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### Chip Dielectric Filters

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## *TDF Description*

TOKO's TDF Series is a broad line of miniature chip dielectric filters. They are dielectric resonator coupled bandpass filters made of a unique monolithic construction. The filters are ultra compact and exist in several low profile versions, some less than 2.0mm, making them ideal for PCMCIA applications. Standard parts are available for most common worldwide communication systems including: cellular, 900 MHz cordless, RF LANs, GPS, PCN, PHS, DECT and PCS.

## Notes

- 1.) Please be sure that you carefully discuss your planned purchase with our sales division if you intend to use the products in this catalog under conditions where particularly extreme standards of reliability are required, or if you intend to use products for applications other than those listed in this catalog. Products in this catalog are intended for consumer applications and not for critical applications such as:
  - Power drive products for automobile, ship or aircraft transport systems: steering and navigation systems, emergency signal communications systems, and any system other than those mentioned above which include electronic sensors, measuring, or display devices, and which could cause major damage to life, limb or property if misused or fail to function.
  - Medical devices for measuring blood pressure, pulse, etc., treatment units such as coronary pacemakers and heat treatment units, and devices such as artificial organs and artificial limb systems which augment physiological functions.
  - Electrical instruments, equipment or systems used in disaster or crime prevention.
  - Conventional weapons and weapons of mass destruction (nuclear, biological, or chemical).
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- 3.) This catalog does not signify that TOKO agrees implicitly or explicitly to license any patent rights or other intellectual property rights which it holds.
- 4.) No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.

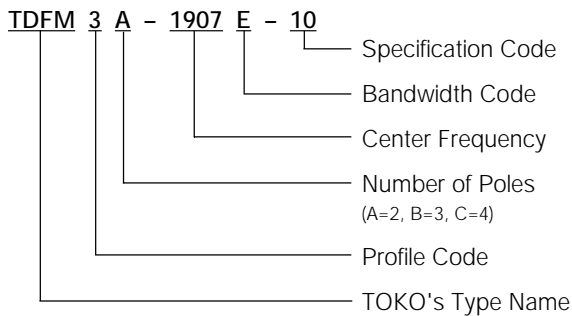
## TYPE TDF, TDFM, TDFS

Frequency Range: 800-6000MHz

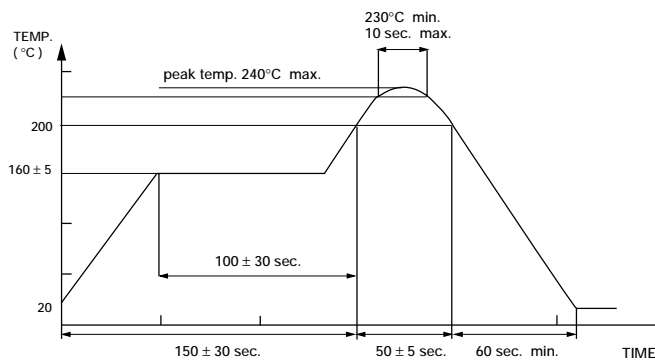
### Features

- 800 - 6000 MHz
- Low profile package
- Excellent out-of-band attenuation
- 50Ω input/output impedance
- Reflow solderable
- Packaged on tape/reel

### Part Numbering

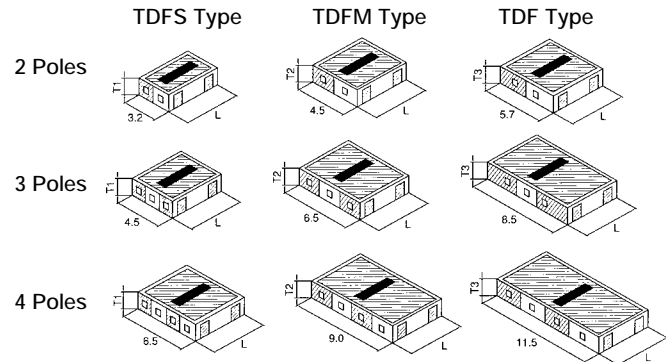


### Recommended Soldering Profile



Note: Solder Pad Layout varies by part number.  
Please contact TOKO America for specific pattern layout.

### Dimensions



### Height by Type

Type	# Poles	Height: T Max. (mm)
TDF2A	2	2.25
TDF3A	2	3.0
TDFM1A	2	2.0
TDFM1B	3	2.0
TDFM2A	2	2.25
TDFM2B	3	2.25
TDFM3A	2	2.8
TDFM3C	4	2.8
TDFS8A	2	1.8
TDFS8B	3	1.8
TDFS1A	2	2.0
TDFS1B	3	2.0
TDFS1C	4	2.0

### Precautions

1. Operating environment  
The design of the product assumes that the product will be used in a general environment (normal temperature, normal humidity, and normal pressure). If the customer intends to use the product in a special environment, contact TOKO.
2. Storage conditions  
(1) First-in, first-out  
(2) Temperature: -10 to +40°C  
Humidity: 80%RH or less  
No dust or unusual gas (e.g., corrosive gas) shall exist.  
The product should not be stored exceeding six months (as packaged by TOKO) or one month (once unpackaged). Use the product within that period.
3. Soldering  
The product has been designed for reflow soldering. If using a soldering iron is inevitable, apply preheating at 120°C for two to three minutes, then perform soldering with a soldering iron temperature not exceeding 280°C. Finish soldering for each terminal within three seconds.
4. Others  
Do not connect terminals to DC voltage.

