz	40 MHz
Return Loss	≥16dB	≥15dB	≥17dB	≥17dB
Power	50 Watt	50 Watt	20 Watt	20 Watt
Connector	N-F / N-M	N-F	N-F	N-F



## Satellite & D-TV (ch1-12) Channel BP Filters

Channel	Pass Band	Channel	Pass Band
VHF-FM		K-WNW	
CH1	30-40 MHz	CH7	108-157 MHz
CH2	40-50 MHz	CH8	147-230 MHz
CH3	50-60 MHz	CH9	220-290 MHz
CH4	60-70 MHz	CH10	280-345 MHz
CH5	70-80 MHz	CH11	335-405 MHz
CH6	80-88 MHz	CH12	395-512 MHz
IL	≤ 4.0 dB		
Ripple	≤ 1.2 dB		
VSWR	≤ 1.5 : 1		
Rejection	≥ -40dB		
Power	1 Watt		
I/O PORT	50 ohm Feed		
Dimension	39*10.5*8 mm		



## 1GHz to 27GHz Interdigital Band Pass Filter

- Application: Radar
- Attenuation: > 50 dB
- Insertion Loss: < 1.5 dB
- SMA connectors (variable)
- Impedance: 50 Ohms
- Low Pass & High Pass option
- ODM & OEM Service

#	Pass Band	#	Pass Band
1	0.9-1.5 GHz	9	3.6-6.8 GHz
2	1-1.6 GHz	10	4.8-9.2 GHz
3	1-2 GHz	11	6-8 GHz
4	1.5-2.6 GHz	12	6.4-12.4 GHz
5	2-3.6 GHz	13	10-18 GHz
6	2-4 GHz	14	18-20 GHz
7	2.4-4.5 GHz	15	25-27 GHz
8	3-5.6 GHz	---	-----



## Radar L-Band Cavity Diplexer

- Application: Radar
- Low Insertion Loss
- High Power
- Connector variable
- OEM & ODM Service

	Low	High
Pass Band Freq	1030-1090MHz	1200-1400MHz
Rejection	> 40 dB	
VSWR	1.3:1	
Power	Average 100W; Peak 1000W	
Temperature	-30°C ~ +70°C	
Connector	SMA-Female	
Impedance	50 Ω	



## LTE Band High Power Cavity Band Pass Filter

- Application: Base Station
- Power: 100 Watt
- Impedance: 50 Ohms
- Connector: N-Female (variable)
- Water Resist option
- Custom Design



Center Freq	632MHz	692MHz	2535MHz	2655MHz
Bandwidth	14MHz	14MHz	70MHz	70MHz
Insertion Loss (in BW)	1.5dB	1.5dB	2.3dB	2.3dB
Rejection	≥ 70dB			
VSWR	≤ 1.3:1	≤ 1.3:1	≤ 1.3:1	≤ 1.3:1

## LTE 700 Comb Band Pass Filter

Center Freq	752MHz
Bandwidth	108MHz
Insertion Loss	≤ 1.0dB
VSWR	≤ 1.3:1
Attenuation	≥ 50dB @DC-630MHz ≥ 50dB @874-1500MHz
Impedance	50 ohm
Power	≤ 10W
Connector	SMA-Female

- Application: Telecom System
- Connector variable
- Water Resist option
- OEM & ODM Service



## LTE 700 Cavity Diplexer

- Application: Telecom System
- Reliable & Rugged
- Water Resist option
- Low PIM option
- Custom Design

	RX	TX
Pass Band Freq	703-748MHz	758-803MHz
Insertion Loss	≤ 1.7dB	≤ 1.7dB
VSWR	≤ 1.4:1	≤ 1.4:1
Attenuation	≥ 60dB	≥ 60dB
Impedance	50 ohm	
Power	≤ 10W	
Connector	SMA-Female	



## TETRA Cavity Duplexer

	Rx	Tx
Center Frequency	382.5 MHz	392.5 MHz
Pass Band Freq.	380~385 MHz	390~395 MHz
Insertion Loss	≤4.2dB	≤4.2dB
Ripple in BW	≤2.5dB	≤2.5dB
Return Loss	≥15dB	≥15dB
Attenuation	≥60dB@390-395M	≥60dB@380-385M
Power	50 Watt CW	



## Helix Cavity Diplexer

	ANT-RX	ANT-TX
Frequency Range	248.75~253.75MHz	226.25~231.25MHz
Insertion Loss	≤3.0dB	≤3.0dB
Ripple in Band	≤1.0dB	≤1.0dB
VSWR	≤1.5	≤1.5
Rejection	≥40dB@1 ~ 216MHz ≥60dB@226.25 ~ 231.25MHz ≥40dB@300 ~ 1000MHz	≥40dB@1 ~ 216MHz ≥60dB@248.75 ~ 253.75MHz ≥50dB@300 ~ 462.5MHz ≥40dB@462.5 ~ 1000MHz
Isolation (TX/RX)	Min 74dB (Room Temperature)	
Power	10W	
Surface Finish	Black Paint	
Port Connectors	SMA-Female	
Operation Temperature	-30°C~+85°C	



## LTE800 & GSM900 Low PIM Diplexer

	RX	TX
Frequency Range	790-862 MHz	880-960 MHz
Insertion Loss	≤1.0 dB	≤1.0 dB
Ripple	≤0.8 dB	≤0.8 dB
Return Loss	≥17 dB	≥17 dB
Rejection	≥35 dB@880-960 MHz	≥35 dB@790-862 MHz
IM3	≤-150dbc@2*43dbm	
Power Input	≤ 200 W	
Impedance	50Ω	
Connectors	N-Female	
Surface Finish	Black Paint	



## GSM1800 & UMTS & GSM900

	ANT--RX		ANT--TX
	880-960MHz	1710-1880MHz	1920-2170MHz
Frequency Range	880-960MHz	1710-1880MHz	1920-2170MHz
Insertion Loss	≤0.7dB	≤0.7dB	≤0.7dB
Flatness over passband	≤0.5dB	≤0.5dB	≤0.5dB
Return Loss	≥18dB	≥18dB	≥18dB
Rejection	≥34dB@1710-1880MHz	≥34dB@1920-2170MHz	≥34dB@1710-1880MHz
	≥50dB@1920-2170MHz	≥50dB@880-960MHz	≥50dB@880-960MHz
Isolation	≥35dB@1710-1880MHz&1920-2170MHz&880-960MHz		
Power handling c.w	50W		
Port Connectors	N-Female		
Surface Finish	Black paint		
Port Sign	Port 1: ANT ; Port 2:RX ; Port 3:TX		
Operational Temperature	-20 to +55°C		
Configuration	125.5 X125.5X 30 mm		

