

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.

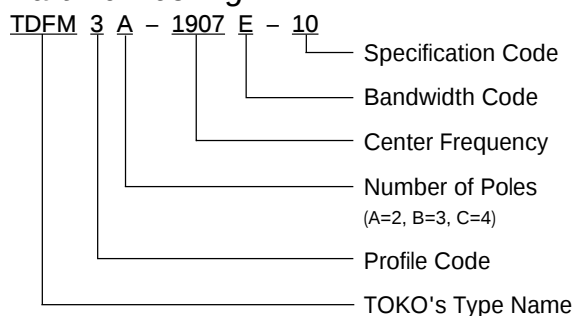
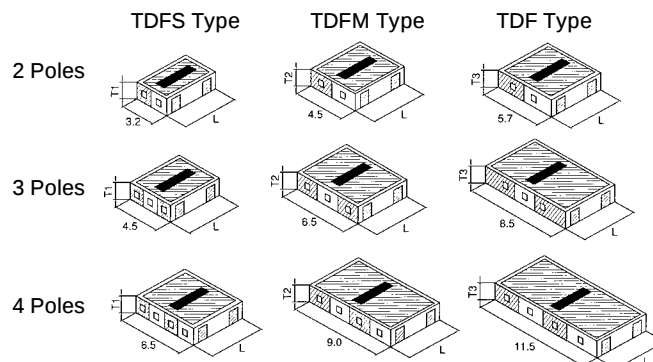
Standard parts are available for most common worldwide communication systems including: cellular, 900 MHz cordless, RF LANs, GPS, PCN, PHS, DECT and PCS.

TYPE TDF, TDFM, TDFS

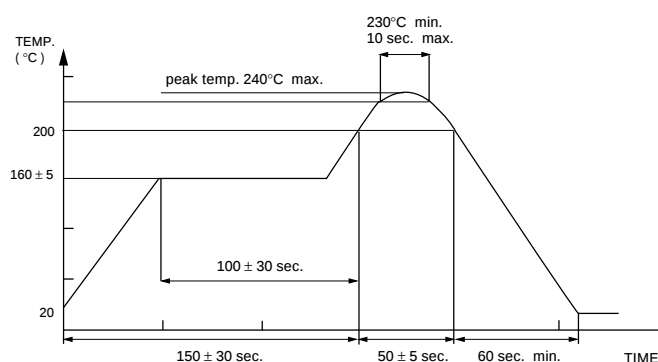
Frequency Range: 800-6000MHz

Features

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

Part Numbering**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

Recommended Soldering Profile

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

Precautions

- 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.
- 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.
- 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.
- 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
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
TDFM3A-1890D-17=P	2	1890.0	DECT	6
TDFM3A-1890D-18=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-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
TDFM3C-2332J-10=P	4	2332.5	WLL	6
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-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