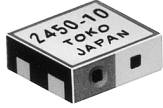
## SELECTION GUIDE BY FREQUENCY

<i>TYPE TDF FAMILY</i>				
TOKO Part Number	Poles	Fo (MHz)	Application	Page
TDF2A-836E-10=P	2	836.5	AMPS/CDPD	4
TDF2A-881E-10=P	2	881.5	AMPS/CDPD	4
TDFS8A-904A-11=P	2	904.0	900 CT	8
TDFM2A-915E-10=P	2	915.0	900 ISM	6
TDFS1B-915E-10=P	3	915.0	900 CT	8
TDFS8A-915E-10=P	2	915.0	900 CT	8
TDFM2B-915E-10=P	3	915.0	900 ISM	6
TDFS8A-926A-11=P	2	926.0	900 CT	8
TDFM1A-930A-12=P	2	930.5	PAGER	6
TDFS8A-930A-10=P	2	930.5	PAGER	8
TDFM2B-942G-10=P	3	942.5	PDC	6
TDFM2A-1090C-11=P	2	1090.0	DTV	6
TDF3A-1280H-10=P	2	1280.0	RADIO	4
TDFM2B-1472H-10=P	3	1472.0	DAB	6
TDFM3A-1472H-10=P	2	1472.0	DAB	6
TDFS8A-1575A-10=P	2	1575.4	GPS	8
TDF2A-1575B-11=P	2	1575.4	GPS	4
TDF2A-1575B-12=P	2	1575.4	GPS	4
TDF2A-1575B-13=P	2	1575.4	GPS	4
TDF3A-1575B-10=P	2	1575.4	GPS	4
TDFM2A-1575A-10=P	2	1575.4	GPS	6
TDFM2A-1575A-11=P	2	1575.4	GPS	6
TDFM1B-1747O-11=P	3	1747.5	PCN	6
TDFM1B-1842O-11=P	3	1842.5	PCN	6
TDFM1B-1880L-11=P	3	1880.0	PCS	6
TDFM3C-1880L-11=P	4	1880.0	PCS	6
TDFM3A-1890D-16=P	2	1890.0	DECT	6
TDF3A-1907E-18=P	2	1907.0	PHS	4
TDF3A-1907E-19=P	2	1907.0	PHS	4
TDFM3A-1907E-10=P	2	1907.0	PHS	6
TDFM3A-1907E-11=P	2	1907.0	PHS	6
TDFM1B-1920V-10=P	3	1920.0	PCS CT	6
TDFM2A-1920D-10=P	2	1920.0	PCS CT	6
TDFM1B-1950L-10-01=P	3	1950.0	IMT2000	6
TDFM1B-1960L-11=P	3	1960.0	PCS	6
TDFM3B-1960L-13AP	3	1960.0	PCS	6
TDFM3C-1960L-10=P	4	1960.0	PCS	6
TDFM1B-2140L-10=P	3	2140.0	IMT2000	6
TDFS8B-2326C-10A-01=P	3	2326.0	SDARS	8
TDFS1C-2326C-10A=P	4	2326.0	SDARS	8
TDFS1C-2326C-11A=P	4	2326.0	SDARS	8
TDFM1B-2332E-10=P	3	2332.5	SDARS	6
TDFM3C-2332J-10=P	4	2332.5	WLL	6
TDFS8A-2338B-11=P	2	2338.5	SDARS	8
TDFS8A-2338E-10=P	2	2338.5	SDARS	8
TDFM3C-2426J-10=P	4	2426.5	WLL	6
TDF2A-2442A-11=P	2	2442.0	RF LAN	4
TDF2A-2450T-10=P	2	2450.0	RF LAN	4
TDFM1A-2450T-10=P	2	2450.0	RF LAN	6
TDFM1B-2450T-10=P	3	2450.0	RF LAN	6
TDFM1C-2450T-10=P	4	2450.0	RF LAN	6
TDFS1A-2450T-11=P	2	2450.0	RF LAN	8
TDFS8A-2450T-13AP	2	2450.0	RF LAN	8
TDF2A-2484A-10=P	2	2484.0	RF LAN	4
TDF2A-2484E-11=P	2	2484.0	RF LAN	4
TDF2A-2484E-12=P	2	2484.0	RF LAN	4
TDFM1A-2484E-10=P	2	2484.0	RF LAN	6
TDFM1A-2484E-11=P	2	2484.0	RF LAN	6
TDF2A-2500A-12=P	2	2500.0	VICS	4
TDFM2A-5250X-10=P	2	5250.0	RF LAN	6
TDFM2A-5775V-11=P	2	5775.0	5.8G LAN	6
TDFM2A-5775T-10-01=P	2	5775.0	5.8G LAN	6
TDFM2A-5800B-10=P	2	5800.0	ETC	6

Note: As shown above, P or =P is added to each part number to indicate tape and reel packaging.

## TYPE TDF (2 POLE SMD)

Frequency Range: 800-2500MHz

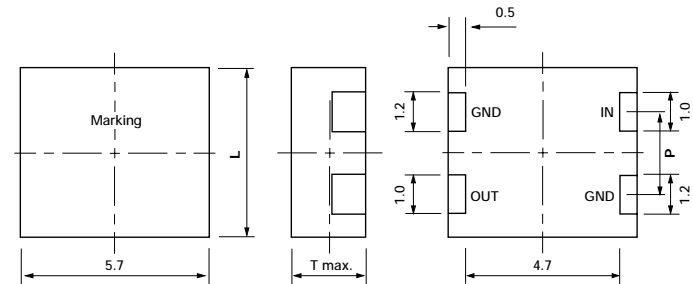


### Features

- Low profile design
- Excellent out-of-band attenuation
- Packaged on tape/reel, reflow solderable
- Well suited for PCMCIA cards
- 50Ω input/output impedance

## OUTLINE DIMENSIONS

### TDF (2-Pole)



Unit: mm

Note: Not necessarily to scale. Pin layout may vary per part number.  
Contact TOKO America for detailed specifications.

