TMX U607

SAW Bandpass Filter – RADIO LINK – IF

Specification (rev -)

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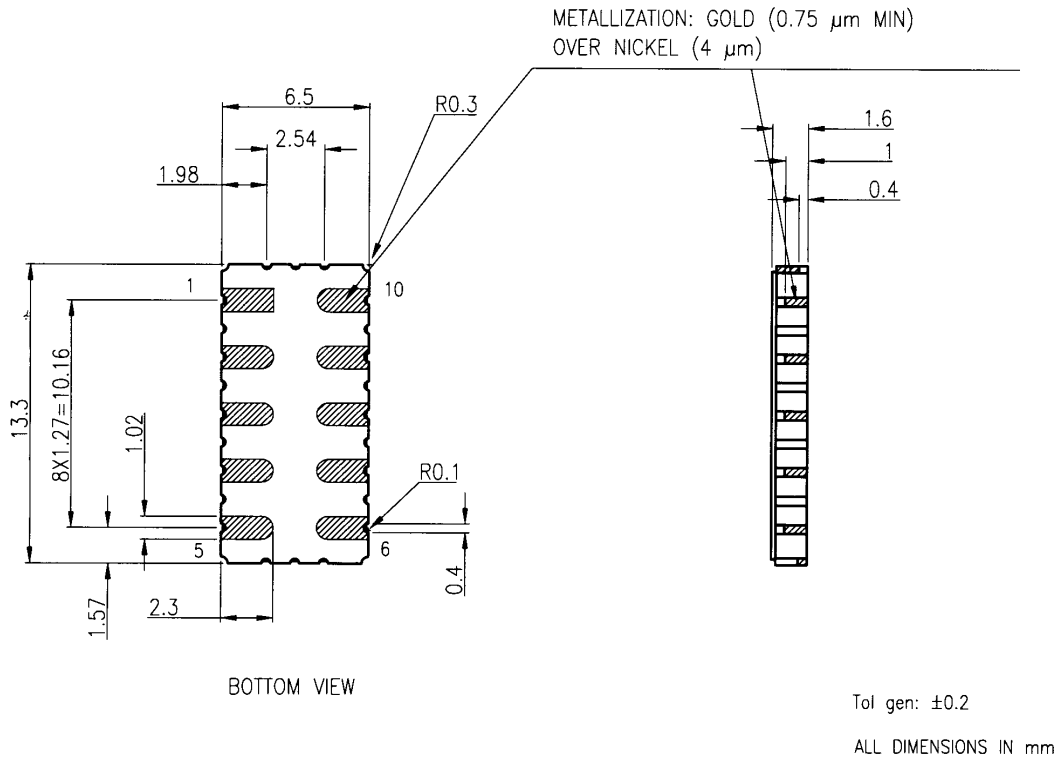
Features

- **SAW Filter for Radio Link Applications**
- **6 MHz usable Passband**
- **Single Ended or Balanced Operation on 50 Ω**
- **Hermetically Sealed Ceramic Package for Surface Mounted Technology**

Package Drawing and 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, 10
Output	5, 6
Case Ground	2, 3, 4, 7, 8, 9
To Be Grounded	2, 3, 4, 7, 8, 9

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Technical Characteristics

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

Electrical Parameters	Unit	Minimum (1)	Typical (1)	Maximum (1)
Source Impedance (balanced)	Ω	-	50 (2)	-
Load Impedance (balanced)	Ω	-	50 (2)	-
Center Frequency fo	MHz	-	140	-
Bandwidth at –1.0 dB (3)	MHz	6.0	8.0	-
Template on the amplitude, reference is minimum insertion loss				
From 118 MHz to 120 MHz	dB	37	40	-
From 120 MHz to 129 MHz	dB	32	36	-
From 129 MHz to 133 MHz	dB	31	35	-
From 147 MHz to 160 MHz	dB	32	36	-
From 160 MHz to 163 MHz	dB	35	42	-
Ultimate rejection	dB	40	45	-
Minimum Insertion Loss (2)	dB	-	16	17
Amplitude Variation within fo ± 3.0 MHz (4)	dB_{p-p}	-	0.5	1.0
Phase Linearity (5) **within fo ± 2.4 MHz** **within fo ± 3.0 MHz**	 deg_{p-p} deg_{p-p}	 - -	 2.5 4.0	 4.0 8.0
Average Group Delay within fo ± 3.0 MHz	µs	0.93	1.03	1.13
Triple Transit Suppression	dB	35	45	-
Pyroelectric Voltage	mV p-p	-	-	50
Temperature Coefficient	ppm/°C	-	-18	-

Notes :

(1) Typical values are nominal performance at room temperature. Minimum and maximum values take into account the variations over temperature range and the variations of standard matching elements (± 2% for inductors and ± 5% for capacitors)

