

## Specifications



### FEATURES

Netcom's 5680 is a tunable filter covering the frequency range of 1.5MHz to 30MHz.

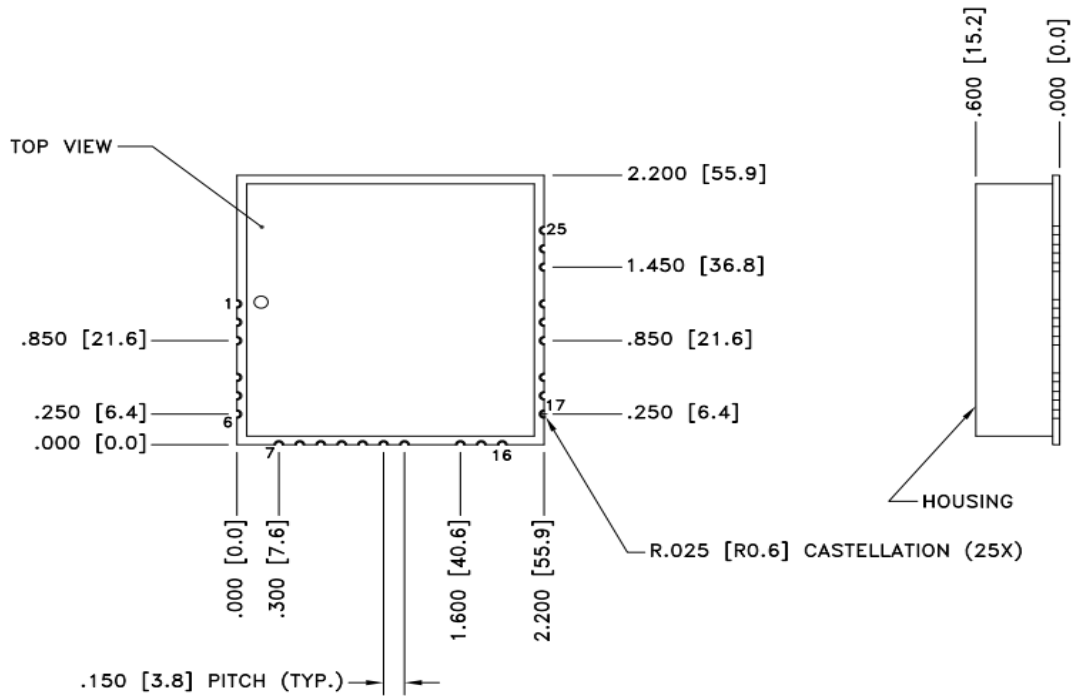
The filter has been designed using three bands of tunable filters. This tri-band filter is offered in a small integrated SMT package to support applications where compact design, power requirements, and board layout flexibility are important. It meets the vibration and shock requirements of systems used in ground-mobile and airborne environments.

The following table shows the typical performance of the filter at a bandwidth of 12.5%. Options are available upon request for different bandwidths.

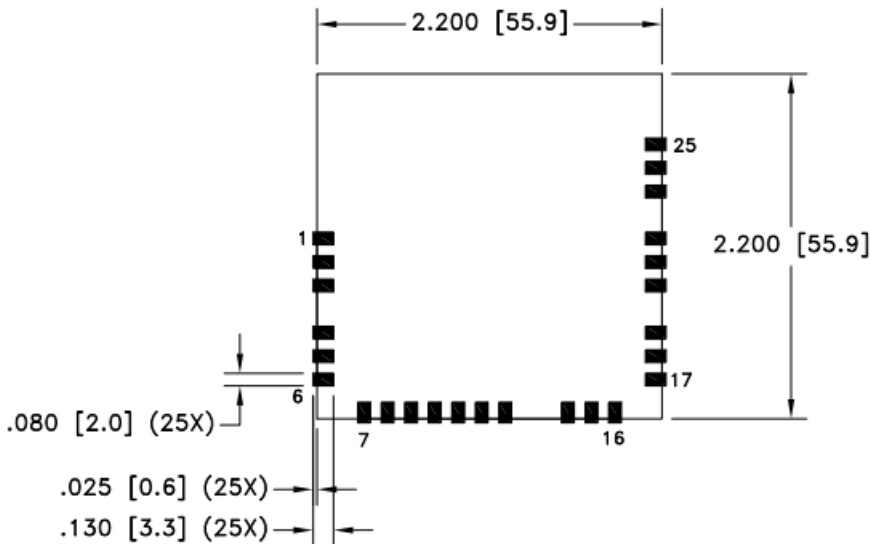
Frequency Range	1.5 to 30 MHz
BW (Typical)	12.5%
Impedance (Input /Output) - Typical	50 $\Omega$
1/2Ftune	< -30dB
Ftune +/- 10% Rejection	< -9.1dB*
Ftune +/- 15% Rejection	< -15dB
Ftune +/- 20% Rejection	< -19dB*
2Ftune	< -35dB
Tuning Speed	< 50 $\mu$ s
Insertion Loss (typical at Ambient Temperature)	3.0 dB
Insertion Loss (max at Ambient Temperature)	3.8 dB
Insertion Loss (max)	4.2 dB*
Return Loss	9.5 dB
Tuning Resolution	25KHz (min)
P1dB	
1.5MHz to 4MHz	17dBm
4MHz to 30MHz	22dBm
Max Power Handling	26dBm
IP3	
1.5MHz to 4MHz	30dBm
4MHz to 30MHz	37dBm
DC Voltage	3.3 Volts
DC Current Max	35 mA
Operating Temperature Range	-40 to +85°C
Control Interface	SPI Input
Dimensions	2.2 x 2.2 x 0.6 inches

