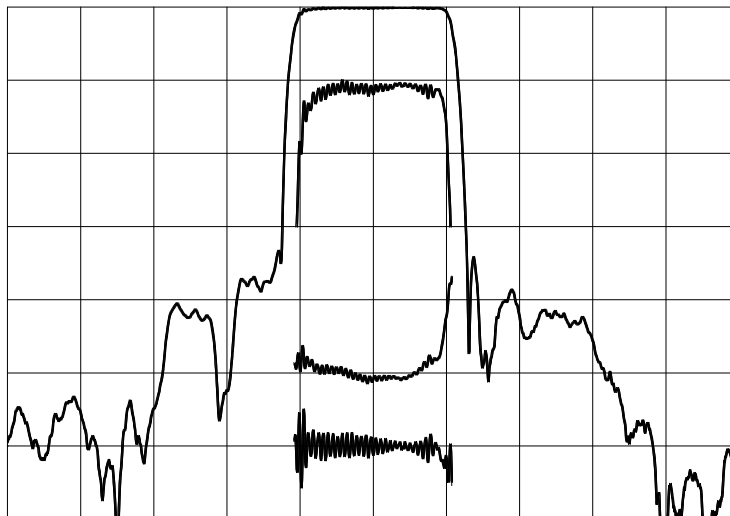




TYPICAL PERFORMANCE



Horizontal: 8 MHz/div

Vertical (from top):

Magnitude	10.1	dB/div
Phase Deviation	10	deg/div
Group Delay Variation	100	ns/div

SPECIFICATION

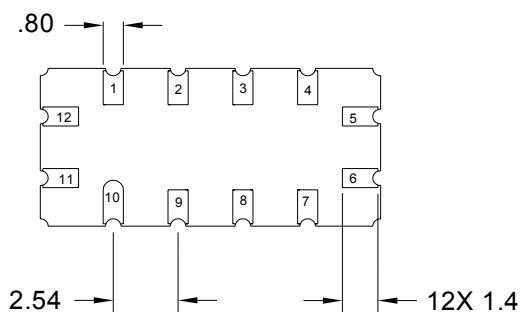
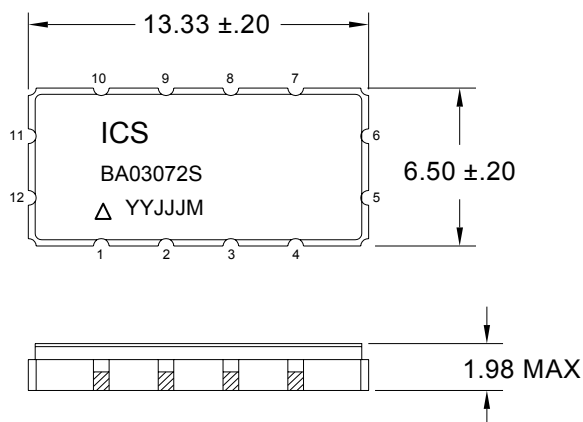
Parameter	Min	Typ	Max	Units
Center Frequency (Fc) ¹	139.6	140	140.4	MHz
Insertion Loss		9.6	10.7	dB
1 dB Bandwidth	15	16.3		MHz
3 dB Bandwidth	16	17.2		MHz
30 dB Bandwidth		20.1	21	MHz
Passband Ripple		0.4	1	dB
Phase Deviation from Linear ²		4	14	deg
Group Delay Variation ²		40	160	ns
Absolute Delay		1.0		μs
Substrate		LiNbO ₃		-
Temperature Coefficient of Frequency (Tc) ³		-90		ppm/°C
Ambient Temperature		25		°C
System Source and Load Impedance		50		Ω

- Notes: 1. Average of lower & upper 3 dB frequencies.
 2. Evaluated over 80% of the 3 dB bandwidth.
 3. Typical change of filter frequency response with temperature is $\Delta f/f_{ref} = (T-T_{ref}) \cdot T_c$ ppm.

