




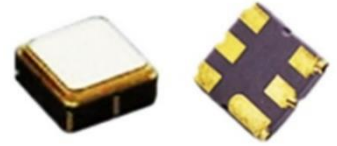
<b>SPECIFICATION SHEET NO.</b>	S0308 - SBF947M5DX9613	
<b>ORIGINAL MFG/PART NO.</b>	TGS Crystals/SBF947.5MA TLF/SBF 947.5M DX9613/DX9613	
<b>NEXTGEN PART CODE</b>	SBF947M5DX9613	Indicate This Code For <a href="#">RFQ</a> /Order
<b>DATE</b>	Mar.8, 2025	
<b>REVISION</b>	A3	Updated With Most Recent Data
<b>DESCRIPTION AND MAIN PARBMETRICS</b>	<p>SMD SAW Filter, 6 Pads, 3838 Type, SBF Series</p> <p>Case Dimension L3.8*W3.8*H1.50mm</p> <p>Center Frequency 947.50MHz; Insertion Loss: 1.4dB Typical, 2.0dB Max.</p> <p>Amplitude Ripple : 2.0dB Max.</p> <p>Operating Temp. Range -40°C ~ +85°C</p> <p>Reflow Profile Condition 260°C Max.</p> <p>Package in Tape/Reel, 1000pcs/Reel</p> <p>REACH/RoHS/RoHS III Compliant</p>	
<b>CUSTOMER</b>		
<b>CUSTOMER PART NUMBER</b>		
<b>CROSS REF. PART NUMBER</b>		
<b>MEMO</b>		

<b>VENDOR APPROVE</b>
<div>Issued/Checked/Approved</div> <div>    </div>
Effective Date: Mar. 8, 2025

<b>CUSTOMER APPROVE</b>
Date:

## MAIN FEATURE

- SMD SAW Filter 3838 Type 6 Pads
- Dimension L3.8\*W3.8\*H1.5mm
- Low-loss SAW Filter
- Low Amplitude Ripple
- No Matching Network Required For Operation At 50Ω
- Usable Passband 25.00MHz
- Package code DCC6
- Ceramic Package For Surface Mounted Technology (SMT)
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level (MSL) 1
- Short Lead time
- Cross Competitors Parts and More
- REACH/RoHS/RoHS III Compliant



*Image shown is a representation only. Exact specifications should be obtained from the product dimension.*



## APPLICATION

- Bluetooth, Wireless Communication Set
- Communication Electronics
- GPS, Remote Control Application

## ELECTRICAL CHARBCTERISTICS

- See Page 5
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

## HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code SBF947M5DX9613 For RFQ and Order.

## PART CODE GUIDE

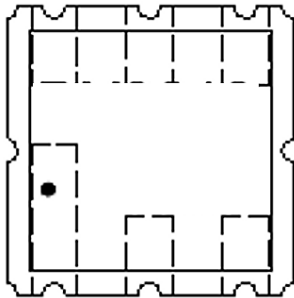
**RFQ**

[Request For Quotation](#)

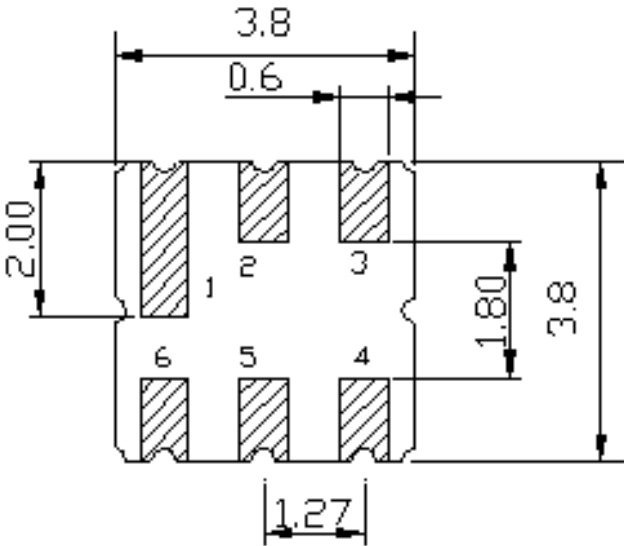
CODE	NAME	KEY SPECIFICATION OPTION
SBF	Series Code	SMD SAW Filter Case Dimension L3.8*W3.8*H1.50mm 3838 Type 6 Pads
947M5	Frequency Range Code	947M5: 947.5000MHz
DX9613	Internal Control Code	Letter A~Z, a~z or Digits (1-9)
XX	Special/Custom Parameters Code	Blank: N/A XX: Letter A~Z, a~z or Digits (0~9) for Special/Custom Parameters

