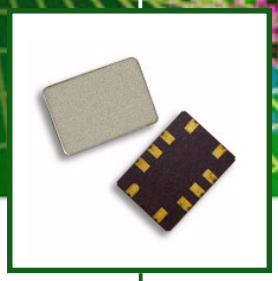

TMX W520

SAW Bandpass Filter – WiMax – IF

Preliminary Specification (Rev 3)

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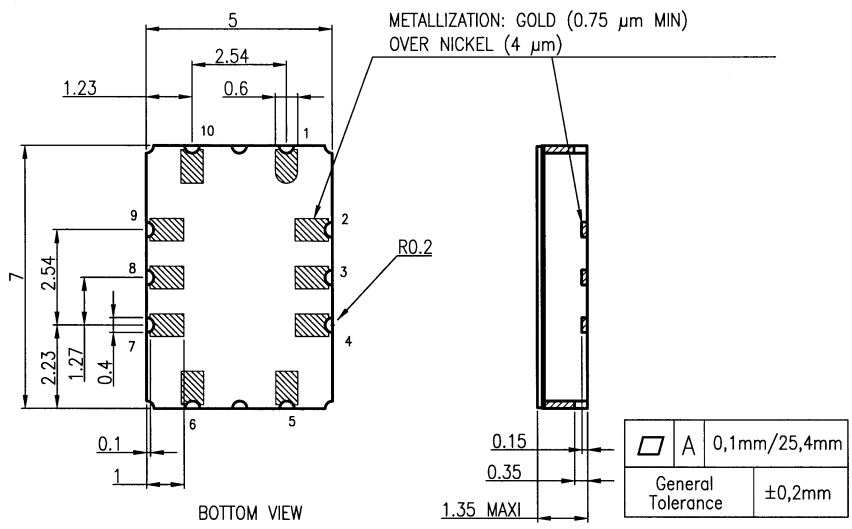
Features

- **IF Filter for Wi-Max BTS**
- **Low-Loss Filter**
- **High Rejection**
- **3.7 MHz useable Passband**
- **Ceramic Package for Surface Mounted Technology**

Package Drawing & Pinout

The product is in conformance with the European RoHs Regulation 2002/95 using exemption #7 concerning solder alloy with more than 85% of lead. The lead is contained in solder alloy used for lid sealing.



Pin Configuration	
Input	1
Input Return	10
Output	6
Output Return	5
Case ground	2, 4, 7, 9
To Be Grounded	2, 3, 4, 6, 7, 8, 9, 10

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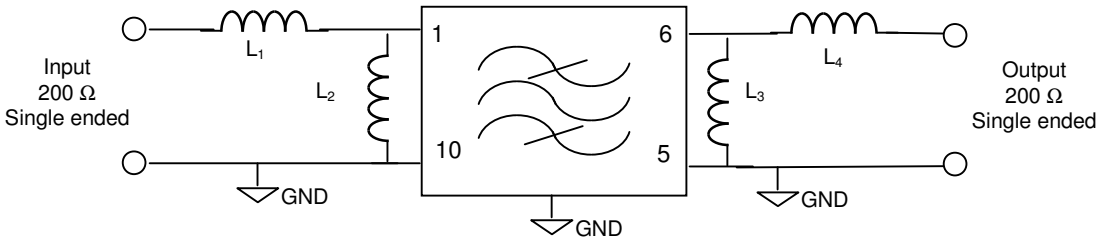
Technical Characteristics

Operating Temperature range : [-40°C ; +85°C]