## 5.8G Coaxial Duplexer

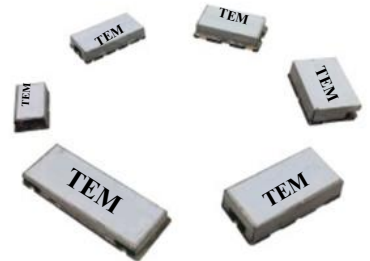
Pass Band	5787.5-5807.5MHz	5827.5-5847.5MHz
Insertion Loss	≤2.4dB	≤2.4dB
Rejection	5827.5-5847.5MHz ≥55dBc	5787.5-5807.5MHz ≥55dBc
	5650-5665MHz ≥50dBc	5745-5770MHz ≥50dBc
	4500-5650MHz ≥35dBc	4500-5745MHz ≥35dBc
	5847.5-6700MHz ≥35dBc	5880-6700MHz ≥35dBc
Connector	SMA-J	
VSWR	≤1.5	≤1.5
Impedance	50ohm	
Temperature	-20~+75°C	
Power Handling	≥1W	
Configuration	200x 30x 16 mm	

## Mobile Radio Quadriplexer

	(Port 1) GSM 850/900	(Port 2) GSM 1800	(Port 3) UMTS	(Port 4) LTE
Passband	824-960 MHz	1710-1880 MHz	1920-2170 MHz	2500-2690 MHz
Insertion Loss	≤0.6dB	≤1.2dB	≤1.2dB	≤0.8dB
VSWR	≤1.35			
Isolation	≥70dB @1710-1880M	≥70dB @824-960M ≥70dB @1920-2170M	≥70dB @1710-1880M ≥70dB @2500-2690M	≥70dB @1920-2170M
Power (CW)	100W			
Connector	N-Female			
Surface Color	Black Paint			

## LC Filters

- Wide frequency range: DC-4GHz
- Easy soldering and assembly, good solderability
- Small size, stable and reliable performance
- Light weight
- For Microwave communication, Data transmission, Radar, navigation, Electronic countermeasures, Aerospace



## LC Duplexers

- Low Frequency: 300KHz ~3GHz
- Wide bandwidth & high rejection
- Flexible frequency
- Low price & customization
- Power range: 1W ~ 20W
- For PCS DCS, CDMA, GSM , Wireless LAN , Cable TV , IF filtering

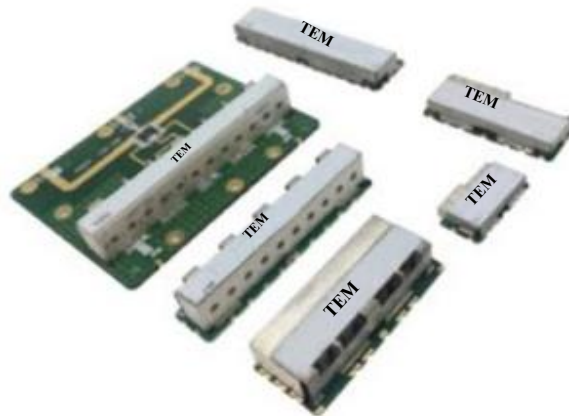


- Frequency range: 400MHz~6000MHz
- Power range: 5W~50W
- Smaller Size & Lighter Weight
- Application: Cellular, GPS, Cordless Phone, MCA, Satellite, Spread Spectrum, CATV, TCAS, Wlan, Inmarsat, Antenna Duplexer, Base station, Repeater, and etc



Temwell No.	Center Frequency (MHz)	Band Width	Insertion Loss	Attenuation
		(MHz) min	(dB) max.	(dB) min. (MHz)
TSDRM-457	457	$f_o \pm 15.0$	2.5	10 at $f_o + 50$ 20 at $f_o - 50$
TSDRM-864	864	$f_o \pm 5.0$	3.5	15 at $f_o + 24$ 17 at $f_o - 24$
TSDRM-915	915	$f_o \pm 12.5$	2	20 at $f_o + 100$ 35 at $f_o - 100$
TSDRM-2326	2326	$f_o \pm 7.0$	3	30 at $f_o - 100$ 20 at $f_o + 100$
TSDRM-1575P42	1575.42	$f_o \pm 15.0$	2.5	25 at $f_o - 100$ 16 at $f_o + 100$
TSDRM-1890	1890	$f_o \pm 40.0$	2	15 at $f_o + 250$ 35 at $f_o - 250$
TSDRM-2450	2450	$f_o \pm 50.0$	2	12 at $f_o + 250$ 15 at $f_o - 250$
TSDRM-3650	3650	$f_o \pm 75.0$	2	15 at $f_o + 750$ 25 at $f_o - 750$
TSDRM-5800	5800	$f_o \pm 100.0$	2	5 at $f_o + 400$ 15 at $f_o - 400$

- Frequency range: 400MHz~6000MHz
- Power range: 5W~50W
- Good out-of-band rejection and harmonic performance
- For Base station & Repeater ,Private network market , and Antenna system



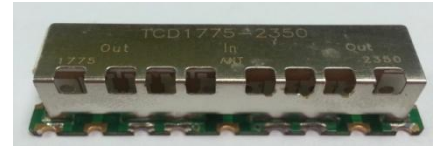
## SMD TETRA Duplexers

	Lower	Upper
Frequency	382.5MHz	392.5MHz
Bandwidth	Fo±2.5 (380-385M)	Fo±2.5 (390-395M)
Insertion Loss	4.0dB (Model A) 2.8dB (Model B)	4.0dB (Model A) 2.8dB (Model B)
Ripple	2.5 dB	2.5 dB
Attenuation	60dB @390~395M (Model A) 25dB @390~395M (Model B)	60dB @390~395M (Model A) 25dB @390~395M (Model B)
Operating Temperature	-40 °C to +85°C (Model A) -20 °C to +70°C (Model B)	
Impedance	50Ω	
Input Power	10 W	



# SMD Ceramic Multiplexers

- Integrate several signals in one module to save board space.
- Applications: Microwave Telecommunication, Radar, Aviation, Navigation, Mining, Electronics counterwork, Channel Management, and Satellite-Ground etc.