**DIMENSION** - Unit: mm, L3.8\*W3.8\*H1.5mm

Top View

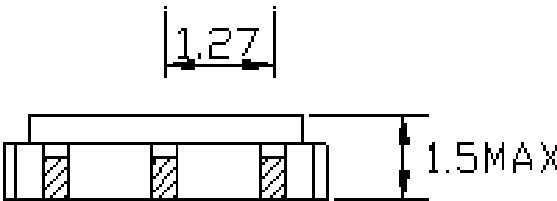


Bottom View



PIN NO.	2	5	1, 3, 4, 6
CONFIGURATION	Input	Output	Case Ground

Side View



**MAX. RATING & CHARACTERISTICS** - At 25±2°C Ambient Temperature Unless Otherwise Specified.

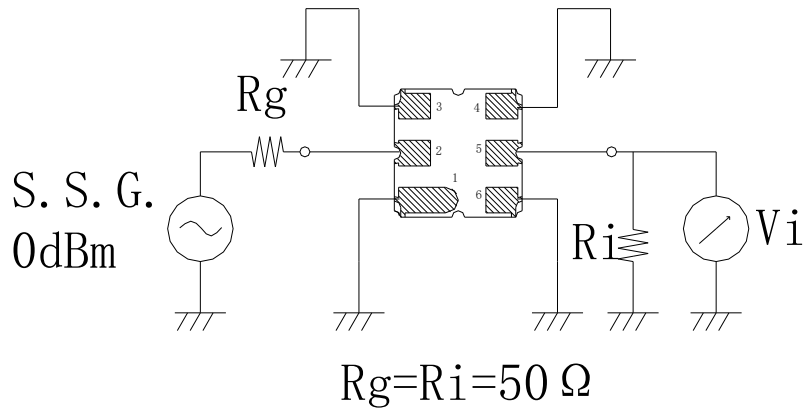
PARAMETER	SYMBOLS	VALUE	UNITS
RF Power Level	P	10	dBm
DC Voltage	Vdc	3	V
Operating Temperature Range	TA	-40 to +85	°C
Storage Temperature Range	Tstg	-55 to +125	°C

**ELECTRONICAL CHARACTERISTICS**

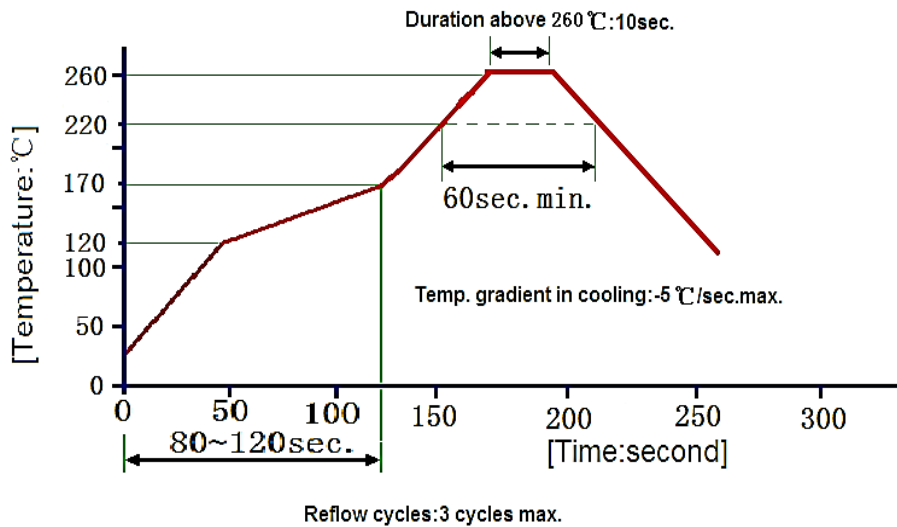
1) Test Temperature: 25°C±2°C 2) Terminating source impedance: 50Ω 3) Terminating load impedance: 50Ω .