Electrical Parameters	Unit	Minimum	Typical (1)	Maximum
Source Impedance (single ended)	Ω	-	200 (2)	-
Load Impedance (single ended)	Ω	-	200 (2)	-
Center Frequency fo	MHz	-	456	-
Bandwidth at –3 dB (3)	MHz	3.7	4.3	-
Template on the amplitude, amplitude reference is minimum insertion loss				
From 1 MHz to 256 MHz	dB	30	65	-
From 256 MHz to 360 MHz	dB	40	60	-
From 360 MHz to 416 MHz	dB	50	57	-
From 416 MHz to 452.65 MHz	dB	40	45	-
From 459.35 MHz to 656 MHz	dB	40	45	-
From 656 MHz to 946 MHz	dB	30	45	-
Minimum Insertion Loss over 3.7 MHz Bw(2)	dB	-	9.5	10.5
Amplitude Variation in fo ± 1.7 MHz (4) in fo ± 1.85 MHz (4)	dB_{p-p}	-	 0.8 1.3	 1.2 3.0
Group Delay Variation in fo ± 1.7 MHz	ns_{p-p}	-	140	300
Absolute Group Delay at fo	µs	-	0.58	3.0
Input Return Loss in fo ± 1.7 MHz	dB	6.0	11	-
Output Return Loss in fo ± 1.7 MHz	dB	6.0	14	-
Impulse Response Attenuation (5) 1 - 2 µs 2 - 3 µs > 3 µs	 dB dB dB	 20 30 45	 35 40 55	 - - -

Notes :
(1) Typical values are nominal performances at room temperature.
(2) With external matching networks.
(3) The amplitude reference is minimum insertion loss over 3.7 MHz bandwidth.
(4) The amplitude variation is defined as the maximum level – minimum level over the given bandwidth.
(5) Time reference is the main time response lobe

MATCHING NETWORK FOR 200 Ω SINGLE ENDED CONFIGURATION



Temex Test Fixture	
L_1 = 120 nH ,Q>35	L_3 = 36 nH ,Q>60
L_2 = 36 nH ; Q > 60	L_4 = 110 nH; Q > 35

The configuration is given for indication only . The components values may be different on the customer PC board.

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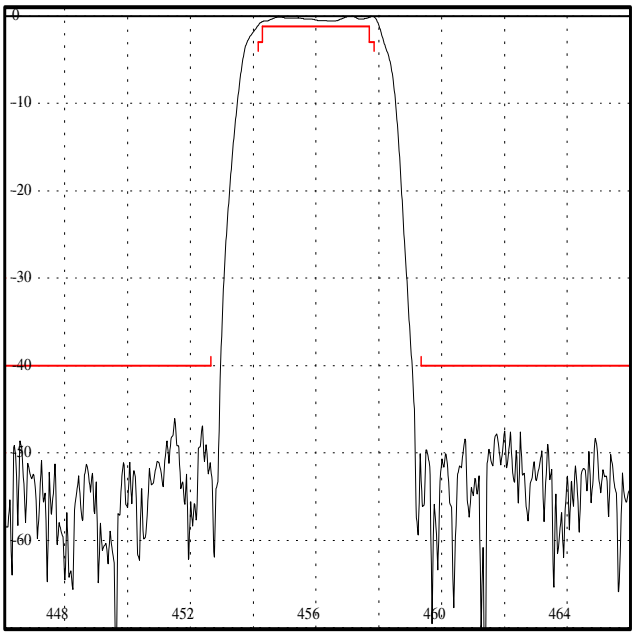
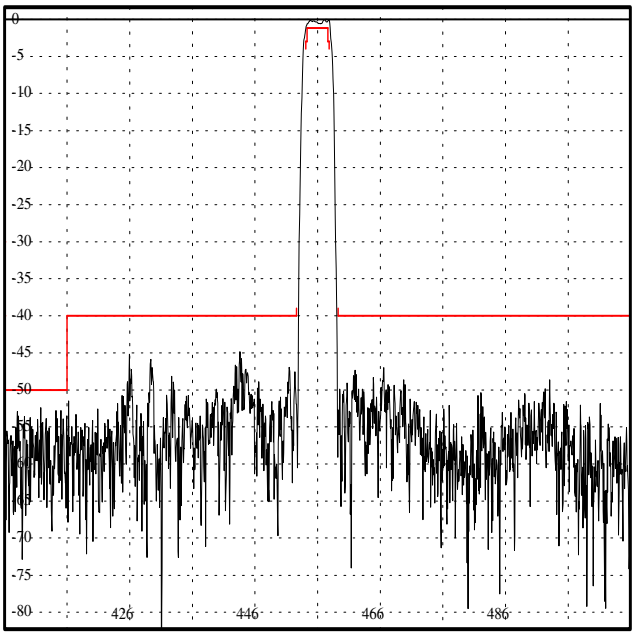
Nominal Frequency Response