## HEIGHT BY TYPE

Type	# Poles	Height: T Max. (mm)
TDF2A	2	2.25
TDF3A	2	3.0

## STANDARD PART NUMBER LIST

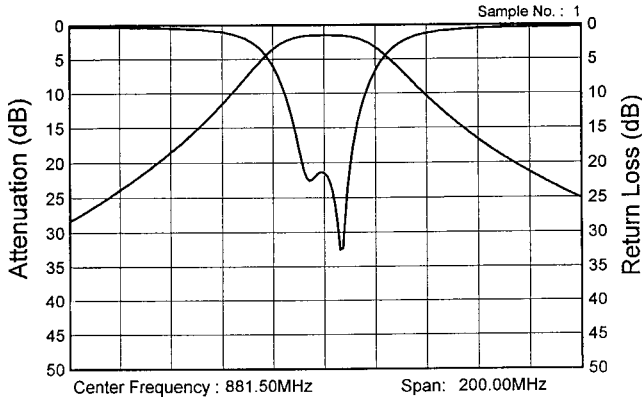
### TYPE TDF (2 Pole)

TOKO Part Number	Poles	Fo (MHz)	BW (Fo ± MHz Min)	I.L. (dB Max)	VSWR	Length (L mm)	Pin Pitch (P mm)	Selectivity (dB min @ MHz)	Application
TDF2A-836E-10=P	2	836.5	12.5	2.7	2.0	9.9	4.5	6 (Fo ±32.5)	AMPS
TDF2A-881E-10=P	2	881.5	12.5	2.7	2.0	9.4	4.5	6 (Fo ±32.5)	AMPS
TDF3A-1280H-10=P	2	1280.0	20.0	2.0	2.0	6.1	3.0	26 (Fo - 100)	RADIO
TDF2A-1575B-11=P	2	1575.4	5.0	5.5	2.3	5.4	2.5	22 (Fo ±50)	GPS
TDF2A-1575B-12=P	2	1575.4	5.0	2.7	2.0	5.2	2.5	30, 28 (Fo -140, +140)	GPS
TDF2A-1575B-13=P	2	1575.4	5.0	1.0	2.0	5.2	2.0	7 (Fo ± 140)	GPS
TDF3A-1575B-10=P	2	1575.4	5.0	3.0	2.2	5.4	2.5	28, 26 (Fo -140, +140)	GPS
TDF3A-1907E-18=P	2	1907.0	12.5	0.75	1.5	6.1	3.0	45, 9 (Fo -485, +235)	PHS
TDF3A-1907E-19=P	2	1907.0	12.5	0.7	1.5	5.9	2.5	35, 5 (Fo -485, +235)	PHS
TDF2A-2442A-11=P	2	2442.0	2.0	4.3	2.0	5.2	2.5	15 (Fo ±60)	RF LAN
TDF2A-2450T-10=P	2	2450.0	50.0	2.0	2.0	5.1	2.5	20, 16 (Fo -280, +280)	RF LAN
TDF2A-2484A-10=P	2	2484.0	2.0	4.3	2.0	5.2	2.5	15, 20 (Fo ±60, ±90)	RF LAN
TDF2A-2484E-11=P	2	2484.0	13.0	3.0	1.6	5.1	3.0	35, 30 (Fo ±350, ±700)	RF LAN
TDF2A-2484E-12=P	2	2484.0	13.0	2.0	1.6	5.1	3.0	25, 30 (Fo ±350, ±700)	RF LAN
TDF2A-2500A-12=P	2	2500.0	2.0	5.0	2.0	5.2	3.0	20, 25 (Fo ±60, ±90)	VICS

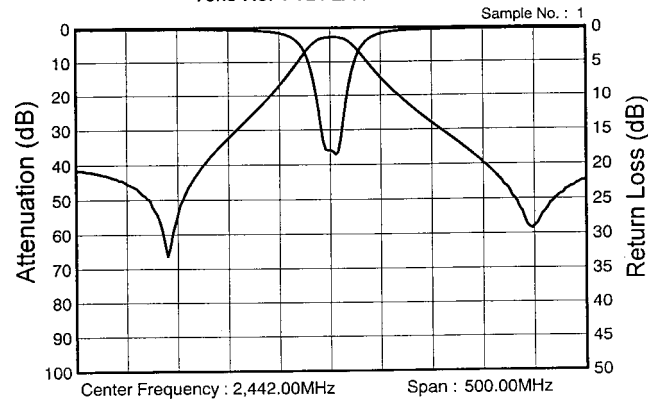
Note: =P is added to each part number to indicate tape and reel packaging.