PARAMETER		SYMBOLS	CHARACTERISTICS			
			MIN.	TYPICAL	MAX.	UNIT
Center Frequency		FC	-	947.50	-	MHz
Insertion Loss		IL	-	1.4	2.0	dB
Insertion Loss	935.0 ~ 960.0MHz	IL	-	2.1	3.2	dB
Amplitude Ripple (p-p)	935.0 ~ 960.0MHz	Δa	-	0.9	2.0	dB
Group Delay Ripple	935.0 ~ 960.0MHz	GDR	-	40	100	ns
Absolute Attenuation	DC ~ 700MHz	α	45	52		dB
	700 ~ 910MHz		45	52		dB
	910 ~ 925MHz		25	40	-	dB
	975 ~ 1000MHz		20	25	-	dB
	1000 ~ 200MHz		45	50	-	dB
	2000 ~ 3000MHz		30	35	-	dB
Input VSWR	935.00 - 960.00MHz		-	1.8:1	2.0:1	/
Output VSWR	935.00 - 960.00MHz		-	1.8:1	2.0:1	/

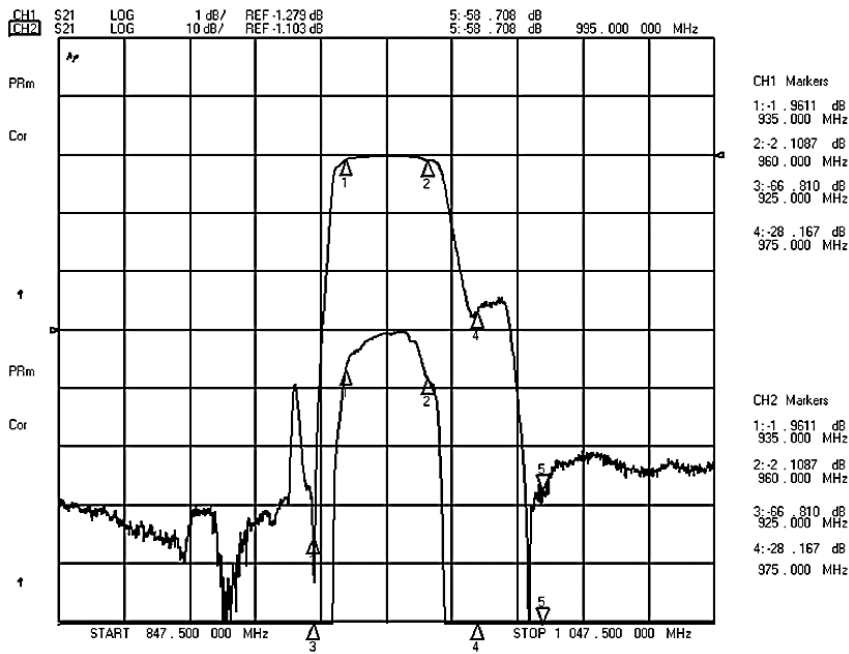
**MEASUREMENT CIRCUIT – FOR REFERENCE ONLY**



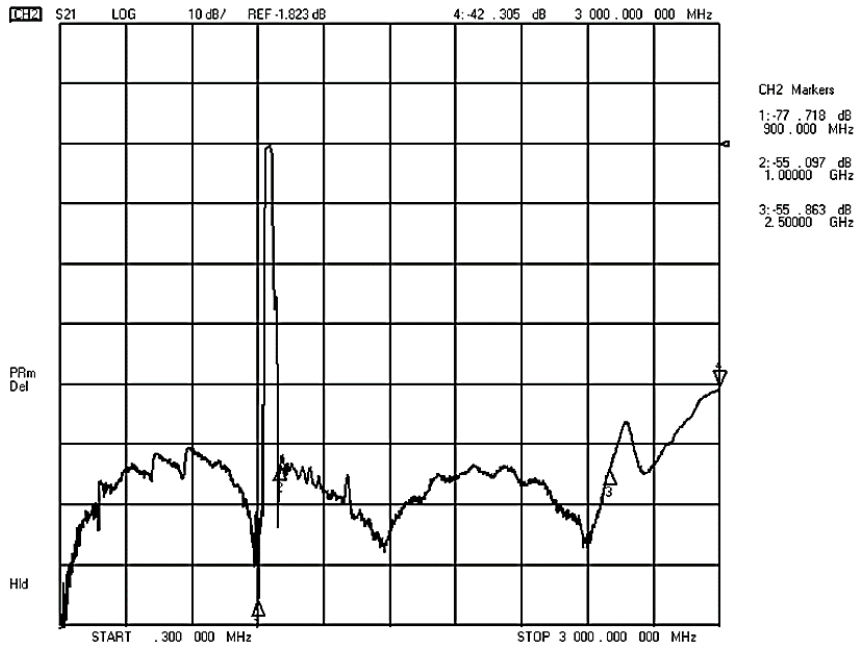
**RECOMMENDED SOLDERING PROFILE – FOR REFERENCE ONLY**