Application	Temstron PN	Central Frequency ( MHz )	Bandwidth ( MHz )	Insertin Loss ( dB )
GSM+TD-SCMA	TSCM-899-1900	899	20	2.7
		944	20	2.7
		1900	40	2.5
GSM1800+TD-SCMA	TSCM-1722-2017	1722.5	25	2.5
		1817.5	25	2.5
		2017.5	15	3
GSM+GSM1800+WCDMA	TSCM-897-1920	897.5	35	3
		1747.5	75	2.7
		1920	60	2
WCDMA+5G	TSCM-1795-3500	1795	170	2
		2595	160	2
		3500	200	2
CDMA+GSM1800	TSCM-830-1860	830	10	2.5
		875	10	2.5
		1765	20	2.5
		1860	20	2.5
GSM1800+WCDMA	TSCM-1747-2140	1747.5	75	5.2
		1842.5	75	5.2
		1950	60	3.5
		2140	60	3.5
GSM+DCS	TSCM-902-1842	902.5	25	2.7
		947.5	25	2.7
		1747.5	75	3.5
		1842.5	75	3.5
DCS+WCDMA	TSCM-1842-2140	1762.5	35	2.8
		1857.5	35	2.8
		1950	60	2.8
		2140	60	2.8
CDMA+GSM1800+WCDMA	TSCM-830-2140	830	11	3.5
		875	11	3.5
		1760	50	3.5
		1855	50	3.5
		1950	45	3.5
		2140	45	3.5

## SMD 5G Small Cell Base Station BPF

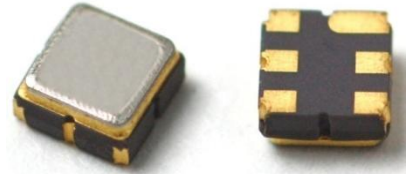
	TS-BS3500B200
Center Frequency(MHz)	3500
Band width(MHz)	200
Insertion Loss(dB)	1
Ripple in BW	0.5
VSWR in BW	1.5
Attenuation	30dBc@2110~2130
	60dBc@970-1150
	30dBc@4600-5000
Size (W*L*H)	8.5*4.2*3.6

## SMD Ceramic Waveguide Filter



- Frequency Range: 400MHz~7 GHz
- High Power (150W max.)
- Low Insertion Loss & High Rejection
- Substitute Cavity Filter
- Based On Ceramic Dielectric
- For Base Stations & Repeaters, Satellite & Communication Systems

- Application: GPS / COMPASS / GLONASS Devices
- Usable Passband: 2.0 / 4.095 / 8.34 MHz
- Low-amplitude Ripple
- Sharp Rejection
- Impedance: 50 Ohms
- Tape & Reel pack



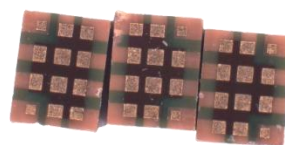
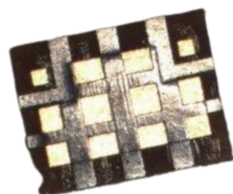
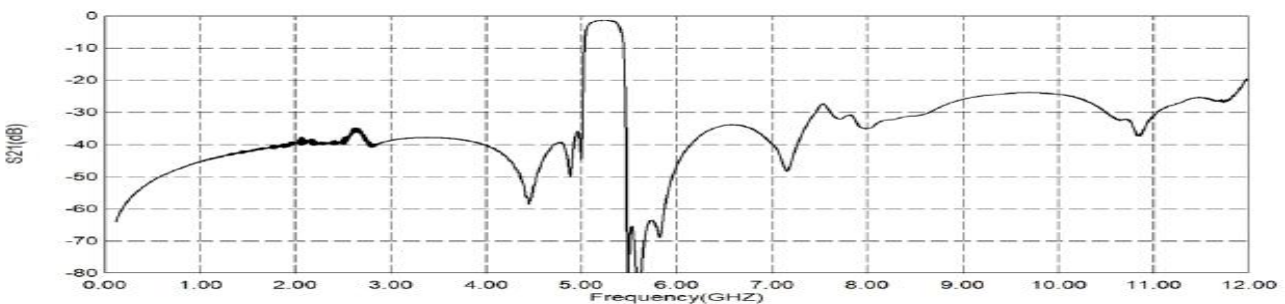
Category	Temwell PN	Band	Application	Murata
LTE Filter	TSS-B39-LTE	B39 TX	TD-SCDMA	SAFEA1G90MA0F0A SAFEA1G90MB0F0A
	TSS-B40A-LTE	B40 TX 2300~2400	TD-LTE	SAFEA2G35MH0F0A SAFFB2G35MA0F0A
	TSS-B41A-LTE	B41 TX 2555~2655		SAFEA2G60MA0F0A
	TSS-B41B-LTE	B41 TRX 2555~2655		SAFFB2G59MA3F0A
	TSS-B41C-LTE	B41 2535~2655 HP		SAFFB2G59MB3F0A
	TSS-B41E-LTE	B41 2535~2675 HP		SAFFB2G60MB4F0A
	TSS-B41G-LTE	B41 Full Band		SAFRC2G59MB0F0A SAFRC2G59MC0F0A
GPS Filter	TSS-1588E-GPS	G+C+C	NAVSTAR GPS	SAFFB1G56KB0F0A B8313
	TSS-1588SB-GPS	G+C+C SB	NAVSTAR GPS	SAFFB1G56FA0F0A
	TSS-1176A-GPS	L5	NAVSTAR GPS	SAFFB1G17AB0F0A
	TSS-1189A-GPS	L5+EB5	NAVSTAR GPS	SAFFB1G18AA0F0A
	TSS-L1L5-GPS	(L5+B2+L2)+(L1+B1+G1)		SAWFD1G20AA0F0A
	TSS-1588A-GPS	extractor BeiDou/GPS/Glonass + CELL		SADRM1G56AB0F0A
WIFI Filter	TSS-2442G-WIFI	WIFI HIGH REJECTION	WIFI	QORVO 885067
	TSS-2442H-WIFI	Low loss		For Wearable Devices