TYPICAL CHARACTERISTICS

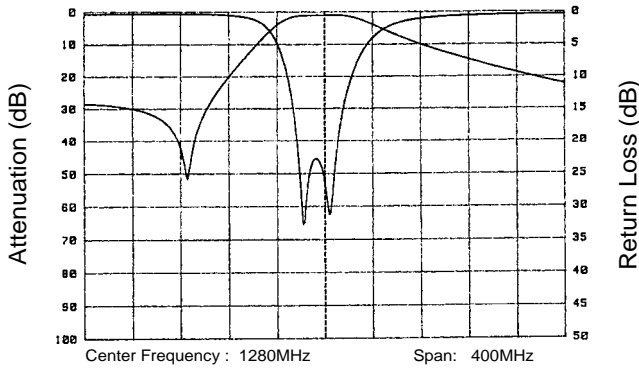
Toko No. : TDF2A-881E-10



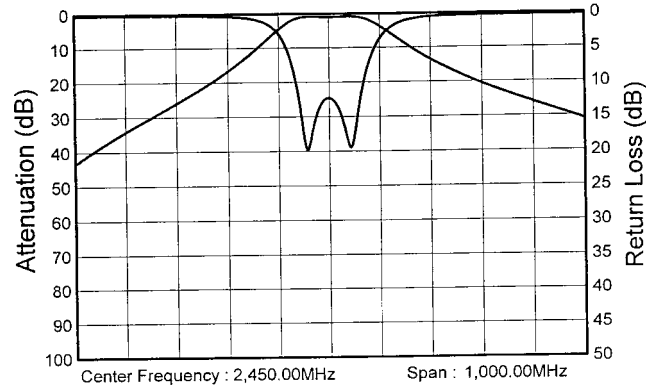
Toko No. : TDF2A-2442A-11



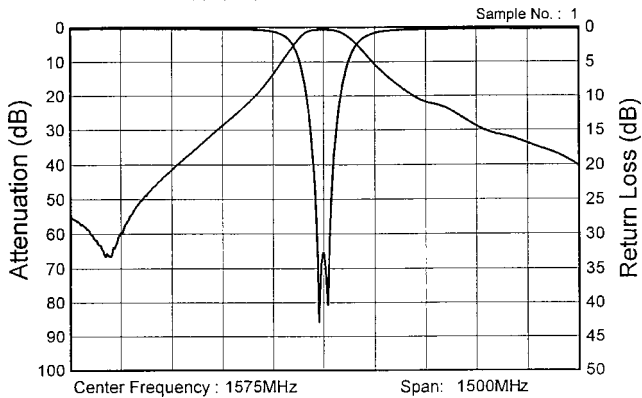
Toko No. : TDF3A-1280H-10



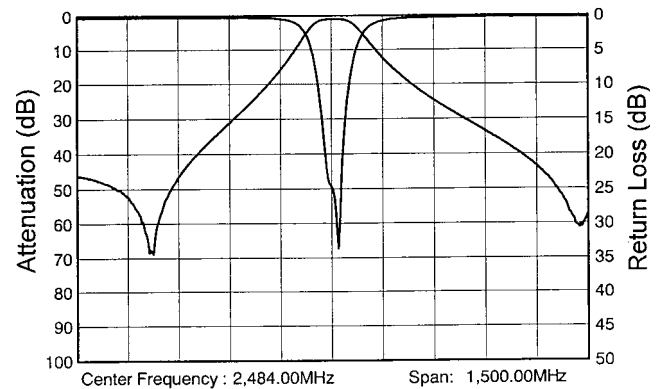
Toko No. : TDF2A-2450T-10



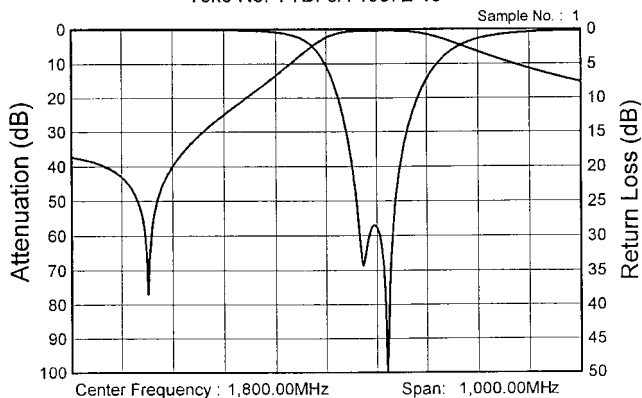
Toko No. : TDF2A-1575B-13



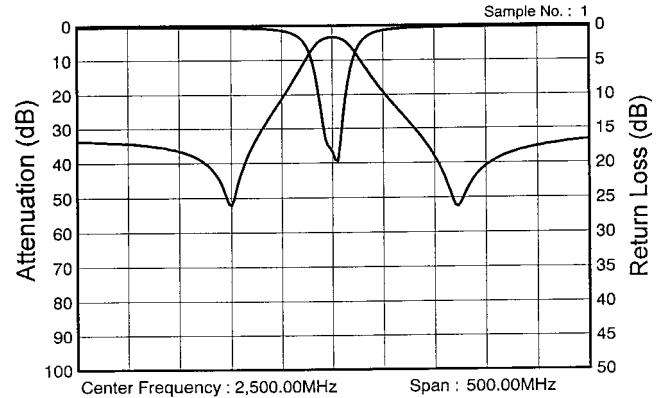
Toko No. : TDF2A-2484E-12



Toko No. : TDF3A-1907E-19

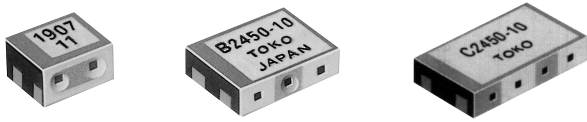


Toko No. : TDF2A-2500A-12



## TYPE TDFM (2, 3, 4 POLE SMD)

Frequency Range: 800-6000MHz



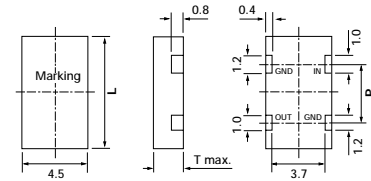
## Features

- Available in 2, 3, or 4 pole design
- Miniature low profile SMD package
- 50Ω input/output impedances
- Packaged on tape/reel, reflow solderable

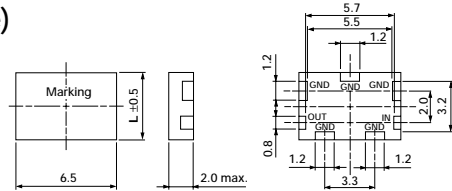
## HEIGHT BY TYPE

Type	# Poles	Height: T Max. (mm)
TDFM1A	2	2.0
TDFM1B	3	2.0
TDFM2A	2	2.25
TDFM2B	3	2.25
TDFM3A	2	2.8
TDFM3C	4	2.8

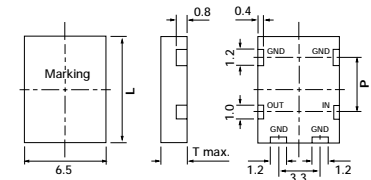
## TDFM (2-Pole)



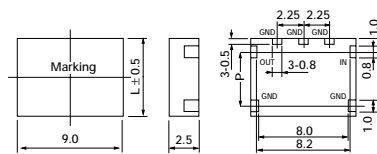
## TDFM1B (3-Pole)



## TDFM2B (3-Pole)



## TDFM (4-Pole)



Unit: mm

Note: Not necessarily to scale. Pin layout may vary per part number.  
Contact TOKO America for detailed specifications.