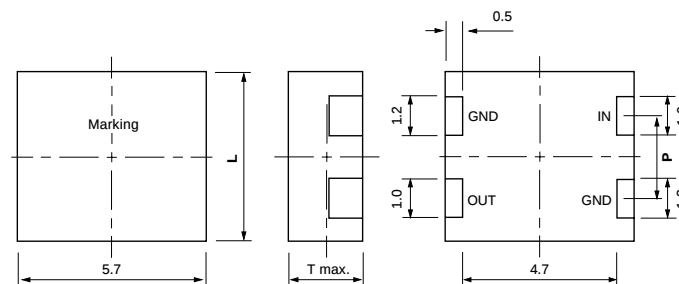


Features

- 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

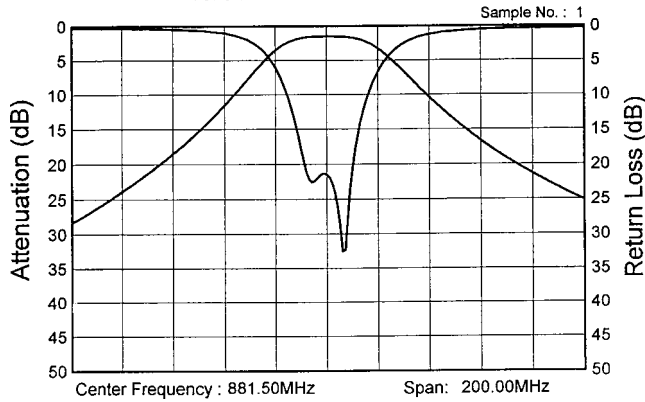
STANDARD PART NUMBER LIST

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

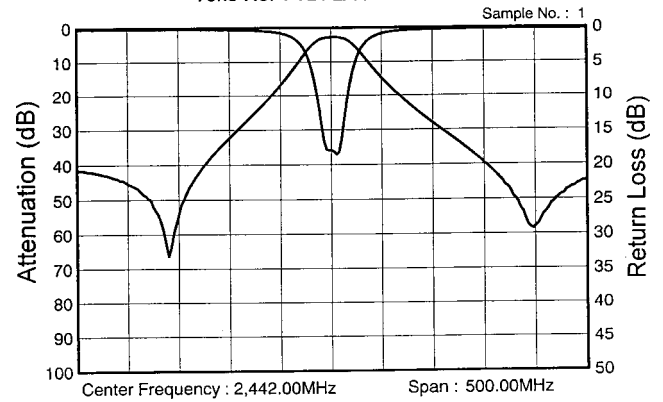
Note: =P is added to each part number to indicate tape and reel packaging.