\* Includes variation over temperature.

# Mechanical



## RECOMMENDED LAYOUT PATTERN TOP VIEW



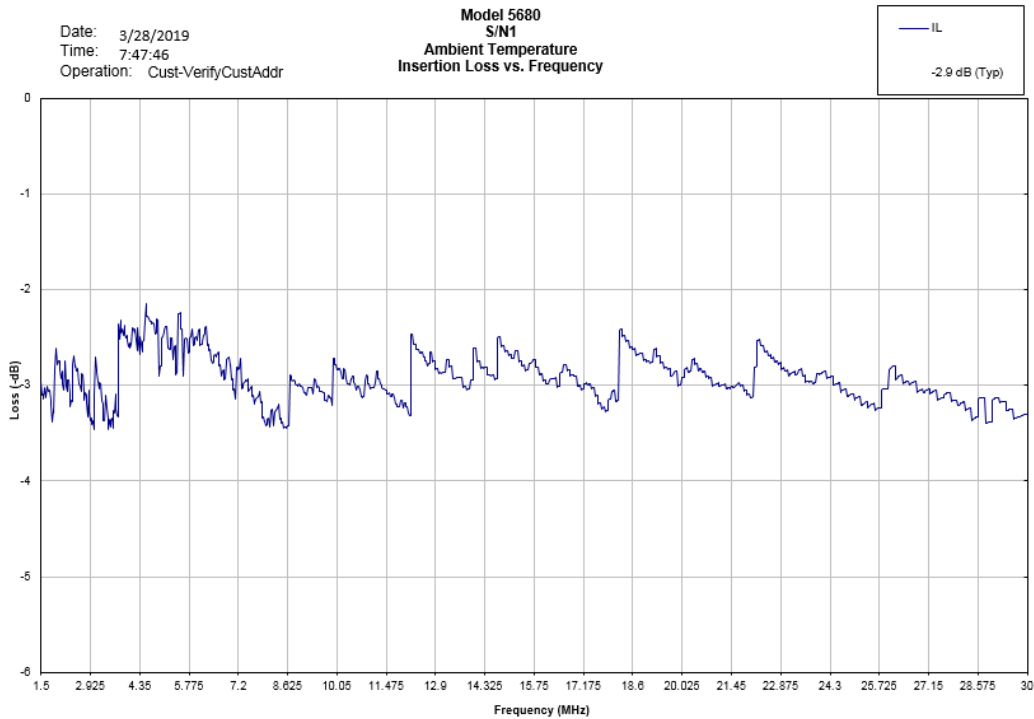
PIN DESIGNATORS			
PIN NUMBER	DESCRIPTION	PIN NUMBER	DESCRIPTION
1	GND	14	GND
2	RF IN	15	SPI CLK
3	GND	16	SPI MOSI
4	GND	17	SPI CS
5	N/C	18	N/C
6	N/C	19	GND
7	TUNE_READY	20	GND
8	N/C	21	RF OUT
9	N/C	22	GND
10	N/C	23	GND
11	N/C	24	VCC (+3.3V)
12	N/C	25	GND
13	GND		