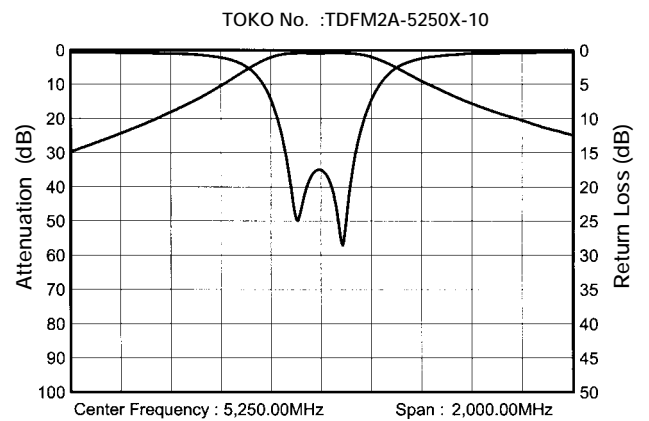
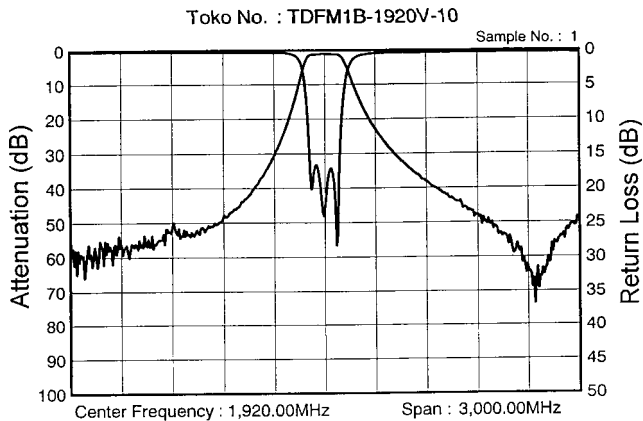
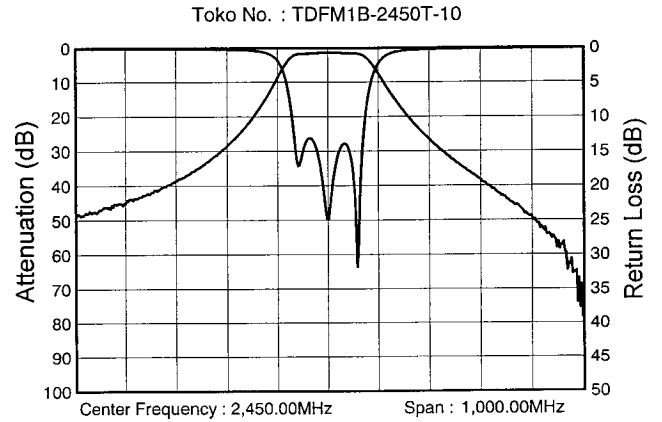
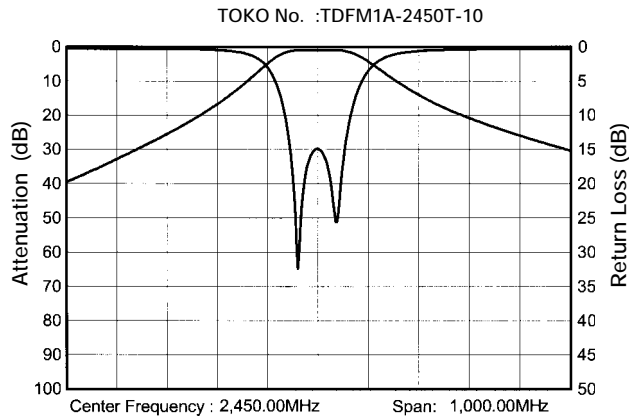
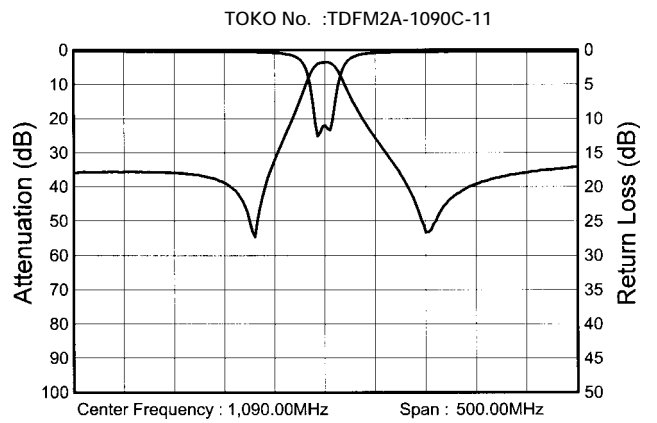
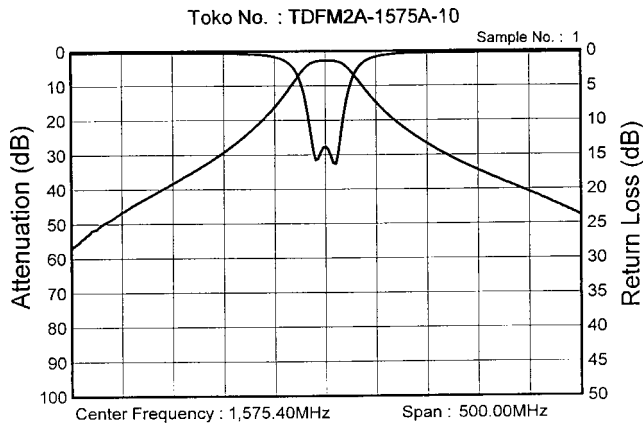
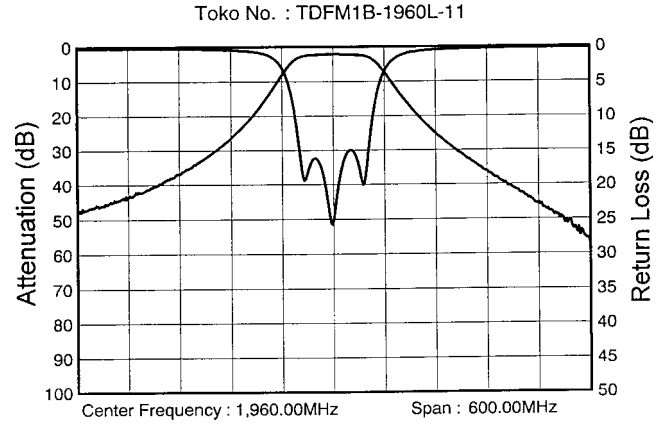
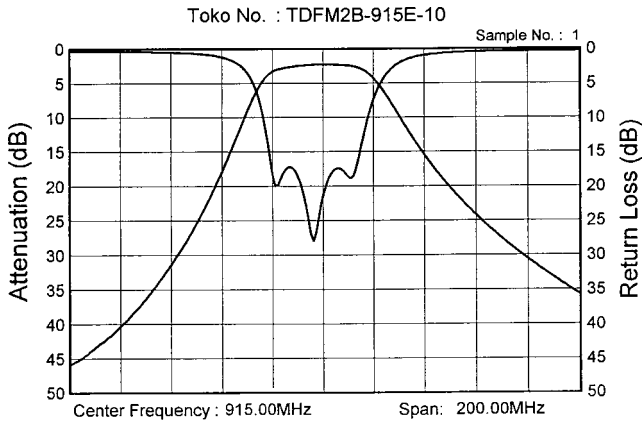
## STANDARD PART NUMBER LIST