TYPICAL CHARACTERISTICS

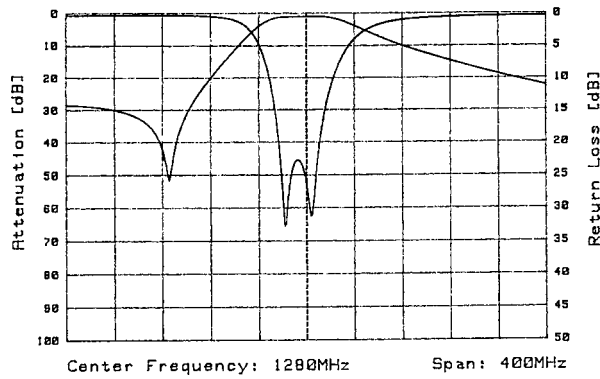
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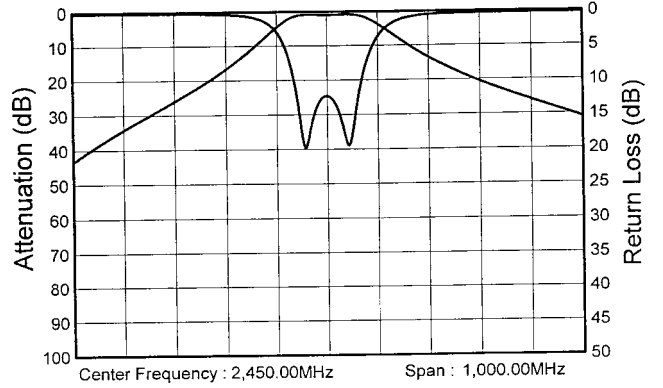
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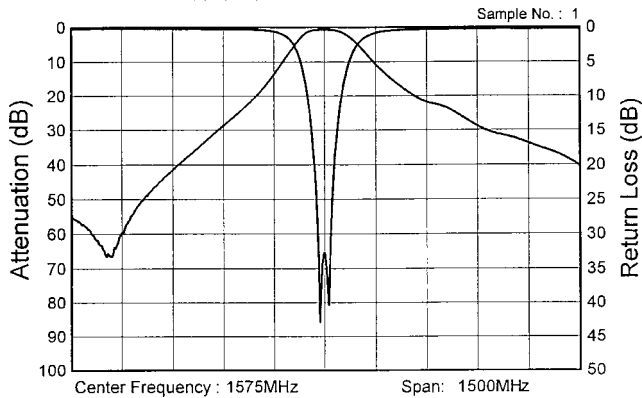
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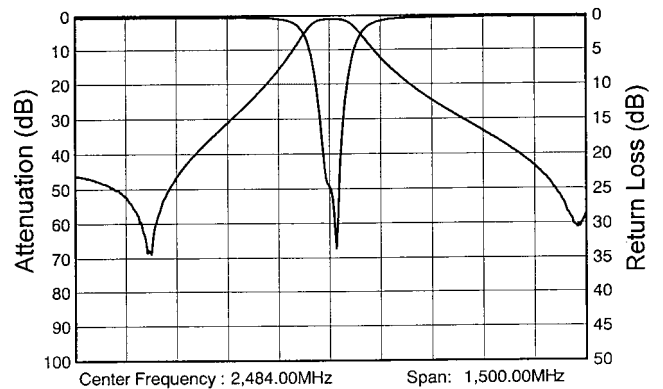
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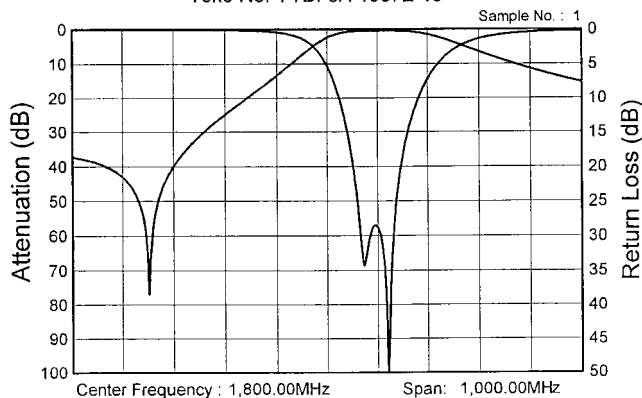
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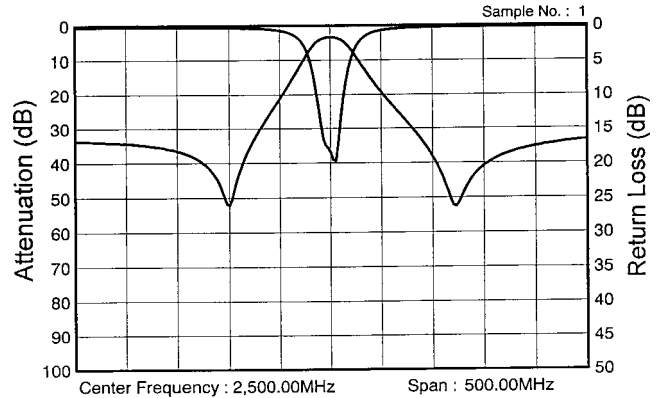
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Toko No. : TDF3A-1907E-19



Toko No. : TDF2A-2500A-12



TYPE TDFM (2, 3, 4 POLE SMD)

Frequency Range: 800-6000MHz



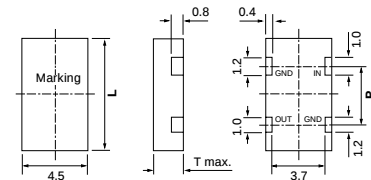
Features

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

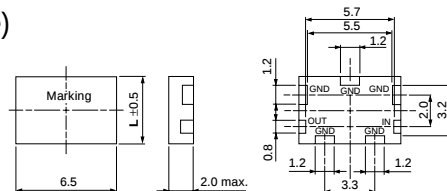
HEIGHT BY TYPE

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

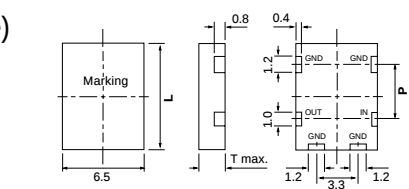
TDFM (2-Pole)