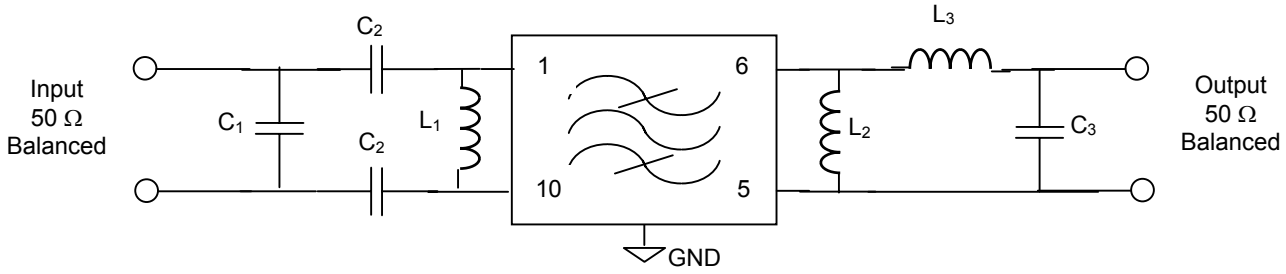
(2) With external matching network.

(3) The amplitude reference is minimum insertion loss.

(4) The amplitude variation is defined as the maximum level – minimum level over the given bandwidth.

(5) Triple transit excluded.

Matching Network for 50 Ω / 50 Ω Balanced Configuration



Temex Test Fixture	
L_1 = 22 nH, Q > 45 C_1 = 27 pF, C_2 = 68 pF	L_2 = 33 nH, L_3 = 9 nH, Q > 45 C_3 = 82 pF

The given configuration and values are for indication only . They may be different on the customer PC board.

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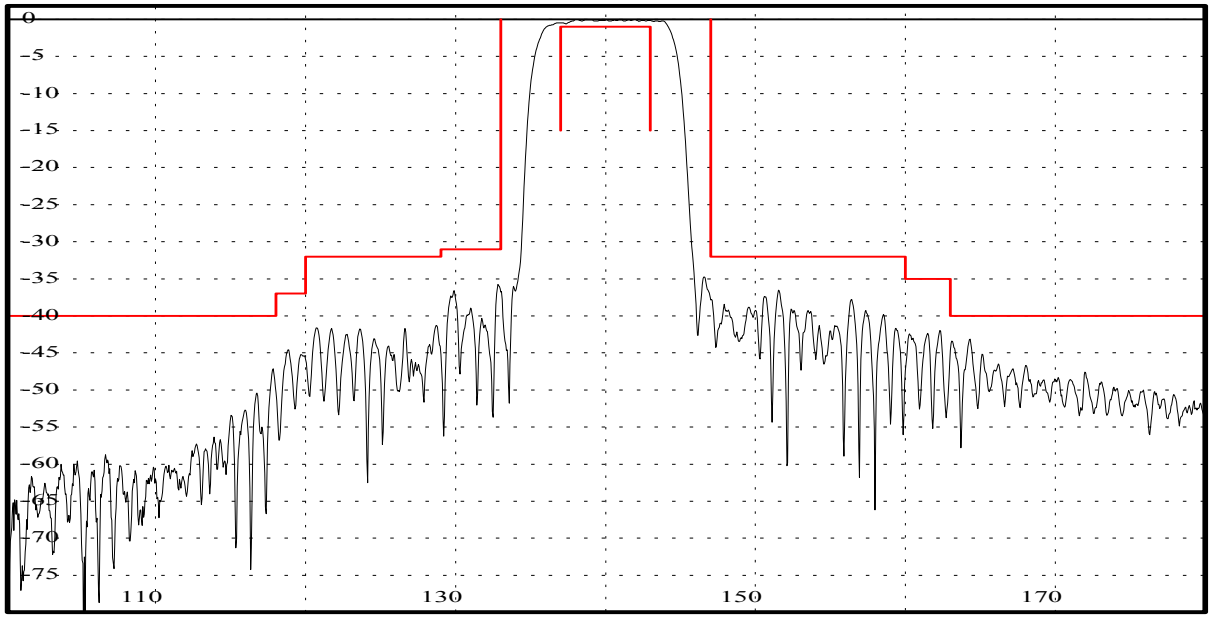
Nominal Frequency Response (Measurement)