**FREQUENCY CHARACTERISTICS – FOR REFERENCE ONLY**

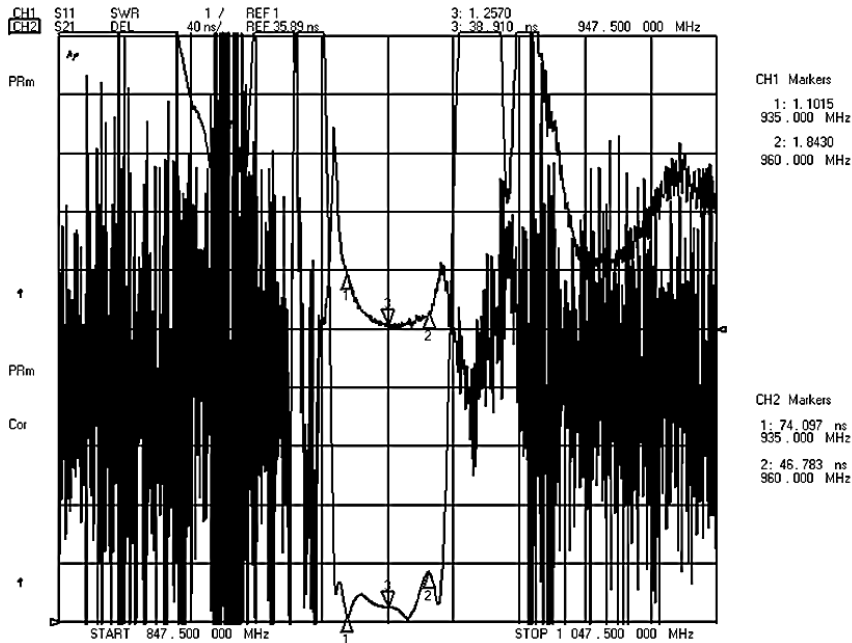


**Frequency Response**

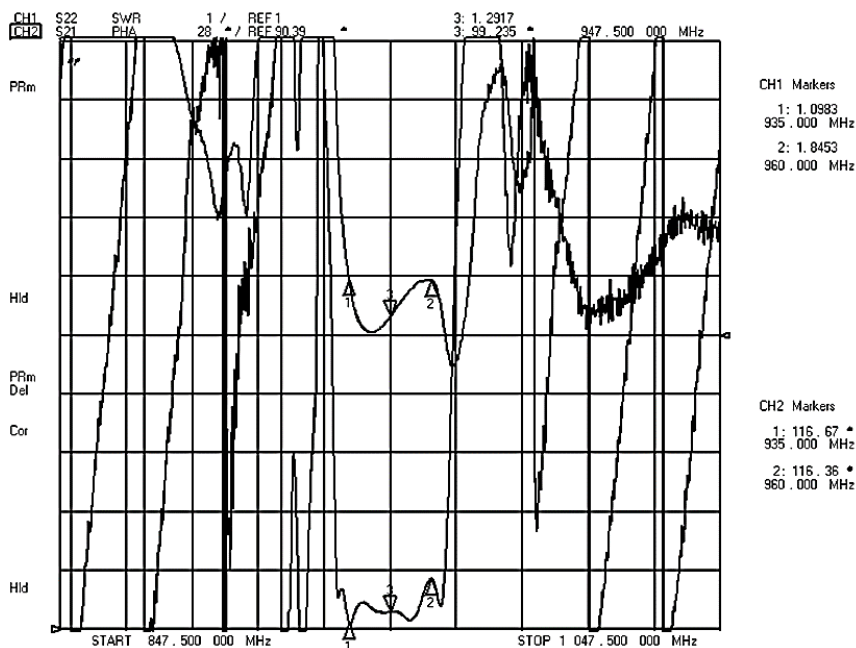


**Frequency Response (wideband)**

**FREQUENCY CHARACTERISTICS – FOR REFERENCE ONLY**

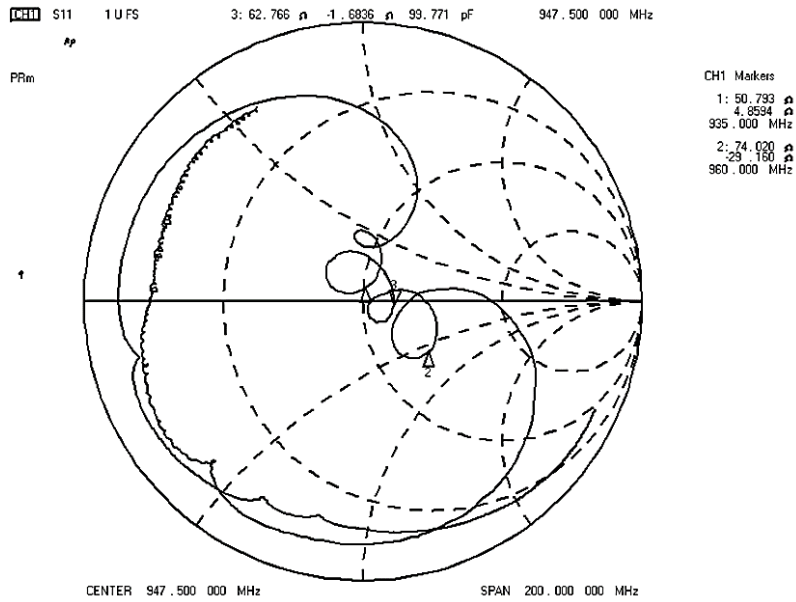


**Delay Ripple & S11 VSWR**

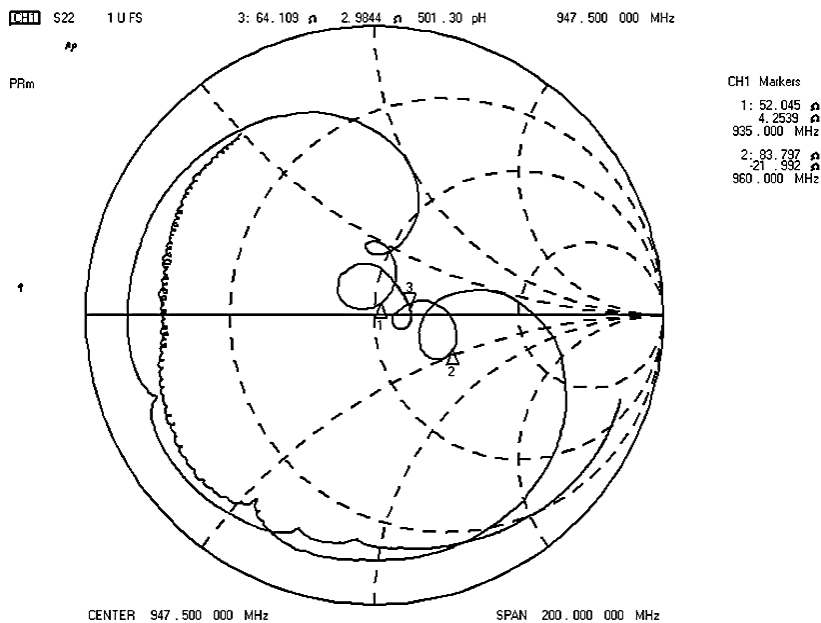


**Phase Linearity & S22 VSWR**

**FREQUENCY CHARACTERISTICS – FOR REFERENCE ONLY**



**S11 Smith Chart**



**S22 Smith Chart**

## RELIABILITY CHARACTERISTICS

TEST ITEMS	TEST METHOD AND CONDITIONS
High Temperature Storage	<ul style="list-style-type: none"> <li>Temperature: <math>85^{\circ}\text{C} \pm 2^{\circ}\text{C}</math>, Duration: 250h , Recovery time: <math>2\text{h} \pm 0.5\text{h}</math></li> <li>Temperature: <math>-55^{\circ}\text{C} \pm 3^{\circ}\text{C}</math>, Duration: 250h ,Recovery time: <math>2\text{h} \pm 0.5\text{h}</math></li> </ul>
Humidity Test	<ul style="list-style-type: none"> <li>Conditions: <math>60^{\circ}\text{C} \pm 2^{\circ}\text{C}</math> , 90~95% RH, Duration: 250h</li> </ul>
Thermal Shock	<ul style="list-style-type: none"> <li>Heat cycle conditions: <math>\text{TA} = -55^{\circ}\text{C} \pm 3^{\circ}\text{C}</math>, <math>\text{TB} = 85^{\circ}\text{C} \pm 2^{\circ}\text{C}</math>, <math>t_1 = t_2 = 30\text{min}</math>,</li> <li>Switch time: <math>\leq 3\text{min}</math>, Cycle time: 100 times,</li> <li>Recovery time: <math>2\text{h} \pm 0.5\text{h}</math>.</li> </ul>