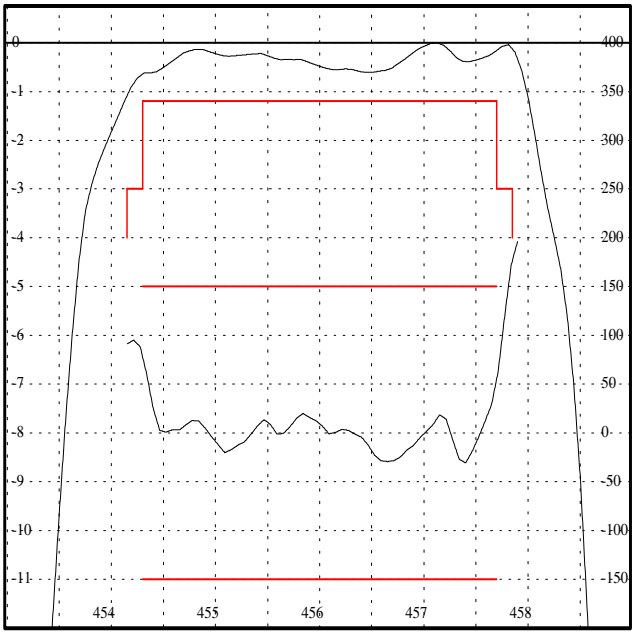
Frequency Response
(2 MHz/div – 10 dB/div)



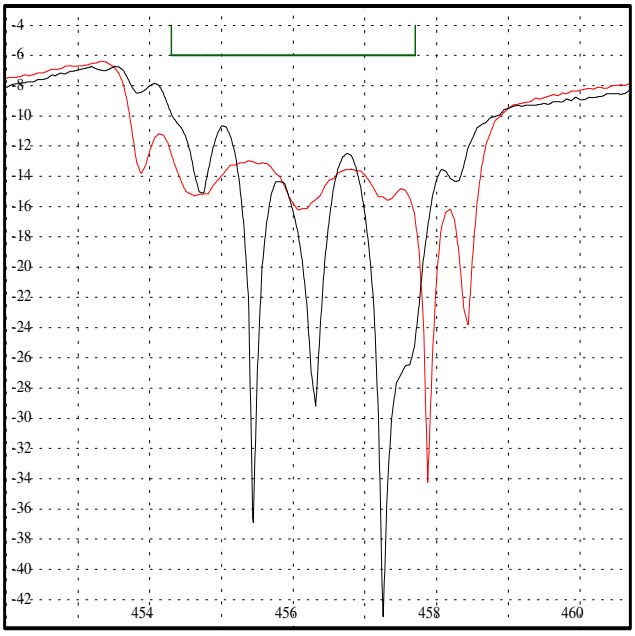
Wide Band Response
(10 MHz/div – 5 dB/div)



Passband Response & Group Delay Variation
(0.5 MHz/div - 1 dB/div – 50 ns/div)



S_{11} & S_{22} Return Loss
(1 MHz/div - 2 dB/div)



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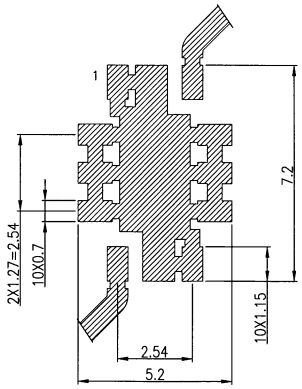
Maximum Ratings

