



# TMX W406

SAW Bandpass Filter – US DVB-C  
*Preliminary Specification (Rev-3)*

▣ Technical overview .....	P01
▣ Typical Response .....	P02
▣ Package Drawing .....	P03

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June 06<sup>th</sup>, 2005

Reference Temperature +25°C

Electrical Parameters	Unit	Minimum	Typical	Maximum
<b>Source Impedance</b> (single ended)	$\Omega$	-	50	-
<b>Load Impedance</b> (balanced drive)	$\Omega / \text{pF}$	-	2000 / 3	-
<b>Center Frequency <math>f_0</math></b> (center between 3dB points)	MHz	43.96	44.06	44.16
<b>Relative Attenuation <math>\alpha_{\text{rel}}</math></b>				
41.53 MHz	dB	-	0.4	-
46.59 MHz	dB	-	0.4	-
41.06 MHz	dB	1.8	3.0	-
47.06 MHz	dB	1.5	2.7	3.9
47.31 MHz	dB	-	6.3	-
39.81 MHz	dB	37.0	52.0	-
<b>Lower sidelobe</b>				
35.06 ... 39.46 MHz	dB	40.0	47.0	-
39.46 ... 40.06 MHz	dB	36.0	41.0	-
<b>Upper sidelobe</b>				
48.06 ... 50.06 MHz	dB	35.0	40.0	-
50.06 ... 55.06 MHz	dB	38.0	45.0	-
<b>Insertion attenuation <math>I_L</math></b> Reference level for the following data 44.06 MHz	dB	13.2	14.7	16.2
<b>Amplitude Ripple <math>\Delta\alpha</math></b> 41.53 ... 46.59 MHz	dB	-	0.4	0.8
<b>Pass bandwidth</b>				
$\alpha_{\text{rel}} \leq 3\text{dB}$ $BW_{3\text{dB}}$	MHz	-	6.1	-
$\alpha_{\text{rel}} \leq 30\text{dB}$ $BW_{30\text{dB}}$	MHz	-	7.7	-
<b>Reflected wave signal suppression</b> 1.2 $\mu\text{s}$ ...6.0 $\mu\text{s}$ after main pulse (test pulse carrier 250ns, carrier frequency 44.06MHz)				
	dB	42	52	-
<b>Feed through signal suppression</b> 1.2 $\mu\text{s}$ ...1.1 $\mu\text{s}$ before main pulse (test pulse carrier 250ns, carrier frequency 44.06MHz)				
	dB	50	56	-
<b>Group delay ripple (p-p) <math>\Delta\tau</math></b> 41.53 ... 46.59 MHz				
	ns	-	40	80
<b>Temperature coefficient of frequency <math>TC_f</math></b>				
	ppm/K	-	-72	-
<b>Impedance at 44.06 MHz</b>				
Input	k $\Omega$ // pF	-	1.3 // 16.1	-
Output	k $\Omega$ // pF	-	1.1 // 5.6	-
<b>Package type</b>			SIP5D	

### Maximum Ratings

Rating	Unit	Value
Operable Temperature Range	$T_A$	-10 to +60 °C
Storage Temperature Range	$T_{\text{stg}}$	-40 to +70 °C
DC Voltage (between any terminals)	$V_{\text{DC}}$	12 V
AC Voltage (between any terminals)	$V_{\text{PP}}$	10 V

