

# FTF4824

## Monolithic Crystal Filter

Part number: 4824 | Revision: W1 | Date: 25 January 2023



### 1.0 Main parameters

N°	Characteristics	Symbol	Value	Unit	Note
1.1	Nominal Centre Frequency	$F_n$	21400	kHz	
1.2	Centre frequency	$f_c$	21400±7.5	kHz	
1.3	Number of poles		6		fundamental mode

### 2.0 Insection loss

N°	Characteristics	Symbol	Min.	Nom.	Max.	Unit	Note
2.1	Insertion Loss (IL)	IL			8	dB	Measured on smallest attenuation in pass band

### 3.0 Passband

N°	Characteristics	Symbol	Nom.	Unit	- $\Delta F_{min}$	+ $\Delta F_{max}$	Unit	Note
3.1	Bandwidth between 3dB frequencies		3	dB	-100	+100	kHz	

### 4.0 Ripple over

N°	Characteristics	Symbol	Nom.	Unit	- $\Delta F_{min}$	+ $\Delta F_{max}$	Unit	Note
4.1	Ripple over		≤1.5	dB	-80	+80	kHz	Referred to $f_c$

### 5.0 Stopband

N°	Characteristics	Symbol	Nom.	Unit	- $\Delta F_{min}$	+ $\Delta F_{max}$	Unit	Note
5.1	StopBand 1		≥60	dB	-400	+400	kHz	Referred to $f_c$ /except spurious
5.2	StopBand 2		≥90	dB	-2.5	+5.0	MHz	Referred to $f_c$ /except spurious
5.3	Alternate attenuation		≥80	dB				Except spurious

### 6.0 Spurious

N°	Characteristics	Symbol	Nom.	Unit	- $\Delta F_{min}$	+ $\Delta F_{max}$	Unit	Note
6.1	Spurious 1		≥45	dB	-400	+5000	kHz	

### 7.0 Matching

N°	Characteristics	Symbol	Resistance	Unit	Capacitance	Unit	Note
7.1	Input and output		50	$\Omega$	0	pF	

### 8.0 Intermodulation

N°	Characteristics	Symbol	Inband	Outband	Unit	Note
8.1	Frequency 1			$F_c \pm 200$	kHz	
8.2	Frequency 2			$F_c \pm 400$	kHz	
8.3	Input power level			0	dBm	
8.4	IP3			>60	dB	Down from both 0 dBm tones

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### 9.0 Temperature range

N°	Characteristics	Symbol	Min.	Nom.	Max.	Unit	Note
9.1	Operating	OTR	-30		70	°C	
9.2	Storage	STR	-40		85	°C	

### 10.0 Package and marking

N°	Characteristics	Specifications	Model outline drawing
10.1	Package type	KF17 (38.4 x 18.2 mm)	
10.2	Package height	13 mm max	
10.3	Pin length	3.5 mm max	
10.4	Marking	Line 1: RAKON YYWW Line 2: FTF4824/21.4MHz	

Unit: mm

### 11.0 Test circuit

N°	Test circuit diagram
11.1	

### 12.0 Specification History

Revision	Change notes	Date
W0	Preliminary Datasheet creation	Sep, 18 <sup>th</sup> 2012
W1	Re-branding Rakon to RakonXpress	Jan, 25 <sup>th</sup> 2023