## TYPE TDFM (2, 3 and 4 Pole)

TOKO Part Number	Poles	Fo (MHz)	BW (Fo ± MHz Min)	I.L. (dB Max)	VSWR	Length (L mm)	Pin Pitch (P mm)	Selectivity (dB min @ MHz)	Application
TDFM2A-915E-10=P	2	915.0	13.0	3.0	2.0	7.7	4.0	12 (Fo ±50)	900 ISM
TDFM2B-915E-10=P	3	915.0	13.0	3.5	2.0	7.9	4.0	18 (Fo ±50)	900 ISM
TDFM1A-930A-12=P	2	930.5	1.5	3.5	2.0	7.5	—	40 (Fo -90)	PAGER
TDFM2B-942G-10=P	3	942.5	17.5	2.5	2.0	8.25	2.5	45 (Fo +243)	PDC
TDFM2A-1090C-11=P	2	1090.0	7.0	5.5	2.5	7.6	2.5	35, 33 (Fo -80, +80)	DTV
TDFM3A-1472H-10=P	2	1472.0	20.0	1.8	2.0	5.3	2.5	38 (Fo -422)	DAB
TDFM2B-1472H-10=P	3	1472.0	20.0	3.0	2.0	5.6	2.5	34 (Fo ±215)	DAB
TDFM2A-1575A-10=P	2	1575.4	1.0	3.2	2.0	5.25	2.5	30, 28 (Fo -140, +140)	GPS
TDFM2A-1575A-11=P	2	1575.4	1.0	5.5	2.3	5.2	2.0	22 (Fo -50)	GPS
TDFM1B-1747O-11=P	3	1747.5	37.5	3.2	2.0	4.75	2.0	25, 25 (Fo ±160, ±240)	PCN
TDFM1B-1842O-11=P	3	1842.5	37.5	3.2	2.0	4.5	2.0	8, 25 (Fo ±80, ±160)	PCN
TDFM1B-1880L-11=P	3	1880.0	30.0	3.2	2.0	4.4	2.0	34, 39 (Fo ±190, ±240)	PCS
TDFM3C-1880L-11=P	4	1880.0	30.0	4.0	2.0	6.8	4.0	12 (Fo +50)	PCS
TDFM3A-1890D-16=P	2	1890.0	10.0	1.8	2.0	6.2	4.0	30, 5 (Fo -216, -48)	DECT
TDFM3A-1907E-10=P	2	1907.0	12.5	1.0	1.5	3.8	2.0	40, 10 (Fo -485, +235)	PHS
TDFM3A-1907E-11=P	2	1907.0	12.0	1.6	1.5	3.8	2.0	35, 20 (Fo -485, +235)	PHS
TDFM1B-1920V-10=P	3	1920.0	70.0	2.0	2.0	4.1	2.0	25 (Fo -350, +780)	PCS
TDFM2A-1920D-10=P	2	1920.0	10.0	3.0	2.0	4.3	2.5	33, 27 (Fo -170, +170)	PCS
TDFM1B-1950L-10-01=P	3	1950.0	30.0	3.3	2.0	4.2	—	25, 25 (Fo -230, +160)	IMT2000
TDFM1B-1960L-11=P	3	1960.0	30.0	3.2	2.0	4.2	2.0	34, 39 (Fo ±190, ±240)	PCS
TDFM3C-1960L-10=P	4	1960.0	30.0	4.0	2.0	6.4	4.5	10 (Fo ±50)	PCS
TDFM3B-1960L-13AP	3	1960.0	30.0	3.3	2.0	6.5	—	20 (Fo -50, Fo -110)	PCS
TDFM1B-2140L-10=P	3	2140.0	30.0	3.3	2.0	5.85	—	25 (Fo ±160)	IMT2000
TDFM1B-2332E-10=P	3	2332.5	12.5	3.0	2.0	5.35	—	32, 32 (Fo -226, +239)	SDARS
TDFM3C-2332J-10=P	4	2332.5	25.0	3.5	2.0	5.45	3.0	25 (Fo +260)	WLL
TDFM3C-2426J-10=P	4	2426.5	25.0	3.5	2.0	5.2	3.0	25, 23 (Fo -542, Fo+170)	WLL
TDFM1A-2450T-10=P	2	2450.0	50.0	2.0	2.0	5.2	3.0	20, 16 (Fo -280, +280)	RF LAN
TDFM1B-2450T-10=P	3	2450.0	50.0	2.3	2.0	5.1	2.5	24, 30 (Fo -190, +350)	RF LAN
TDFM1C-2450T-10=P	4	2450.0	50.0	3.0	2.0	5.15	—	26, 37 (Fo ±150, ±200)	RF LAN
TDFM1A-2484E-10=P	2	2484.0	13.0	2.0	2.0	5.1	3.0	25, 30 (Fo ±350, ±700)	RF LAN
TDFM1A-2484E-11=P	2	2484.0	13.0	3.0	2.0	5.2	3.0	35, 30 (Fo ±350, ±700)	RF LAN
TDFM2A-5250X-10=P	2	5250.0	100.0	1.5	2.0	3.2	—	20 (Fo -800)	RF LAN
TDFM2A-5775V-11=P	2	5775.0	75.0	1.5	2.0	2.9	—	7 (Fo -400)	5.8G LAN
TDFM2A-5775T-10-01=P	2	5775.0	50.0	3.3	2.7	2.9	—	28 (5225.0 ~ 5325.0)	5.8G LAN
TDFM2A-5800B-10=P	2	5800.0	5.0	3.0	2.0	2.9	1.3	20 (Fo ±400)	ETC