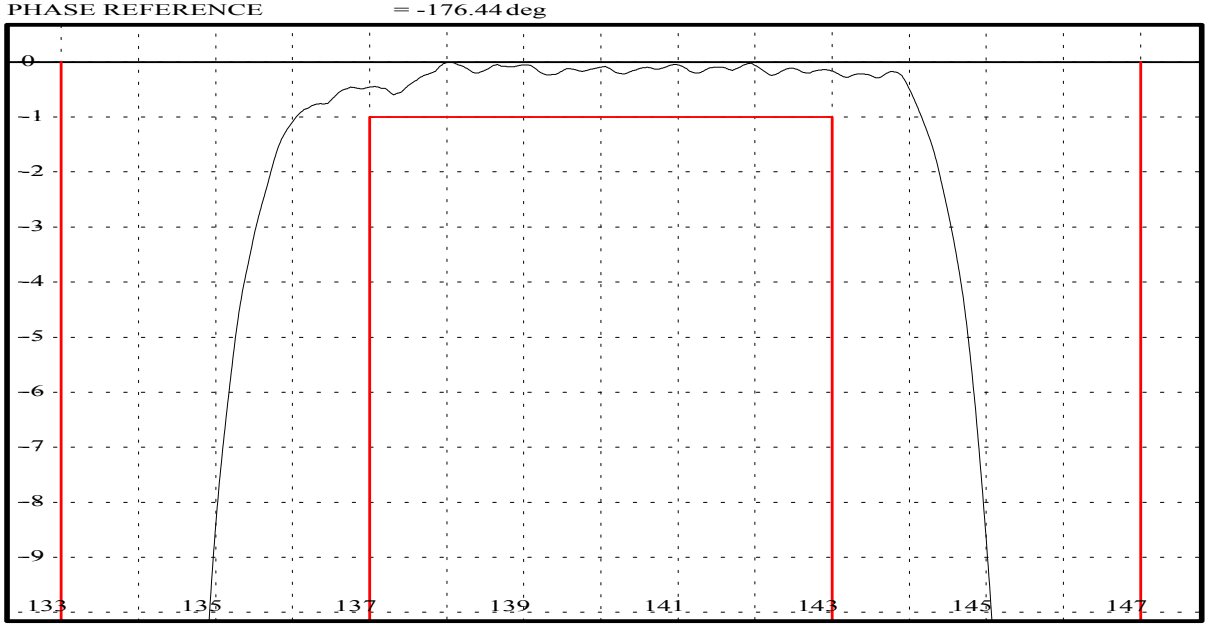
PLOT BANDWIDTH = 79.92 MHz

References			Scales		
CENTER FREQUENCY	= 140	MHz	SCALE_FREQUENCY	= 10	MHz/div
LOSS REFERENCE	= 15.83	dB	SCALE_AMPLITUDE	= 5	dB/div
DELAY REFERENCE	= 1.03	µs			
PHASE REFERENCE	= -176.44	deg			



PLOT BANDWIDTH = 15.5 MHz

References			Scales		
CENTER FREQUENCY	= 140	MHz	SCALE_FREQUENCY	= 1	MHz/div
LOSS REFERENCE	= 15.83	dB	SCALE_AMPLITUDE	= 1	dB/div
DELAY REFERENCE	= 1.03	µs			
PHASE REFERENCE	= -176.44	deg			



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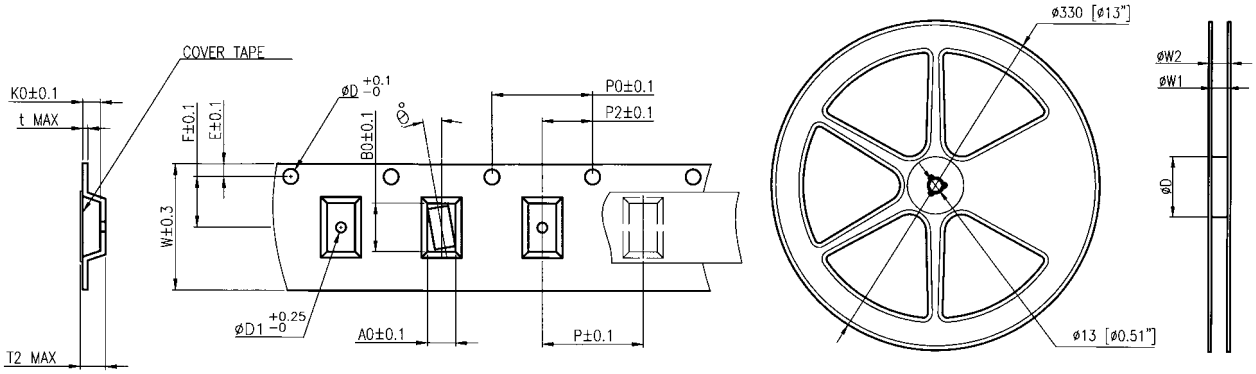
Maximum Ratings (applicable to the SAW filter only)