# SAW Duplexers and Module

Category	Temwell PN	Band	Application	Murata
Notch filter	TSS-1817-NF	Band34/39 Post PA Filter High rejection at DCS(CMCC)	NA	SACEA1G81TA0F0A
Duplexer	TSSD-B1A-WCDMA	B1 DPX SB	WCDMA/LTE-FDD	SAYEY1G95HA0F0A B1255 SAYRH1G95BA0F0A SAYAV1G95BA0F0A
	TSSD-B1BWCDMA	B1 DPX SS HP		SAYEY1G74BC0B0A SAYRV1G74BC0C0A
	TSSD-B3-WCDMA	B3 DPX SS HP TC		SAYEY2G53CA0F0A
	TSSD-B7A-LTE	B7 DPX SB	LTE-FDD	SAYEY2G53BG0F0A SAYRZ2G53BC0E0A
	TSSD-B7B-LTE	B7 DPX SS HP	LTE-FDD	SAYEY897MCA0B0A SAYEY897MCG0F0A
	TSSD-B8A-WCDMA	B8 DPX SB	WCDMA/LTE-FDD	B1257 SAYEY897MBC0B0A
	TSSD-B8B-WCDMA	B8 DPX SS HP TC	WCDMA/LTE-FDD	SAYEY806MCC0F0A
	TSSD-B20A-LTE	B20 DPX SB	LTE-FDD	B1256 SAYRH806MBA0B0A SAYAP806MBA0C0A
	TSSD-B20B-LTE	B20 DPX SS HP TC	LTE-FDD	B1268 SAYEY831MBA0B0A SAYRV831MBA0C0A
	TSSD-B26-LTE	B26 DPX SS HP TC	LTE-FDD	SAYEY718MBC0F0A
	TSSD-B28A-LTE	B28A DPX SS	LTE-FDD	SAYEY733MBC0F0A
	TSSD-B28B-LTE	B28B DPX SS	LTE-FDD	
RF Module	TSS-B1A-RFM	B1/66,2,3,5/26,8,40,41F	Includes 7 bands	QDM2313
	TSS-B1B-RFM	B1/66,2,3,5/26,7,8,40,41F	Includes 8 bands	QDM2311
	TSS-B1D-RFM	B1,3,5/26,8,34,39,40,41F	Includes 8 bands	QDM2314

Single Filter P/N: SPT5250					
Parameter	Condition [MHz]	Unit	Min.	Typ.	Max.
Insertion Loss	5170-5330	dB		1.6	2.1
Inband Ripple	5170-5330	dB		0.3	1.3
VSWR of Input Port	5170-5330			1.3	2
VSWR of Output Port	5170-5330			1.3	2
Absolute Attenuation	30-2400	dB	20	37	
	2400-2500	dB	20	37	
	2400-3000	dB	20	34	
	3400-3800	dB	25	37	
	3800-4900	dB	23	33	
	5490-5850	dB	50	60	
	7203-7500	dB	17	25	
	10300 -11800	dB	15	25	

Single Filter P/N: SPT5662					
Parameter	Condition [MHz]	Unit	Min.	Typ.	Max.
Insertion Loss	5490-5835	dB		1.8	2.3
Inband Ripple	5490-5835	dB		0.7	1.5
VSWR of Input Port	5490-5835			1.5	2
VSWR of Output Port	5490-5835			1.5	2
Absolute Attenuation	30-2400	dB	28	35	
	2400-2500	dB	28	35	
	2400-3000	dB	28	33	
	3400-3800	dB	28	33	
	3800-4900	dB	28	33	
	5170-5330	dB	53	58	
	7203-7500	dB	40	50	
	10300 -11800	dB	4	6	





Temwell PN	MOQ (pcs)	Package	Detailed Specs	Size (mm)	Temp (°C)	Picture
TSC-6LC32768	3K/reel	SMD	32.768KHz, 12.5pF, ±20PPM	8x3.8	-40~+85	
TSC-7L32768	3K/reel	SMD	32.768KHz, 12.5pF, ±20ppm	3.2x1.5	-40~+85	
TSC-6K632768	1K/bag	DIP	32.768KHz, 12.5pF, ±20ppm	2x6	-20~+70	
TSC-6K832768	1K/bag	DIP	32.768KHz, 12.5pF, ±20ppm	3x8	-20~+70	
TSC-12M1810	3K/reel	SMD	12MHz, 18pF, ±10ppm	3.2x2.5	-20~+70	
TSC-12M1210	3K/reel	SMD	12MHz, 12pF, ±10ppm	3.2x2.5	-20~+70	
TSC-16M1210	3K/reel	SMD	16MHz, 12pF, ±10ppm	3.2x2.5	-20~+70	
TSC-16M910	3K/reel	SMD	16MHz, 9pF, ±10ppm	3.2x2.5	-20~+70	
TSC-24M1210	3K/reel	SMD	24MHz, 12pF, ±10ppm	3.2x2.5	-20~+70	
TSC-25M1210	3K/reel	SMD	25MHz, 12pF, ±10ppm	3.2x2.5	-20~+70	
TSC-25M2010	3K/reel	SMD	25MHz, 20pF, ±10ppm	3.2x2.5	-20~+70	
TSC-26M910	3K/reel	SMD	26MHz, 9pF, ±10ppm	3.2x2.5	-20~+70	
TSC-27M1810	3K/reel	SMD	27MHz, 18pF, ±10ppm	3.2x2.5	-20~+70	
TSC-32M1210	3K/reel	SMD	32MHz, 12pF, ±10ppm	3.2x2.5	-20~+70	
TSC-49SMD Series	1K/reel	SMD	3~100MHz 16pF/20pF/30pF/32pF/bespoke ±30ppm/±20ppm/bespoke	/	-20~+70	