N/C = NO CONNECT

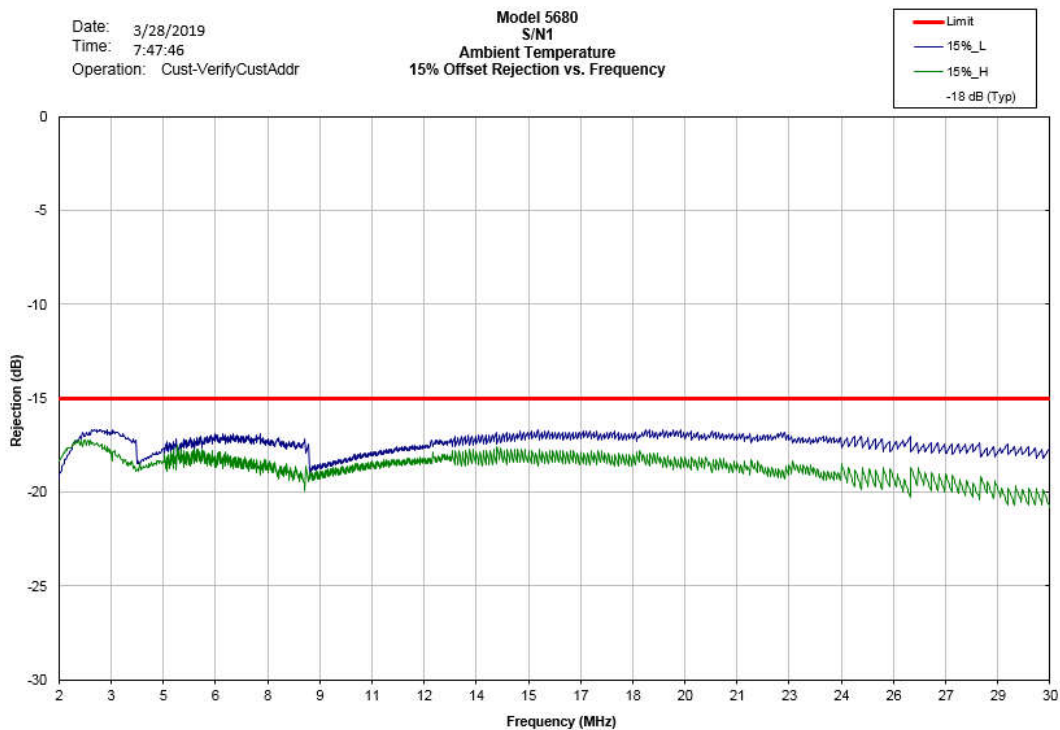
### NOTES:

1. TOLERANCES  $\pm 0.010$  [0.25] UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE INCHES [mm].

# Insertion Loss vs Frequency



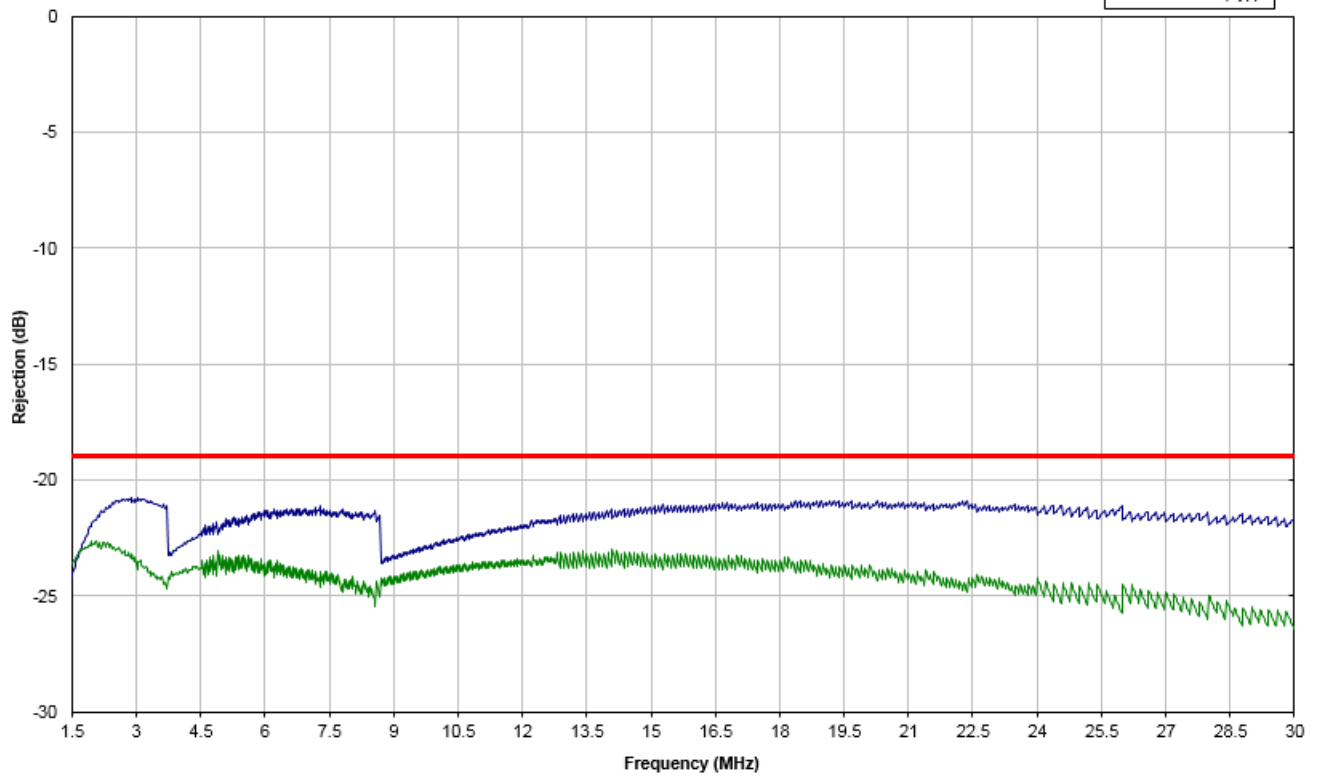
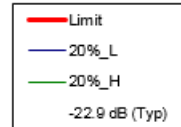
# 15% Rejection vs Frequency Graph