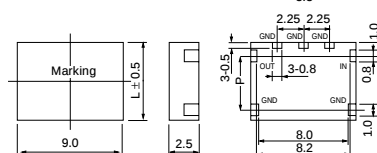
TDFM1B (3-Pole)



TDFM2B (3-Pole)



TDFM (4-Pole)



Unit: mm

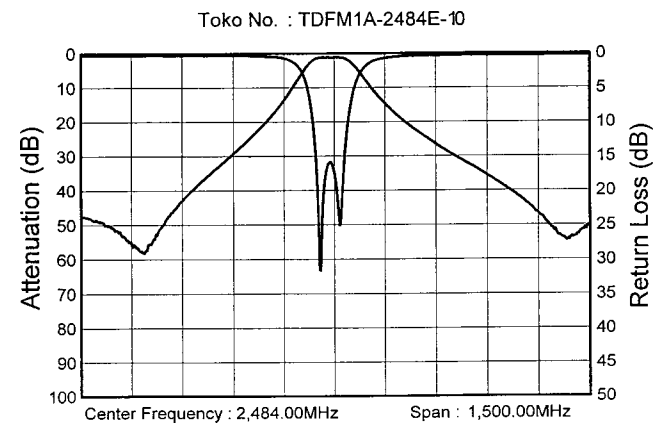
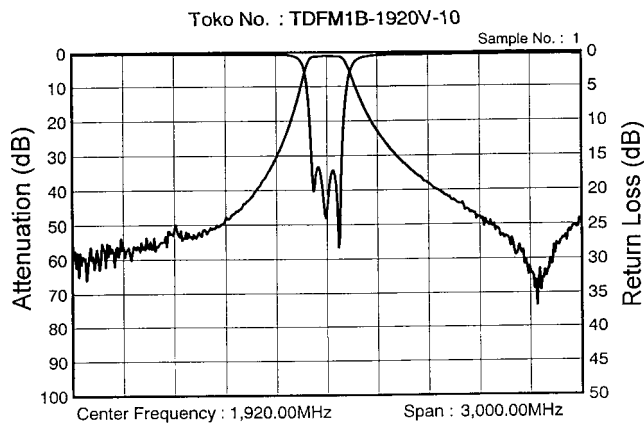
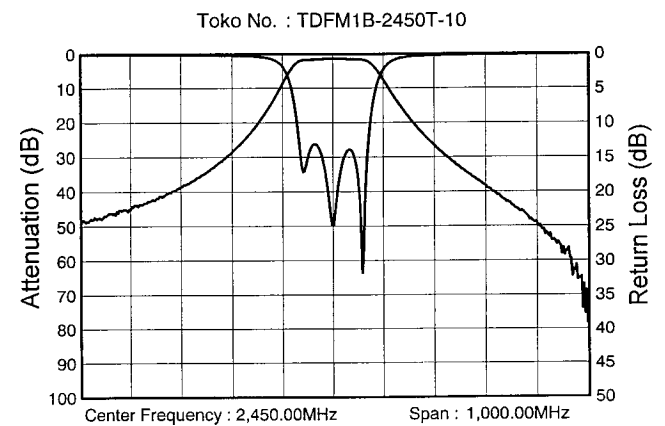
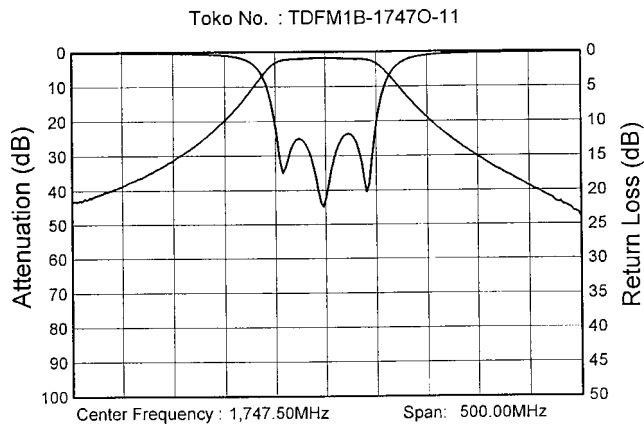