## Top Sales



Ways	Freq (GHz)	Insertion Loss (dB Min.)	VSWR	Isolation (Min.)
2-way	DC-40	7.5	1.5/2.5	12
4-way	DC-40	15	1.9/2.5	10
8-way	DC-40	23	1.6/2.5	10
2-way	0.01-1.8	1.6	2.10:1	18
4-way	0.01-1.8	4	2.80:1	18
8-way	0.01-1.8	6	2.80:1	18
2-way	0.698-2.7	0.35	1.30:1	18
3-way	0.698-2.7	1	1.35:1	18
4-way	0.698-2.7	0.7	1.30:1	18
2-way	0.7-3	0.6	1.20:1	24
3-way	0.7-3	0.9	1.40:1	22
4-way	0.7-3	0.8	1.30:1	20
6-way	0.7-3	1.2	1.40:1	18
8-way	0.7-3	1.5	1.40:1	18
12-way	0.7-3	2	1.40:1	18
16-way	0.7-3	2	1.50:1	18
2-way	0.5-4	0.5	1.30:1	20
4-way	0.5-4	1	1.40:1	18
8-way	0.5-4	1.8	1.50:1	18
2-way	0.5-8	1.5	1.5/1.3	18
4-way	0.5-8	2	1.5/1.4	18
8-way	0.5-8	2.5	1.5/1.4	18
2-way	1~4	0.4	1.25:1	20
4-way	1~4	0.7	1.25:1	20
8-way	1~4	1.2	1.25:1	20
2-way	2~4	0.4	1.20:1	20
4-way	2~4	0.6	1.20:1	20
8-way	2~4	1	1.25:1	20
16-way	2~4	1	1.25:1	18

Ways	Freq (GHz)	Insertion Loss (dB Min.)	VSWR	Isolation (Min.)
2-way	2~8	0.6	1.30:1	20
3-way	2~8	1.1	1.45:1	18
4-way	2~8	0.8	1.40:1	20
6-way	2~8	1.5	1.45:1	18
8-way	2~8	1.6	1.50:1	18
12-way	2~8	1.8	1.60:1	16
2-way	1-12.4	1.2	1.40:1	18
4-way	1-12.4	2.2	1.70:1	16
8-way	1-12.4	3.5	1.80:1	16
2-way	6~18	0.8	1.40:1	18
3-way	6~18	1	1.50:1	18
4-way	6~18	1.2	1.60:1	18
6-way	6~18	1.5	1.70:1	18
8-way	6~18	2.1	1.80:1	18
2-way	2~18	1.2	1.50:1	18
4-way	2~18	2	1.70:1	18
8-way	2~18	3.5	1.80:1	15
2-way	1~18	1.5	1.50:1	16
4-way	1~18	2.2	1.70:1	16
8-way	1~18	4	2.00:1	15
2-way	0.5-18	1.7	1.60:1	16
4-way	0.5-18	4	1.70:1	16
8-way	0.5-18	6	1.70:1	13
2-way	6-40	1.5	1.60:1	16
4-way	6-40	1.8	1.60:1	16
8-way	6-40	3.5	2.00:1	15
2-way	18-40	1.2	1.50:1	16
4-way	18-40	1.6	1.7/1.5	16
8-way	18-40	2	1.8/1.5	16

## Top Sales



Freq (GHz)	Coupling (dB)	Flatness (dB Max.)	Insertion Loss (dB Max.)	Directivity (dB Min.)	VSWR	Input Power (W)
0.698-2.7	20±1	±0.7	0.4	20	1.3:1	50
1~4	6±0.7	±0.4	0.4	20	1.2:1	20
0.5-6	10±1	±0.7	0.5	18	1.2:1	20
2~8	6±0.6	±0.35	0.4	20	1.2:1	20
0.5-18	10±1	±1.0	1.2	12	1.6:1	20
1~18	10±1	±0.8	1	12	1.6:1	20
1~18	20±1	±0.8	1	12	1.6:1	20
1~18	30±1	±0.8	1	12	1.6:1	20
2~18	10±1	±1.0	0.8	12	1.5:1	20
2~18	16±1	±1.0	0.8	12	1.5:1	20
2~18	20±1	±1.0	0.8	12	1.5:1	20
2~18	30±1	±1.0	0.8	12	1.5:1	20
4~18	6±1	±1.0	0.6	12	1.5:1	20
4~18	10±1	±1.0	0.6	12	1.5:1	20
4~18	20±1	±1.0	0.6	12	1.5:1	20
4~18	30±1.5	±1.0	0.6	12	1.5:1	20
6~18	6±1	±0.8	0.6	12	1.5:1	20
6~18	10±1	±0.8	0.6	12	1.5:1	20
6~18	20±1	±0.8	0.6	12	1.5:1	20
6~18	30±1.5	±0.8	0.6	12	1.5:1	20
2-40	10±1.0	±1.0	2.2	10	1.5:1	20
2-40	20±1.0	±1.0	1.7	10	1.6:1	20
2-40	30±1.0	±1.0	1.7	10	1.6:1	20
8-40	10±1.0	±1.0	1.6	10	1.6:1	20
8-40	20±1.0	±1.0	1	10	1.6:1	20
8-40	30±1.0	±1.0	1.5	10	1.6:1	20
18-40	10±1.0	±1.0	1.1	12	1.6:1	20
18-40	20±1.0	±1.0	1	12	1.6:1	20

Application: Military, Space, Commercial  
Dip-in / SMD / SMA or N are available

Model Number	Freq. Range (MHz)	Insertion Loss Max(dB)	Isolation Min(dB)	VSWR Max	Power(W) FWD/REV
TSSM100-410T420	410 ~ 420	0.5	20	1.25	100/100
TSSM100-600T640	600 ~ 640	0.4	20	1.25	100/100
TSSM100-700T750	700 ~ 750	0.3	23	1.2	100/100
TSSM100-830T915	830 ~ 915	0.35	23	1.2	100/100
TSSM100-925T960	925 ~ 960	0.3	23	1.2	100/100
TSSM100-1200T1300	1200 ~ 1300	0.35	21	1.2	100/100
TSSM100-1400T1600	1400 ~ 1600	0.35	21	1.25	100/100
TSSM100-1500T1700	1500 ~ 1700	0.35	21	1.25	100/100
TSSM100-1700T1900	1700 ~ 1900	0.35	21	1.25	100/100
TSSM100-1805T1990	1805 ~ 1990	0.35	21	1.2	100/100
TSSM100-1900T2200	1900 ~ 2200	0.35	21	1.25	100/100
TSSM100-2300T2500	2300 ~ 2500	0.3	23	1.2	100/100
TSSM100-2400T2600	2400 ~ 2600	0.3	23	1.2	100/100
TSSM100-2500T2700	2500 ~ 2700	0.3	23	1.2	100/100
TSSM100-2700T3100	2700 ~ 3100	0.4	20	1.25	100/100
TSSM100-3150T3250	3150 ~ 3250	0.3	23	1.2	100/100