Vibration Fatigue	<ul style="list-style-type: none"> <li>Frequency of vibration: 10~55Hz, Amplitude:1.5mm</li> <li>Directions: X,Y and Z, Duration: 2h</li> </ul>
Drop Test	<ul style="list-style-type: none"> <li>Cycle time: 10 times, Height: 1.0m</li> </ul>
Solderability	<ul style="list-style-type: none"> <li>Temperature: <math>245^{\circ}\text{C} \pm 5^{\circ}\text{C}</math>, Duration: 3.0s--5.0s, Depth: DIP--2/3 , SMD--1/5</li> </ul>
Resistance to Soldering Heat	<ul style="list-style-type: none"> <li>Thickness of PCB:1mm , Solder condition: <math>260^{\circ}\text{C} \pm 5^{\circ}\text{C}</math> , Duration: <math>10 \pm 1\text{s}</math></li> <li>Temperature of Soldering Iron: <math>350^{\circ}\text{C} \pm 10^{\circ}\text{C}</math> , Duration: 3~4s ,</li> <li>Recovery time : <math>2 \pm 0.5\text{h}</math></li> </ul>
Remarks	<ul style="list-style-type: none"> <li>As a result of the particularity of inner structure of SAW products, it easy to be breakdown by electrostatic, so we should pay attention to ESD protect in the test.</li> <li>Static voltage between signal load and ground may cause deterioration and destruction of the component. Please avoid static voltage.</li> <li>Ultrasonic cleaning may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.</li> <li>Only leads of component may be soldered. Please avoid soldering another part of component.