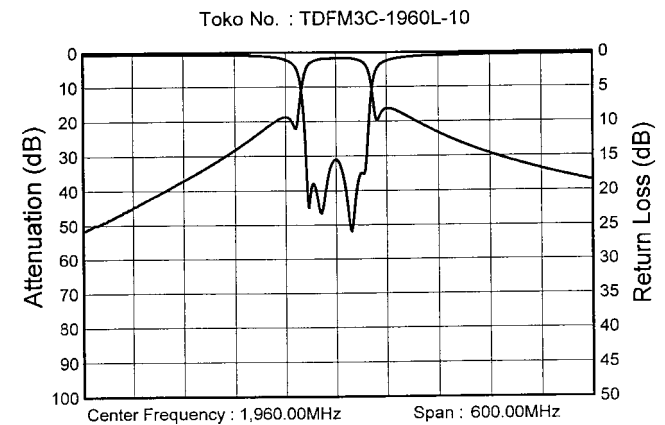
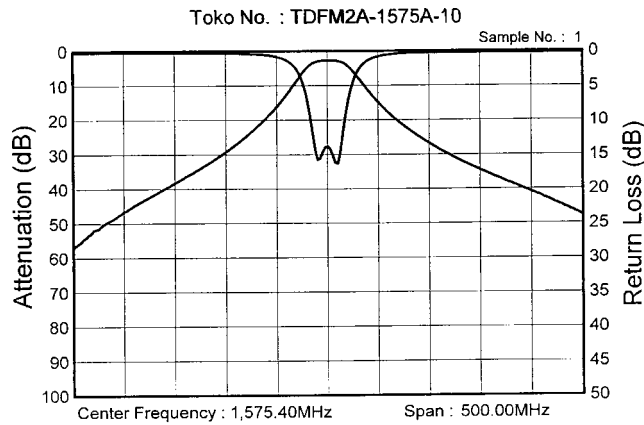
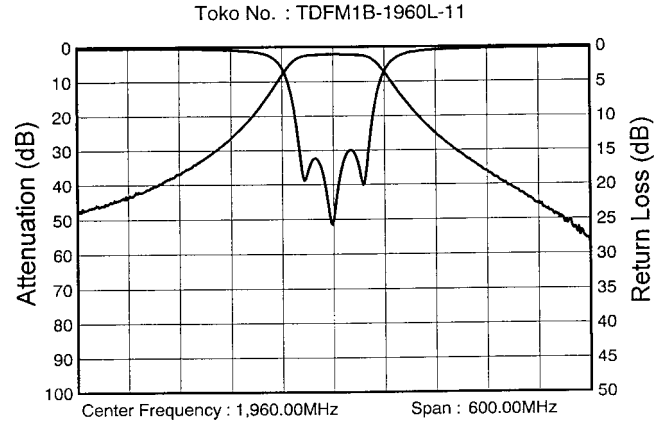
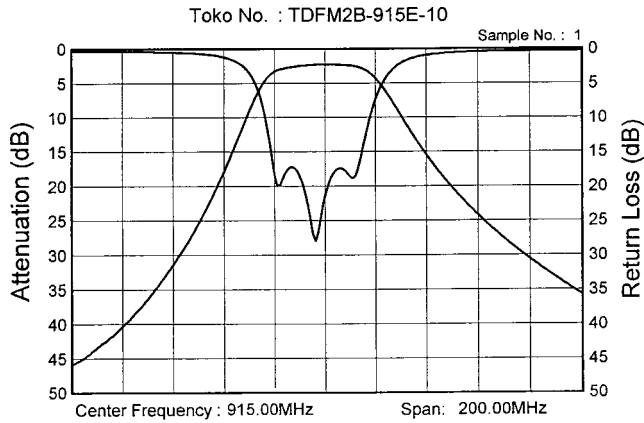
Note: Not necessarily to scale. Pin layout may vary per part number.
Contact Toko America for detailed specifications.