Operating Temperature Range	°C	[-40°C ; +85°C]
Storage Temperature Range	°C	[-50°C ; +125°C]
DC voltage	V	0
Input Power	dBm	20 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

Tape and Reel



	W	P	E	F	D	D1	P0	P2	A0	B0	K0	t_{max}	T2	θ	W1	W2	ØD
mm	24.00	12.00	1.75	11.50	1.5	1.50	4.00	2.00	6.96	13.77	2.34	0.33	2.895	3°4	24.5	32	100
inch	*0.945*	*0.472*	*0.069*	*0.453*	*0.059*	*0.059*	*0.157*	*0.079*	*0.274*	*0.542*	*0.092*	*0.013*	*0.114*	*3°4*	*0.96*	*1.18*	*3.94*

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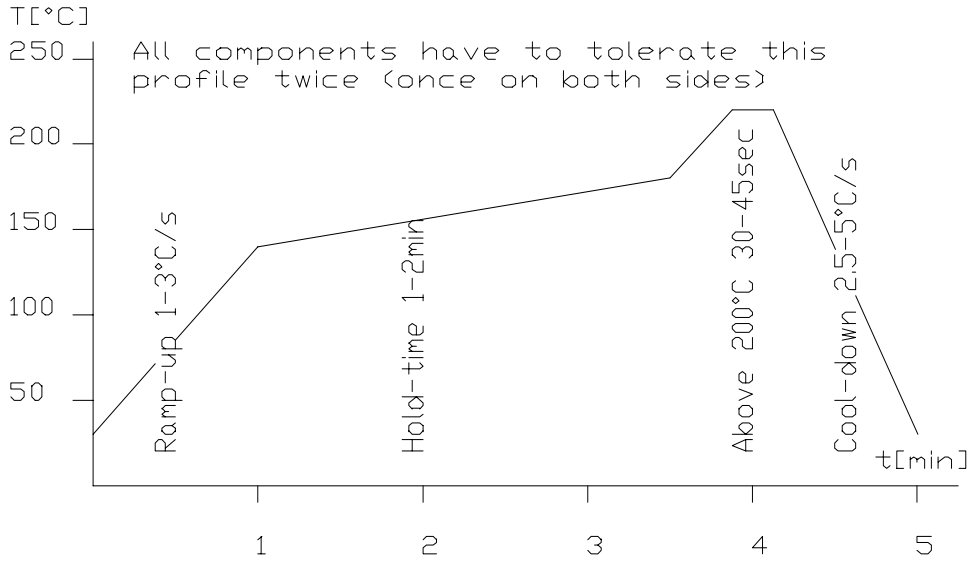
Recommended Reflow Profiles

Lead Process (Sn/Pb)

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

Example of profile

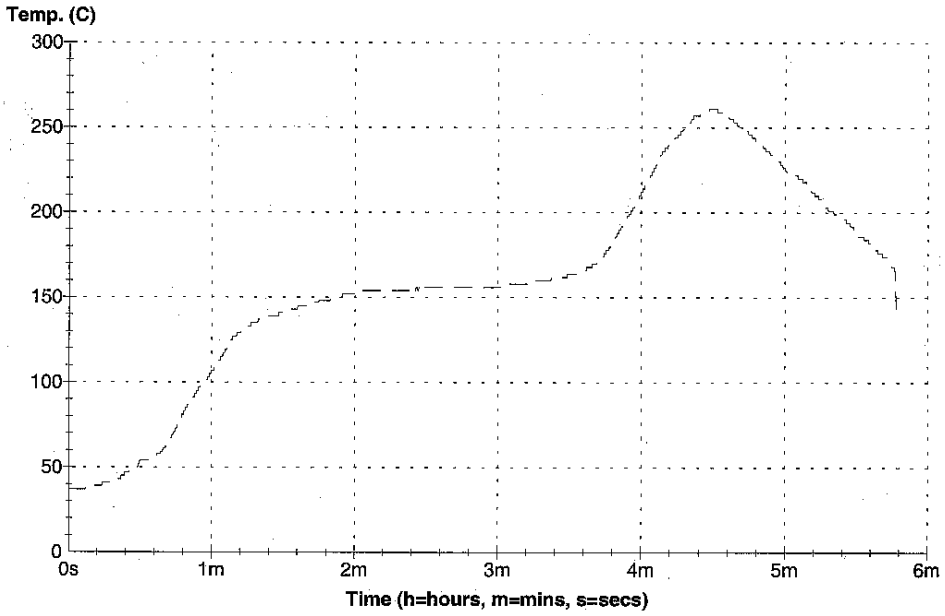


Note : Reflow profile to use depends on solder characteristics. Each soldering material supplier has its own recommendation. This profile is use for the product qualification step.

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.