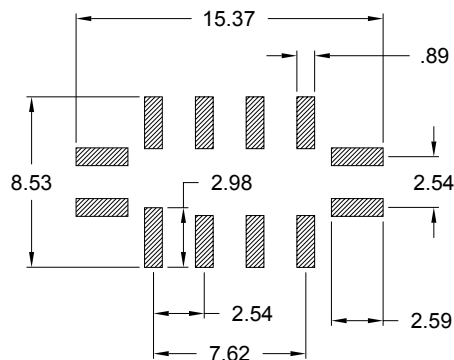


PACKAGE AND SUGGESTED PCB FOOTPRINT

PACKAGE INFORMATION



SUGGESTED PCB FOOTPRINT

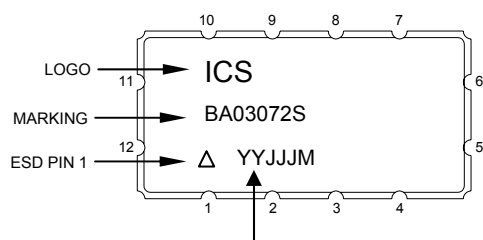


PIN CONFIGURATION	
11	INPUT
12	INPUT RETURN
5	OUTPUT
6	OUTPUT RETURN
ALL OTHERS	GROUND

NOTES:
DIMENSIONS SHOWN ARE NOMINAL IN MILLIMETERS. ALL TOLERANCES ARE ± 0.15 MM EXCEPT OVERALL LENGTH AND WIDTH

Package Material:
Body: Al_2O_3 ceramic
Lid: Kovar, Ni plated
Terminations: Au plating 1 μ m min, over a 1.3-8.9 μ m Ni plating

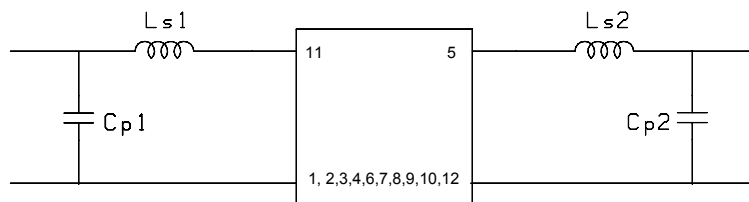
MARKING



The date code consists of:
YY = last two digits of year; JJJ = Julian day;
M = manufacturing site code



MATCHING CIRCUIT



Component values in 50 Ω :
(Minimum Q = 40)

$L_{s1} = 107$ nH
 $C_{p1} = 12$ pF

$L_{s2} = 120$ nH
 $C_{p2} = 18$ pF

Notes:

1. Optimum values may differ from these when using a different fixture or board layout. The values shown here are intended as a guide only.
2. Required component tolerances – inductors $\pm 5\%$, capacitors $\pm 10\%$.

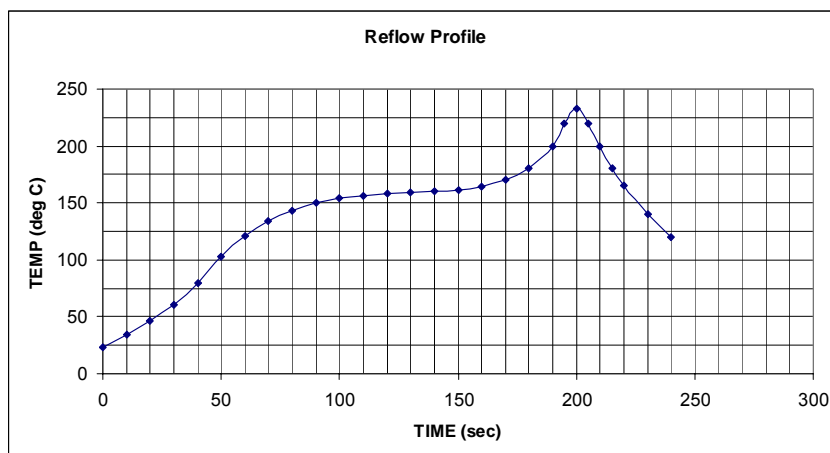
MAXIMUM RATINGS

Parameter	Min	Max	Units
Storage Temperature Range	-45	+85	$^{\circ}\text{C}$
Maximum Input Power Level		15	dBm
D. C. Voltage between Each Terminal		15	V



PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Parameter	Qualification Conditions
Life Testing	High temperature bake at +85 °C for 168 hours.
Temperature Cycling	MIL-STD 883, Method 1010: -40 °C to +85 °C, 10 cycles, 10 minutes dwell at temperature extremes
Vibration	MIL-STD-202, Method 201A: 10 to 55 Hz, double amplitude of 0.06" for 2 hours in each axis.
Mechanical Shock	MIL-STD-883, Method 2002, Test Condition B: 1500 g, 3 impacts each axis
Solder Heat Resistance and Reflow Condition	Peak temperature 240+/-5 °C for 10 seconds. Pre-heat: 150-170 °C for 60 to 90 seconds. Peak dwell: over 200 °C for 23 to 26 seconds. Handling: Class 1 per MIL-STD-1686 Reflow Profile is shown at the bottom of this table.
Lead Integrity	MIL-STD 883 Method 2004, Condition D 8 oz for 30 seconds.
Solderability	MIL-STD-883 Method 2003: 245 °C +/-5 °C; 95% coverage; no steam aging
Hermeticity	MIL-STD 883 Method 1014: Condition A2 and Condition C (no bomb)
ESD Classification	Class I per MIL-STD-883 Method 3015
Precautions	Do not subject devices to ultrasonic cleaning, which may cause deterioration and destruction of the device.



ISO 9001
Registered

Rev X6 15-Feb-05
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