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	6.80	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-1890D-17=P	2	1890.0	10.0	2.5	2.0	6.1	4.0	37, 7.5 (Fo -216, -48)	DECT	
TDFM3A-1890D-18=P	2	1890.0	10.0	3.0	2.0	6.3	4.0	24, 20 (Fo -104, +113)	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-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	
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-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 POLE SMD)

Frequency Range: 800-2500MHz

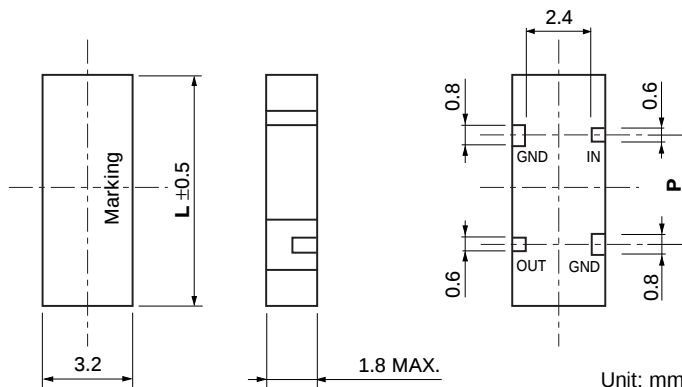


Features

- 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

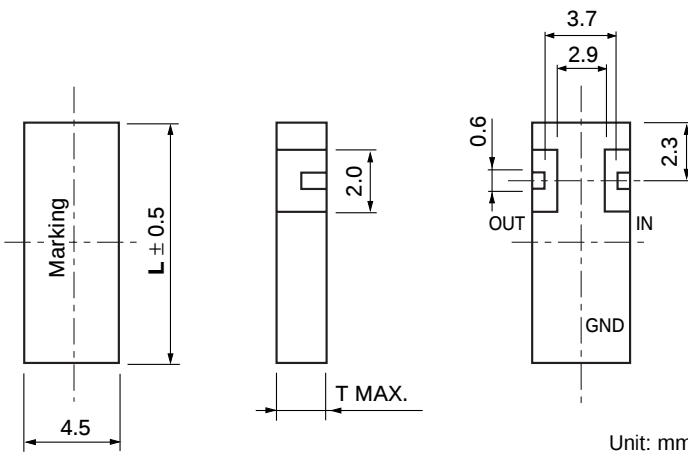
OUTLINE DIMENSIONS

TDFS (2-Pole)



OUTLINE DIMENSIONS

TDFS (3-Pole)



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)
TDFS8A	2	1.8
TDFS1A	2	2.0
TDFS1B	3	2.0

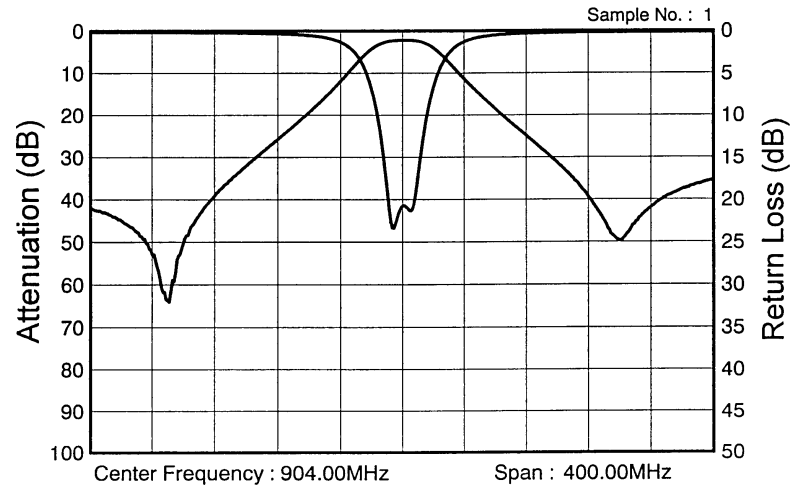
STANDARD PART NUMBER LIST

TYPE TDFS (2, 3 Pole)