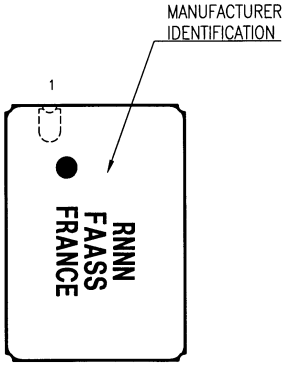
Operating Temperature Range	℃	[-40℃ ; +85℃]
Storage Temperature Range	℃	[-50℃ ; +125℃]
DC voltage	V	0
Input Power	dBm	10 max
ESD Class (Human Body Model) **Voltage supported (Human Body Model)** **ESD Class (Charged Device Model)** **Voltage supported (Charge Device Model)**	- V - V	1A 250 max C5 1000 max

Recommended Footprint

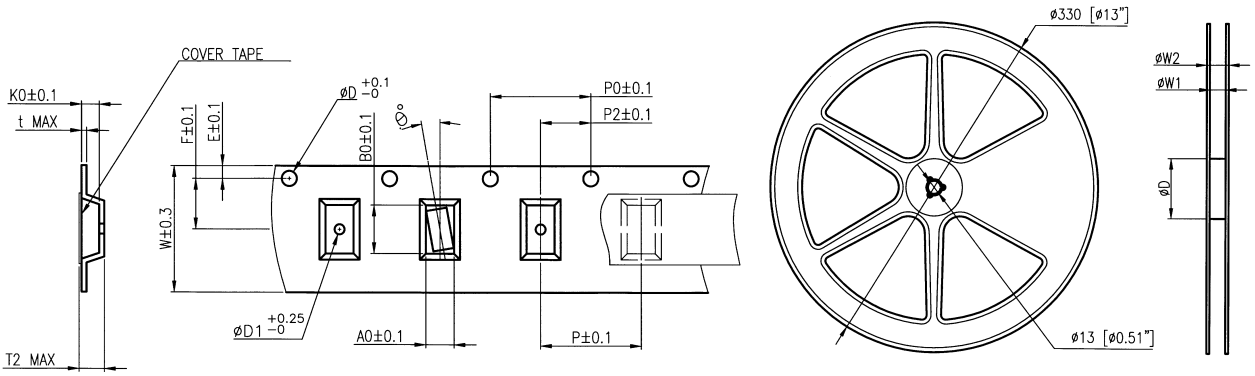


PCB VIEW FROM THE TOP
ALL DIMENSIONS IN mm

Marking



Tape and Reel



	W	P	E	F	D	D1	P0	P2	A0	B0	K0	t_{max}	T2	θ	W1	W2	ØD
mm	16	8.00	1.75	7.50	1.50	1.50	4.00	2.00	5.5	7.50	1.90	0.343	3.282	7°4	16.5	24	100
inch	*0.63*	*0.315*	*0.069*	*0.295*	*0.059*	*0.059*	*0.157*	*0.079*	*0.216*	*0.295*	*0.075*	*0.0135*	*0.129*	*7°4*	*0.65*	*0.945*	*3.94*