Model Number	Freq. Range (MHz)	Insertion Loss Max(dB)	Isolation Min(dB)	VSWR Max	Power(W) FWD/REV
TSDI30-824T849	824 ~ 849	0.4	20	1.25	100/30
TSDI30-925T960	925 ~ 960	0.4	20	1.25	100/30
TSDI30-1070T1210	1070 ~ 1210	0.5	18	1.3	100/30
TSDI30-1200T1400	1200 ~ 1400	0.5	20	1.25	100/30
TSDI30-1250T1450	1250 ~ 1450	0.5	20	1.25	100/30
TSDI30-1450T1550	1450 ~ 1550	0.3	23	1.2	100/30
TSDI30-1500T1700	1500 ~ 1700	0.5	20	1.25	100/30
TSDI30-1805T1880	1710 ~ 1785	0.3	23	1.2	100/30
TSDI30-1805T1880	1805 ~ 1880	0.3	23	1.2	100/30
TSDI30-1920T1990	1920 ~ 1990	0.3	23	1.2	100/30
TSDI30-2110T2170	2110 ~ 2170	0.3	23	1.2	100/30
TSDI30-2400T2600	2400 ~ 2600	0.35	21	1.2	100/30
TSDI30-3150T3250	3150 ~ 3250	0.3	23	1.2	100/30
TSDI30-3400T3600	3400 ~ 3600	0.3	23	1.2	100/30
TSDI30-3600T3800	3600 ~ 3800	0.3	23	1.2	100/30
TSDI100-824T849	824 ~ 849	0.4	20	1.25	100/100
TSDI100-869T894	869 ~ 894	0.4	20	1.25	100/100
TSDI100-925T960	925 ~ 960	0.4	20	1.25	100/100
TSDI100-1070T1210	1070 ~ 1210	0.5	18	1.3	100/100
TSDI100-1200T1400	1200 ~ 1400	0.5	18	1.3	100/100
TSDI100-1450T1550	1450 ~ 1550	0.3	23	1.2	100/100
TSDI100-1500T1700	1500 ~ 1700	0.5	20	1.25	100/100
TSDI100-1805T1880	1710 ~ 1785	0.3	23	1.2	100/100
TSDI100-1805T1880	1805 ~ 1880	0.3	23	1.2	100/100
TSDI100-1920T1990	1920 ~ 1990	0.3	23	1.2	100/100
TSDI100-2110T2170	2110 ~ 2170	0.3	23	1.2	100/100
TSDI100-2400T2600	2400 ~ 2600	0.35	21	1.2	100/100
TSDI100-3150T3250	3150 ~ 3250	0.3	23	1.2	100/100
TSDI100-3400T3600	3400 ~ 3600	0.3	23	1.2	100/100
TSDI100-3600T3800	3600 ~ 3800	0.3	23	1.2	100/100

## RF Power Amplifier

Application: CW, AM, FM modulated signals,  
EMC test facilities, PIM test etc

High Output Power & Good Gain

Highly rugged and reliable design

Thermal Overload Protection & Over Current Protection

Custom Design, Frequency Range: 0.1 MHz to 6 GHz



Frequency Range	700 MHz to 6GHz
Gain	46 dB @ 0dBm
Gain Flatness	+/- 2.0 dB
Output Power	50W CW; 100W Peak
AC supply voltage	100-250 (single phase) Vac
AC Input Power	400W max.
RF Connector (in/out)	N(f) / N(f)
Noise Figure	14 dB
Operating Temperature	0 to +45°C
Dimension (approx.)	132*460*430 mm
Weight (approx.)	23 KG

Frequency Range	100 kHz to 200 MHz
Gain	44 dB @ 0dBm
Gain Flatness	+/- 2.0 dB max.
Output Power	30W CW
AC supply voltage	100-250 (single phase) Vac
AC Input Power	170W max.
RF Connector (in/out)	N(f) / N(f)
Noise Figure	9 dB (10MHz-200MHz)
Operating Temperature	0 to +50°C
Dimension (approx.)	132*460*430 mm
Weight (approx.)	21 KG

Frequency Range	6 GHz to 12 GHz
Gain	43 dB @ 0dBm
Gain Flatness	+/- 2.0 dB
Output Power	20W CW; 35W Peak
AC supply voltage	100-250 (single phase) Vac
AC Input Power	200W max.
RF Connector (in/out)	N(f) / N(f)
Noise Figure	9 dB
Operating Temperature	0 to +50°C
Dimension (approx.)	132*460*430 mm
Weight (approx.)	21 KG

Frequency Range	400-450 MHz
Gain	20 dB
Output Power	10W (40dBm)
Working Voltage	27VDC
RF in / out Ports	SMA-Female
Monitoring function	1-16dB
Size (approx.)	136*112*26mm

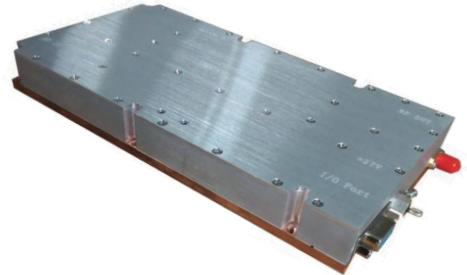


Bands	Freq Range (MHz)	Output Power (W)
GSM 900	890-915 / 935-960	2/5/10/20/30/40/50/60 up
DCS 1800	1710-1785 / 1805-1880	2/5/10/20/30/40/50/60 up
PCS 1900	1850-1910 / 1930-1990	2/5/10/20/30/40/50/60 up
GSM 850	824-849 / 869-894	2/5/10/20/30/40/50/60 up
CDMA 450	450-457.5 / 460-467.5	2/5/10/20/30/40/50/60 up
CDMA 800	824-849 / 869-894	2/5/10/20/30/40/50/60 up
CDMA 1900	1850-1910 / 1930-1990	2/5/10/20/30/40/50/60 up
UMTS 850	824-849 / 869-894	2/5/10/20/30/40/50/60 up
UMTS 2100	1920-1980 / 2110-2170	2/5/10/20/30/40/50/60 up
LTE	Customized	2/5/10/20 up
GSM 900/1800 Dual Band	890-915 / 935-060 1710-1785 / 1805-1880	2/5/10/20 up
GSM 850 / PCS 1900 Dual Band	824-849 / 869-894 1850-1910 / 1930-1990	2/5/10/20 up
GSM 900 / UMTS 2100 Dual Band	890-915 / 935-060 1920-1980 / 2110-2170	2/5/10/20 up
GSM 900 / DCS1800 / CDMA 2100 Tri-band	890-915 / 935-060 1710-1785 / 1805-1880 1920-1980 / 2110-2170	2/5/10/20 up
GSM 850 / PCS 1900 / LTE Tri-band	Customized	2/5/10/20 up
Tetra, iDEN, DMR, UHF, VHF	Customized	2/5/10/20/30/40/50/60 up