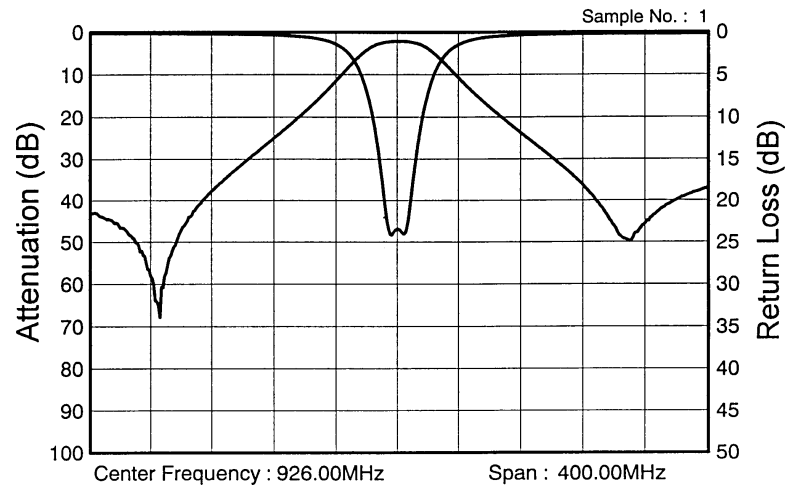
TOKO Part Number	Poles	Fo (MHz)	BW (fo ± MHz Min)	I.L. (dB Max)	VSWR	Length (L mm)	Pin Pitch (P mm)	Selectivity (dB min @ MHz)	Application
TDFS8A-904A-11=P	2	904.0	1.0	3.0	2.0	8.5	3.5	40 (Fo ±140)	900 CT
TDFS1B-915E-10=P	3	915.0	13	4.5	2.0	8.3	—	32,25(Fo-77.5, Fo+77.5)	ISM-915
TDFS8A-915E-10=P	2	915.0	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
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.

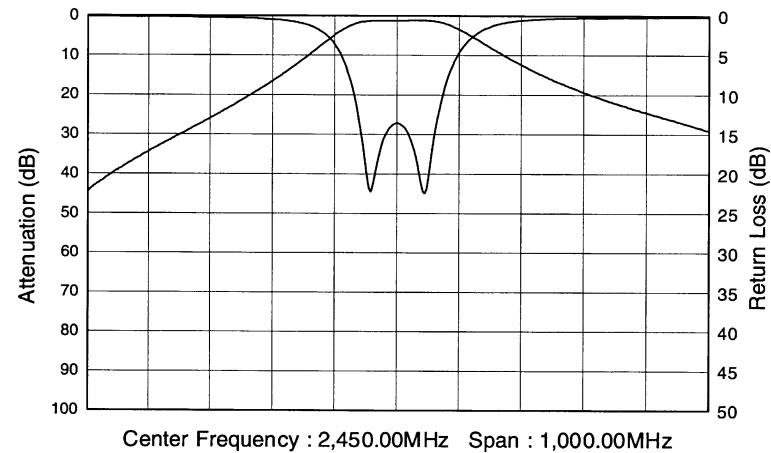
TYPICAL CHARACTERISTICS
TDFS8A-904A-11



TYPICAL CHARACTERISTICS
TDFS8A-926A-11



TYPICAL CHARACTERISTICS
TDFS1A-2450T-11



Notes

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