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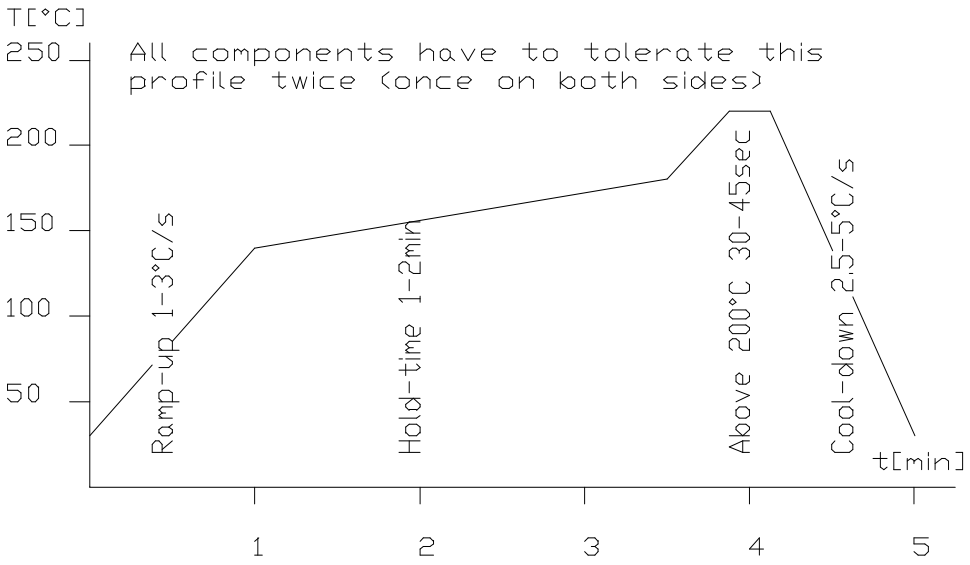
Recommended Reflow Profiles

Lead Process (Sn/Pb)

Typical reflow temperature for this profile is 240 °C of profile :

Example of profile :

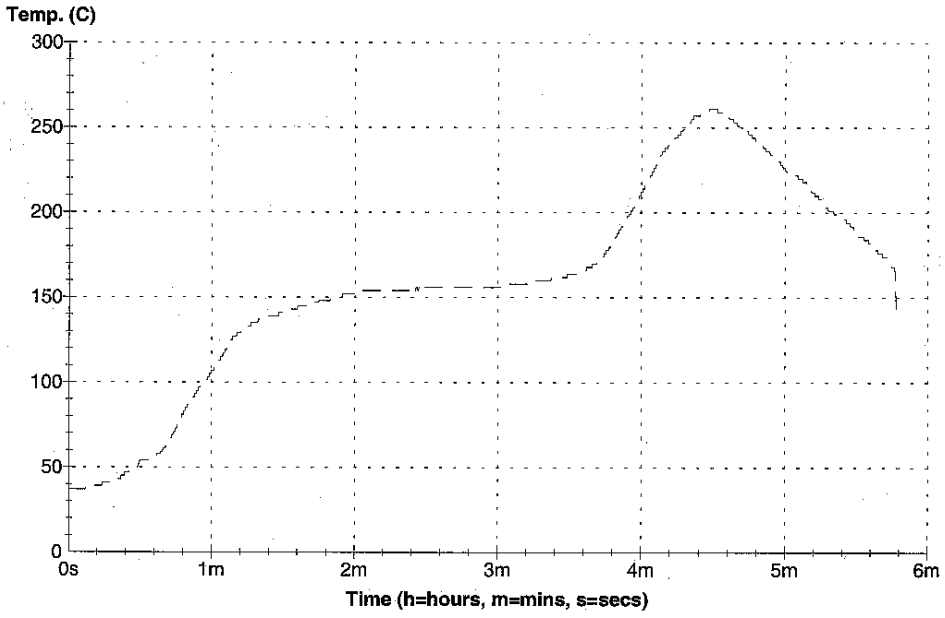


Note : Reflow profile to use depends on solder characteristics. Each soldering material supplier has its own recommendation. This profile is use for the product qualification step.

Lead Free Process :

Typical reflow temperature for this profile is 250 to 260 °C

Example of profile :



Note : Reflow profile to use depends on solder characteristics. Each soldering material supplier has its own recommendation. TEMEX use the above temperature profile to test reflow compliance of products. Usually the temperature peak is around 250-260 °C during 10 to 20 secondes.