## High Power 100W & 50W

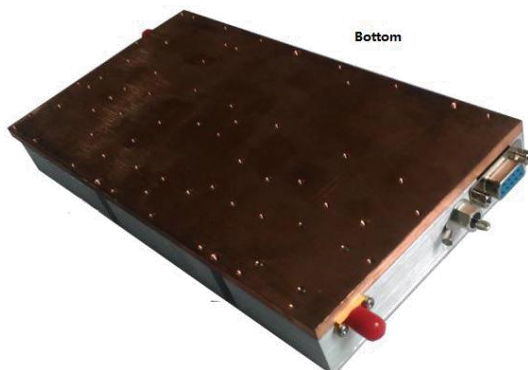
- Impedance: 50 Ohms
- Work Temperature: -25°C to +65°C
- Work Voltage: 28VDC±1V
- RF In/Out Port: SMA-Female Connector
- High Stability & Rugged
- For: GSM, DCS, LTE, Wi-Fi, GPS bands



Frequency Range		
851-894MHz, 925-960MHz, 1805-1880MHz 1930-1990MHz, 2110-2170MHz, 2620-2690MHz 2400-2500MHz, 1170-1280MHz, 1550-1620MHz or bespoke		
Output Power	50dBm±0.5dB	47dBm±0.5dB
Gain	>48dB±1.5dB	>45dB±1.5dB
VSWR	≤ 1.5	≤ 1.5
Work Current	<10A	<5.5A
Dimension	210*110*25 mm	180*90*25 mm

## Low Noise Amplifier With BUILT-IN Isolator

Frequency Range	5.8-6.5 GHz	6.4-7.2 GHz	10.25-10.70 GHz
Gain	>21-23 dB		
Output power	>10 dBm		
Size (approx.)	100 x 30 x 20 mm		



## RF Coaxial Attenuator

2W, 5W, 10W, 25W, 50W, 100W, 200W, 300W, STEP attenuator, etc.



Freq Range	Attenuation Value & Accuracy(dB)							VSWR
	3~6	10	20	30	40	50	60	
DC-3GHz	±0.5	±0.8	±1.0	±1.0	±2.0	±2.5	±3.0	≤1.20
DC-5GHz	1~9	10	20	30	40			≤1.25
	±0.6	±0.6	±0.6	±1.0	±1.2			
DC-8GHz	±0.7	±0.7	±0.7	±1.0	±1.2			≤1.25
DC-12.4GHz	±1.0	±0.7	±1.0	±1.2	±1.5			≤1.35
DC-18GHz	±1.2	±1.0	±1.2	±1.5	±1.8			≤1.40



## Coaxial DC-3G (2G) Dummy Loads/Termination Loads

Frequency	DC-3GHz						
VSWR	≤1.20:1						
Power	5w(2w)	10w	30w	50w	100w	200w	300w
Impedance	50 ohm						
Connector	N-type or DIN-type						
Temperature	-40~+125						
Humidity	5%-95%						

## 100W Low PIM Termination Load

Frequency Range	698-2700 MHz
VSWR	≤1.25
Low PIM	-160dBc@2x43dBm
Power Handling	100W Average
GSM 900/1800 Dual Band	890-915 / 935-060 1710-1785 / 1805-1880
GSM 850 / PCS 1900 Dual Band	824-849 / 869-894 1850-1910 / 1930-1990
GSM 900 / UMTS 2100 Dual Band	890-915 / 935-060 1920-1980 / 2110-2170



## For GSM 1800M & WCDMA 2100M

- Waterproof for Outdoor
- Allowing for Gain Adjustment & Contrast
- LCD Displace & Operation
- Work Temperature: -25°C to +65°C or -40°C to +55°C
- Power Supply: 48VDC
- Weight: approx 30kg

Freq Range	Uplink 1710-1785MHz 1920-1980MHz	Downlink 1805-1880MHz 2110-2170MHz
Output Power	33dBm	40dBm
Gain	85dB max	90dB max
VSWR	≤1.5	
Noise Figure	<5dB	
Group Delay	<1.5ns	
Low PIM (IMD3)	≤-45dBc/30KHz	
Out-band Rejection	≤-30dBc/30kHz@±200kHz	
Dimension	540*360*230 mm	

## For LTE, TETRA, GSM, WCDMA bands

- Waterproof for Outdoor
- Allowing for Gain Adjustment & Contrast
- ALC technology provides auto amplitude fixing
- Work Temperature: -25°C to +65°C or -40°C to +55°C
- Power Supply: 110VAC or 220VAC
- Weight: approx 18kg

Freq Range	Uplink 746-756MHz 806-824MHz 824-849MHz 890-915MHz 1850-1910MHz 2500-2570MHz or bespoke	Downlink 776-786MHz 851-869MHz 869-894MHz 935-960MHz 1930-1990MHz 2620-2690MHz or bespoke
Output Power	33dBm	40dBm
Gain	90dB max	95dB max
VSWR	≤ 1.5	
Noise Figure	<5dB	
Group Delay	<10ns	
Low PIM (IMD3)	≤ -40dBc/30KHz	
Out-band Rejection	≤ -60dB@±10MHz	
Dimension	610*440*250 mm	