</li> <li>There is a close relationship between the device's performance and matching network. The specifications of this device are based on the test circuit shown above. L and C values may change depending on board layout. Values shown are intended as a guide only.</li> </ul>

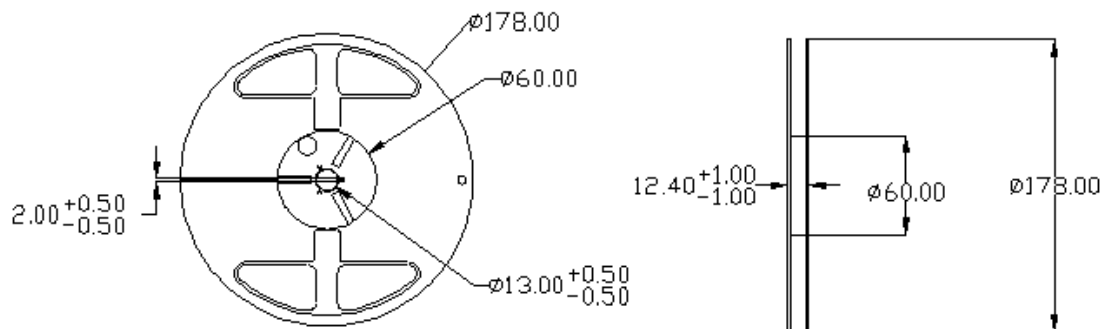
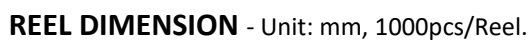
Technical drawing of a mechanical part, likely a bracket or support, showing dimensions and tolerances. The drawing includes a top view and a side view.

**Top View Dimensions:**

- Overall width:  $12.00^{+0.10}_{-0.10}$
- Overall height:  $5.50^{+0.05}_{-0.05}$
- Distance from left edge to first hole center:  $2.00^{+0.10}_{-0.10}$
- Distance between hole centers:  $\phi 1.50^{+0.10}_{-0.00}$
- Distance from last hole center to right edge:  $4.00^{+0.10}_{-0.10}$
- Distance from left edge to first square feature center:  $4.00^{+0.10}_{-0.10}$
- Distance between square feature centers:  $4.00^{+0.10}_{-0.10}$
- Distance from last square feature center to right edge:  $4.00^{+0.10}_{-0.10}$
- Distance from top edge to hole center line:  $1.75^{+0.10}_{-0.10}$

**Side View Dimensions:**

- Overall height:  $1.60^{+0.05}_{-0.05}$
- Distance from top edge to hole center line:  $3.20^{+0.05}_{-0.05}$
- Distance from hole center line to bottom edge:  $0.30^{+0.05}_{-0.05}$



## IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.