# 20% Rejection vs Frequency Graph

Date: 3/28/2019  
Time: 7:47:46  
Operation: Cust-VerifyCustAddr

Model 5680  
S/N1  
Ambient Temperature  
20% Offset Rejection vs. Frequency



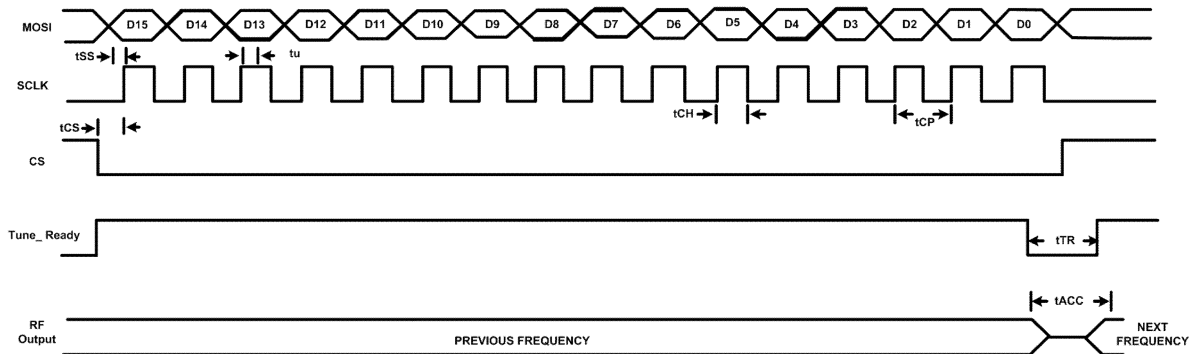
# Serial Address Input Timing Diagram

Tuning addresses start at 60 decimal (1.5MHz) and end at 1200 decimal (30MHz) in 25KHz increments. Each decimal step represents a 25KHz frequency step increase or decrease. Tuning of the filter starts when the last data clock (16th) pulse of the address is sent to the unit while the CS (Chip Select) is low.

The filter will move to the correct tune channel which allows the tuned address frequency to pass while meeting all of the tuning parameters. In some cases the filter tune channel may not move.

Symbol	Parameter	Min	Max	Units
tSS	Setup time MOSI Data to SCLK*	50		ns
tu	Hold Time MOSI Data From SCLK		0	ns
tCH	Clock High Time	125		ns
tCP	Clock Period	250		ns
tCS	Chip Setup Time (CS falling edge to SCLK start)	125		ns
tTR	Tune_Ready indicator***		50	us
tACC	Access time from Last (16th) SCLK edge to Fo**		50	us

## 56XX ADDRESS PROTOCOL



\* Data clocked in on SCLK leading edge.

\*\* Filter tunes to address on last clock bit of address SCLK.

\*\*\* Tune\_Ready at logic low when filter processing tuned address.

# Environmental Specification Standards

## Temperature:

- High temperature shall meet MIL-STD-810E, Method 501.3, Procedure I to 85°C storage, and procedure II to 85°C operating.
- Low temperature shall meet Method 502.3, Procedure I to -57°C storage, and Procedure II to -40°C operating.

## Vibration:

- MIL-STD-810E Method 514.4 Ground Mobile Test Procedure I, Test Condition I - 3.4.7

## Shock:

- MIL-STD-810E Procedure I, Method 516.4 - Functional Shock.

## Reflow:

- 5680 units should be hand soldered and not put through reflow.