Note: As shown above, P or =P is added to each part number to indicate tape and reel packaging.

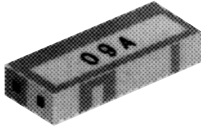
TYPICAL CHARACTERISTICS





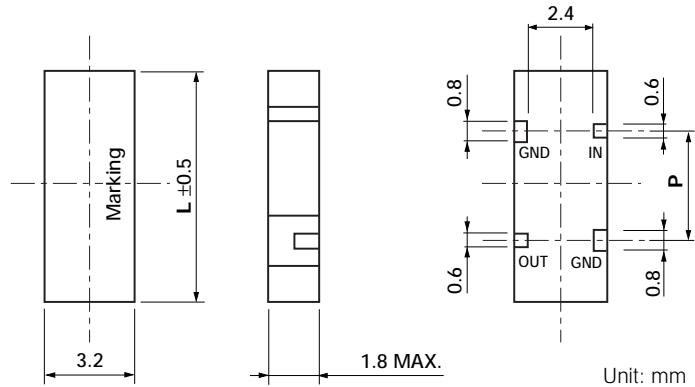
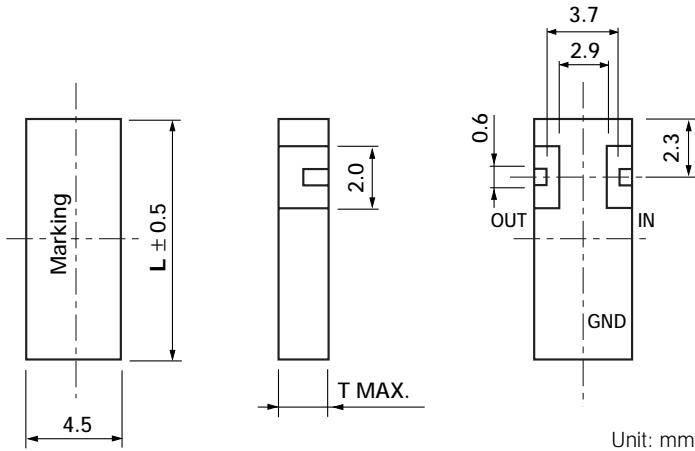
## TYPE TDFS (2, 3, 4 POLE SMD)

Frequency Range: 800-2500MHz



## Features

- Extreme low profile design: 1.8mm max
- Excellent out-of-band attenuation
- Packaged on tape/reel, reflow solderable
- Well suited for PCMCIA cards
- 50Ω input/output impedance

OUTLINE DIMENSIONS  
TDFS (2-Pole)OUTLINE DIMENSIONS  
TDFS (3-Pole)

## HEIGHT BY TYPE

Type	# Poles	Height: T Max. (mm)
TDFS8A	2	1.8
TDFS8B	3	1.8
TDFS1A	2	2.0
TDFS1B	3	2.0
TDFS1C	4	2.0

Note: Not necessarily to scale. Pin layout may vary per part number.  
Contact TOKO America for detailed specifications.

