



SAW FILTERS and COMPONENTS for SENSORS

Surface acoustic wave (SAW) filters are manufactured by ITME for TV receivers (tables 1 and 2).

We offer also: - SAW filters for cable TV modulators (table 3),
- professional SAW filters (table 4),
- SAW notch filters (table 5),
- SAW, pseudo SAW (PSAW) and surface transverse wave (STW) components for sensors: delay line (table 6), resonators (table 7).

ITME offers high quality SAW filters and components for sensors in the frequency range 20÷500 MHz designed according to customers requirements.

SAW FILTER CHARACTERISTICS :

- center frequency * - 20 ÷ 500 MHz,
- fractional bandwidth - 1 ÷ 50 %,
- insertion loss - ≥ 2 dB,
- relative out-of-band rejection - as much as 60 dB,
- minimum shape factor - 1.05,
- minimum bandpass ripple - ± 0.1 dB,
- phase response * * - linear / nonlinear.

NOTES :

* Design of multiple passband filters with various passband shapes is possible.

** Filters can be designed according to phase or group delay specification.

WE OFFER THE FOLLOWING SERVICES CONCERNING SAW SENSORS :

design and manufacturing of SAW delay lines and resonators on quartz and lithium niobate and lithium tantalate substrates of any cut,
preparation copper phthalocyanine layers as the chemical interface for sensors.

OUR CUSTOMERS ARE ASKED TO SPECIFY:

- desired frequency response,
- max. insertion loss,
- source and load impedance,
- package type,
- temperature range of operation,
- max. permitted temperature coefficient of the frequency response,
- expected quantity.

Table 1. SAW filters for TV receivers with differential sound carrier system.

Filter type	Picture carrier [MHz]	Insertion loss [dB]	Sound carrier [MHz]	TV Standard *)	Replecement to (Siemens - Matsushita)
FT-383	38.0	20	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-1950
FT-389	38.9	20	32.4 / 33.4	D/K-OIRT, B/G-CCIR	OFWK-2950
FT-3893	38.9	19	33.4	B/G-CCIR	OFWG-1968
FT-3895	38.9	18,5	32.4 / 33.4	D/K-OIRT, B/G-CCIR	OFWK-2960
FT-3896	38.9	18,5	32.4 / 33.4	D/K-OIRT, B/G-CCIR	OFWK-2960
FT-3897	38.9	17	32.4 / 33.4	B/G-CCIR	OFWG-1963
FT-3899	38.9	17	33.4	B/G-CCIR	OFWG-1984
FT-3951	39.5	18	33.5	I-CCIR	OFWJ-1951
FT-3955	39.5	16	33.5	I-CCIR	OFWJ-1951

Table 2. SAW filters for TV receivers with quasiparallel sound carrier system.

Filter type	Picture carrier [MHz]	Insertion loss [dB]	Sound carrier [MHz]	TV Standard *)	Replecement to (Siemens - Matsushita)
FTQW-384	38.0	20	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-3955
FTQW-3801	38.0	20	31.5	D/K-OIRT, B/G-CCIR	-
FTQW-3805	38.0	17	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-3955
FTQW-3806	38.0	17	31.5 / 32.5	D/K-OIRT, B/G-CCIR	-
FTQW-3891	38.9	20	32.4 / 33.4	D/K-OIRT, B/G-CCIR	OFWG-3956
FTQW-3893	38.9	17	33.4	B/G-CCIR	OFWG-3962
FTQF-384	38.0	26	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-9201
FTQF-3801	-	15,5	31.5 / 32.5	D/K-OIRT, B/G-CCIR	-
FTQF-3804	-	15,5	31.5 / 32.5	D/K-OIRT, B/G-CCIR	-
FTQF-3806	38.0	22	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-9201
FTQF-3891	-	15,5	32.4 / 33.4	D/K-OIRT, B/G-CCIR	OFWK-9350
FTQF-3894	-	21	32.4 / 33.4	B/G-CCIR, D/K-OIRT	OFWK-3258
FTQF-3895	38.9	26	32.4 / 33.4	D/K-OIRT, B/G-CCIR	OFWK-9260
FTQF-3897	38.9	22	32.9 / 33.05 / 33.4	B/G-CCIR, NICAM	OFWG-9251
FTQF-3899	38.9	22	32.35 / 32.9 / 33.4	D/K-OIRT, B/G-CCIR, I	OFWK-9260
FTQW-384, FTQF-384	38.0	-	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-3254
FTQW-3801, FTQF-384	38.0	-	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-3264
FTQW-3801, FTQF-3801	38.0	-	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-3351
FTQW-3806, FTQF-3804	38.0	-	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-3351
FTQW-3806, FTQF-3806	38.0	-	31.5 / 32.5	D/K-OIRT, B/G-CCIR	OFWK-3264
FTQW-3891, FTQF-3891	38.9	-	32.4 / 33.4	D/K-OIRT, B/G-CCIR	OFWK-3350
FTQW-3891, FTQF-3895	38.9	-	32.4 / 33.4	D/K-OIRT, B/G-CCIR	OFWK-3258

Table 3. SAW filters for cable TV modulators.

Type	Center frequency [MHz]	Insertion loss [dB]	1 dB bandwidth [MHz]	3 dB bandwidth [MHz]	Standard*)	Package
FP-3507	35,0	26	6,5	-	D/K	TS-58
FP-3606	35,4	26	6,0	-	D/K	TS-58
FTP-3801	35,0	33,5	33,5	-	D/K	PCZ-24
FP-3607	36,0	34	7,5	-	L	PCZ-14
FP-3608		32	8,0	-	I	TS-59
FP-4001	40,0	13	0,8	-	B/G	TS-59
FP-4002	39,8	20	-	0,45		TS-58

*) B/G: CCIR, Germany, Europe
 D/K: OIRT, eastern standard
 L: France
 I: Great Britain

Table 4. Professional SAW filters.

Type	Center frequency [MHz]	Insertion loss [dB]	1 dB bandwidth [MHz]	3 dB bandwidth [MHz]	Package
FP-3557	35,7	22	7,5	-	TS-59M
FT-3892	36,5	21	6,5	-	TS-59M
FP-4301	43,2	21	-	min. 1,8	TS-59M
FP-6008	60,0	18	-	min. 8,0	DIL-14
FP-7005	70,0	26	5	-	PCZ-14
FP-7010A1		20	10	-	PCZ-14
FP-7010A2		20	10	-	PCZ-14
FP-7010A3		20	12	-	DIL -14
FP-7014		26	14	-	PCZ-14
FP-7030C		30	-	30	PCZ-14
FP-7030E		33	-	30	PCZ-14
FA-1647	164,465	1,5	-	0,14	DIL-14

Table 5. Notch filters

Frequency f_p [MHz]	Attenuation at frequency f_p [dB]	Bandwidth [kHz]	Metal package [mm]
100÷500	≥ 40dB	≥ 35	60x27x19

Table 6. SAW, PSAW and STW delay lines

Type	DL165	DL267	DL313	DL506	DL701	DL702	DL741	DL742	DL801	DL802
Center frequency [MHz]	~165	~267	~313	~506	~70	~70	~74,5	~74,5	~80	~80

Table 7. SAW and PSAW resonators

Type	RS164	RS303	RS357	RS423	RS434	RS512	RS701	RS702
Center frequency [MHz]	~164	~303	~357	~423	~434	~512,5	~70,3	~70,3

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