No.	Frequency (MHz)	Bandwidth (MHz)	Gain (dBi)	Max. Power Input Watts	Diameter of Chassis	Connector	Length
1	400~470	10~15	5.5	100	27mm	SL16-J	93CM
2	144 & 430	6~12	2.15 & 3	100	18mm	SL16-J	43CM
3	144 & 430	5~12	2.15 & 5.5	70	20mm	SL16-J	98CM
4	144 & 430	5~12	2.15 & 5.5	70	20mm	SL16-J	99CM
5	144 & 430	5~12	2.15 & 5.2	70	21.7mm	SL16-J	74CM
6	144 & 430	6~12	2.15 & 3	100	18mm	SL16-J	39CM
7	144 & 430	5~12	2.15 & 5.2	100	21.7mm	SL16-J	65CM
8	27	3	2	150	26mm	SL16-J	71CM
9	29	3	2	150	26mm	SL16-J	105CM
<b>VSWR</b>	$\geq 1.5$			<b>Radiation</b>		Omni	
<b>Impedance</b>	50ohm			<b>Lighting Protection</b>		Direct Ground	
<b>Polarization</b>	Vertical			<b>Radiating Element Material</b>		Stainless Steel	

Frequency Range (Dual Band)	136~174 / 400~470 MHz	136~174 / 400~470 MHz
Bandwidth	2 / 5 MHz	3/7 MHz
Impedance	50 ohm	50 ohm
VSWR	$\leq 1.5$	$\leq 1.5$
Gain	1.5 dBi	2.15 dBi
Input Power	10 Watt	10 Watt
Length	7 cm	18.2 cm
Connector	BNC/SMA-Male/SMA-Female/Motorola Connector	
Diameter of Chassis	14.6 mm	14.3 mm
Radiating Element Material	Copper (CU)	Copper (CU)
Net Weight	21.6 g	14.6 g



**Applications: AM and FM IFTs, Amateur Radio, QRP Circuits, Toys, Audio System, and etc**  
**Alternatives of TOKO , Smida, and other custom Coils**

## **5mm TYPE 5P, 5PG, 5PA, 5PAG**

**Frequency Range:** 5P, 5PG 0.2~2.0MHz, 5PA, 5PAG 0.1-1MHz

5P, 5PG High Frequency 1-15MHz

**Inductance Range:** 5P, 5PG 30-680uH

5P, 5PG High Frequency 1-40UH

5PA, 5PAG 100uH-4.5mH

TYPE: 5PNR, 332PN, 451AN



## **7mm TYPE 7P High Frequency**

**Frequency Range:** 2-20MHz

**Inductance Range:** 1-82uH

**Internal Capacitance Values:** 5-100pF

TYPE: A119ANS, 119AC, 119FC, 119LC

## **7mm TYPE 7KL**

**Frequency Range:** 1-120MHz

**Inductance Range:** 0.03-50uH

**Internal Capacitance Values:** 5~100pF

## **7mm TYPE 7PA**

**Frequency Range:** 10-200kHz

**Inductance Range:** 1-25mH

**Internal Capacitance Values:** 10~6800pF

TYPE: 126ANS

## **7mm TYPE 7KM**

**Frequency Range:** 2-120MHz

**Inductance Range:** 0.03-82uH

**Internal Capacitance Values:** 5~100pF

## **7mm TYPE 7PLA**

**Frequency Range:** 10-200kHz

**Inductance Range:** 1-15mH

**Internal Capacitance Values:** 10-6800pF

TYPE: 284XNS

## **10mm TYPE 10PA**

**Frequency Range:** 10-200kHz

**Inductance Range:** 1-56mH

TYPE: CLNS

## **10mm TYPE 10K**

**Frequency Range:** 2-120MHz

**Inductance Range:** 0.08-82uH

**Internal Capacitance Values:** 5-100pF

## **10mm TYPE 10EZ**

**Frequency Range:** 0.2-2MHz (10EZ)

2-15MHz (10EZ High Freq.)

**Inductance Range:** 1uH-2mH (10EZ)

2-55uH (10EZ High Freq.)

**Internal Capacitance Values:** 150-390pF (10EZ),

5-100pF (10EZ High Freq.)

## **12mm TYPE 12VX**

**Bias Oscillator Coils**

**Frequency Range:** 10-200kHz

**Inductance Range:** 560uH-18mH



**Applications: Maritime communication device, Satellite phone, Airborne Transceiver & Telecommunication equipment, and etc**  
**Alternatives of TOKO , Sumida, and other custom Coils**

## TYPE FSDV

For Reflow Soldering

**Frequency Range:** 0.2~15MHz

**Inductance Range:** 1uH~7mH

**Q Approx:** 60 (at 455kHz and 10.7MHz)

TYPE: 836AN, 836BN

## TYPE 5CCB

For Reflow Soldering

**Frequency Range:** 10~150MHz

**Inductance Range:** 0.03~10uH

**Q Approx:** 50 (at 100MHz)

## TYPE 5CCE

For Reflow Soldering

**Frequency Range:** 10~150MHz

**Inductance Range:** 0.05~2.7uH

**Q Approx:** 70 (at 100MHz)

## TYPE 5CCD

For Reflow Soldering

**Frequency Range:** 0.1MHz-2MHz

0.1MHz-15MHz (High Freq)

**Inductance Range:** 1uH-1400uH

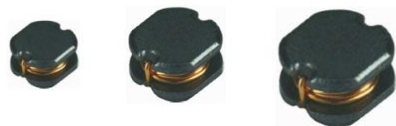
**Unloaded Q :** 30/65 (ref)

**Inductance Variable Range :** Lo±3 to 5% (ref)

TYPE: 614BN



**Custom upon requests**



## Features

- Transformation ratio 1:1:8.42 to 1:1:15
- Inductance range from 1.8 mH to 5 mH
- Operates between 52 kHz and 300 kHz
- 9.0x7.6x7.1mm highly compact size
- Operate Temperature Range: -40°C to +125°C
- Excellent Interference Suppression
- Impedance Matching between ICs and Ultrasonic transmitters or receivers
- Support 2.4 GHz Bluetooth LE standard
- AEC-Q200 qualified



## Applications

- Drones and Logistics Robots
- Liquid Level Measuring System
- Park Assistance System
- Automated Guided Vehicles (AGVs)
- Industrial Robots

## Ceramic Non-conductive Tuning Tools

For any adjustable / variable coils

P/N	Screw	Length	Diameter	Thickness	Net Weight
	Slots Type	(mm)	(mm)	(mm)	(g)
TCD-15	-	115	1.3	0.4	5
TCD-20	-	115	1.8	0.4	5
TCD-25	-	115	2.5	0.4	5
TCD-100	+	115	2.5	N/A	5

Tolerance: ±0.2mm