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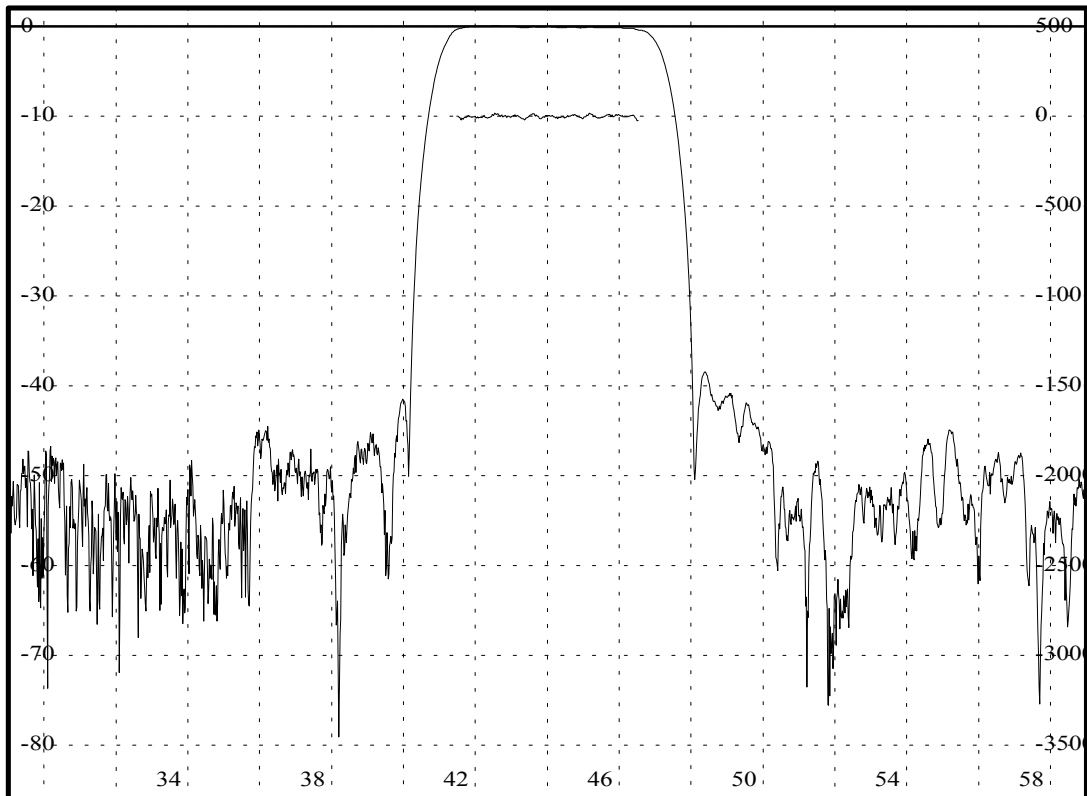
## TYPICAL S21 RESPONSE

### References

CENTER FREQUENCY = 44 MHz  
 LOSS REFERENCE = 15.18 dB  
 DELAY REFERENCE = 1.21  $\mu$ s  
 PHASE REFERENCE = -113.2 deg

### Scales

SCALE\_FREQUENCY = 2 MHz/div  
 SCALE\_AMPLITUDE = 10 dB/div  
 SCALE\_TPG = 500 ns/div

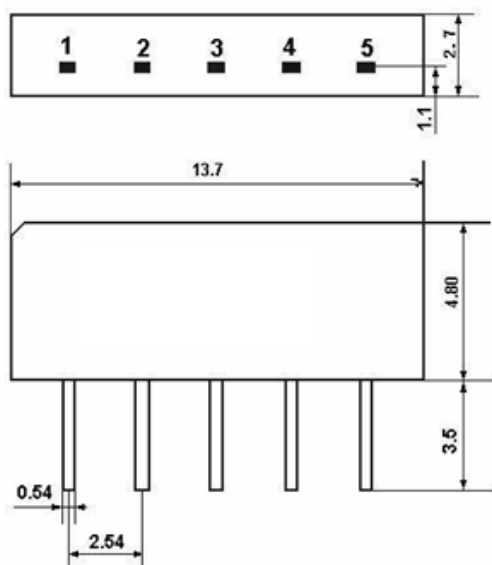


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## PACKAGE DRAWING



- 1 Input
- 2 Input ground
- 3 Chip carrier - ground
- 4 Output
- 5 Output