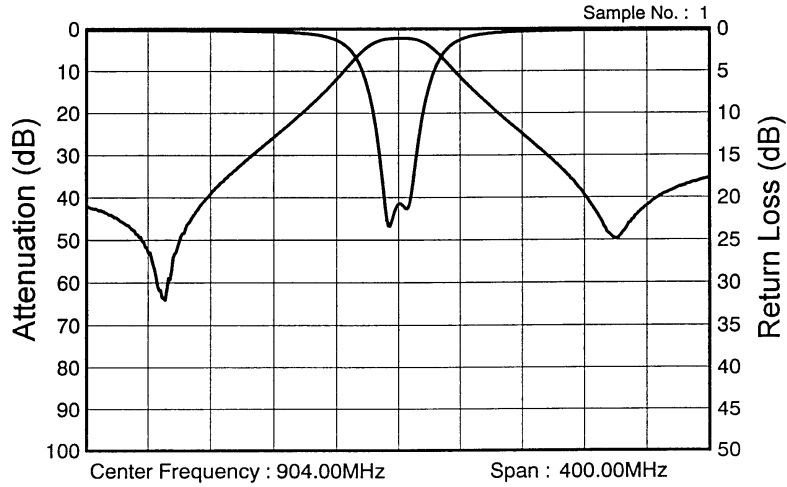
## STANDARD PART NUMBER LIST

## TYPE TDFS (2, 3, 4 Pole)

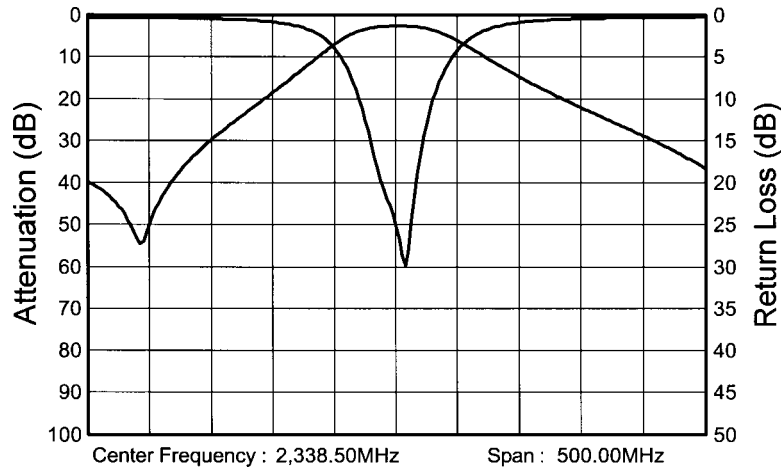
TOKO Part Number	Poles	Fo (MHz)	BW (Fo ± MHz Min)	I.L. (dB Max)	VSWR	Length (L mm)	Pin Pitch (P mm)	Selectivity (dB min @ MHz)	Application
TDFS8A-904A-11=P	2	904.0	1.0	3.0	2.0	8.5	3.5	40 (Fo ±140)	900 CT
TDFS1B-915E-10=P	3	915.0	13	4.5	2.0	8.3	—	32,25(Fo-77.5, Fo+77.5)	ISM-915
TDFS8A-915E-10=P	2	915.0	13	3.2	2.0	8.4	3.5	25,17(Fo-77.5, Fo+77.5)	ISM-915
TDFS8A-926A-11=P	2	926.0	1.0	3.0	2.0	8.3	3.5	40 (Fo ±140)	900 CT
TDFS8A-930A-10=P	2	930.5	1.5	3.5	2.0	7.8	—	35(Fo±90)	PAGER
TDFS8A-1575A-10=P	2	1575.4	1.0	1.0	2.0	5.3	—	5(Fo+275)	GPS
TDFS8B-2326C-10A-01=P	3	2326.0	7.0	4.5	2.0	3.4	—	24,19(Fo-100, Fo+100)	SDARS
TDFS1C-2326C-10A=P	4	2326.0	7.0	2.1	2.0	4.6	—	10,6(Fo-100, Fo+100)	SDARS
TDFS1C-2326C-11A=P	4	2326.0	7.0	3.5	2.0	4.6	—	30,20(Fo-100, Fo+100)	SDARS
TDFS8A-2338B-11=P	2	2338.5	6.25	4.0	2.0	3.5	1.8	30(Fo±200)	SDARS
TDFS8A-2338E-10=P	2	2338.5	12.5	3.6	2.0	3.3	1.8	37,25(Fo-200, Fo+200)	SDARS
TDFS1A-2450T-11=P	2	2450.0	50.0	2.0	2.0	5.2	3.0	19,15(Fo-280, Fo+280)	RF LAN
TDFS8A-2450T-13AP	2	2450.0	50.0	1.32	1.39	3.0	—	40 (Fo -500)	RF LAN

Note: As shown above, P or =P is added to each part number to indicate tape and reel packaging.

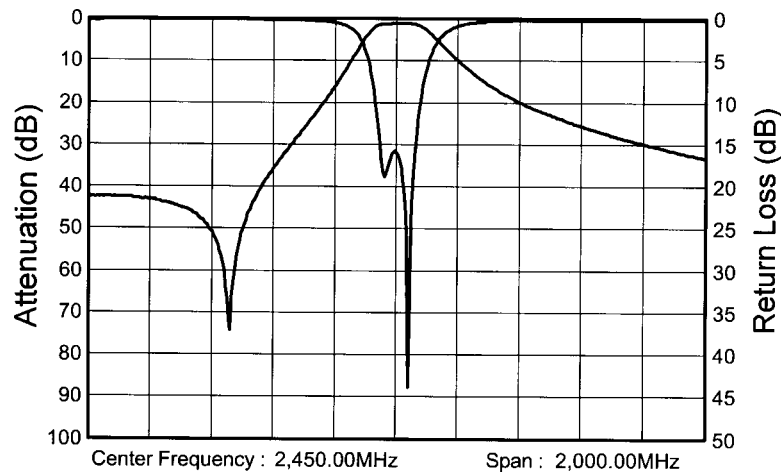
TYPICAL CHARACTERISTICS  
TDFS8A-904A-11



TYPICAL CHARACTERISTICS  
TDFS8A-2338E-10



TYPICAL CHARACTERISTICS  
TDFS8A-2450T-13A





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