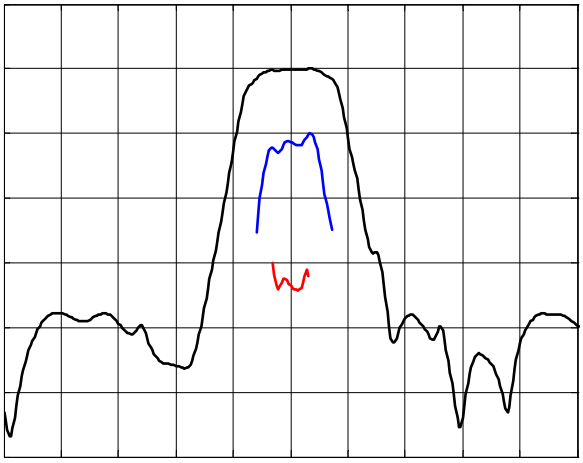
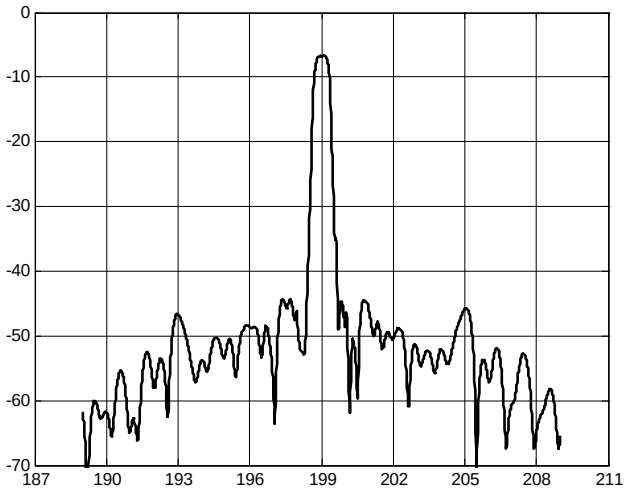
## TYPICAL PERFORMANCE



Horizontal: 0.40 MHz/div
Vertical (from top): Magnitude 10 dB/div
Magnitude 1 dB/div
Group Delay 500 ns/div




Horizontal: 3.0 MHz/div
Vertical: Magnitude 10 dB/div

## SPECIFICATION

| Parameter | Min | Typ | Max | Units |
|---|---|---|---|---|
| Normal Center Frequency $F_C$ | | 199.00 | | MHz |
| Insertion Loss at Fc [1] | | 7 | 8 | dB |
| 1 dB Bandwidth | 200 | 470 | | KHz |
| Passband Ripples over Fc+/-100 KHz | | 0.25 | 0.5 | dB p-p |
| Group Delay Ripples over Fc+/-100 KHz | | 175 | 500 | ns p-p |
| Rejection, $F_C$ ± (0.600 to 0.800) MHz | 20 | | | dB |
| Rejection, $F_C$ ± (0.800 to 17.00) MHz | 30 | | | dB |
| Rejection, $F_C$ ± (17.00 to 80.00) MHz | 35 | 52 | | dB |
| Operating Temperature Range | -35 | | +85 | ° C |
| Impedance Matching to 50 Ω Unbalanced | External L-C | | | |
| Impedance Matching to 200 Ω Balanced | External L-C | | | |

Note: 1. All dB values are referenced to the insertion loss value at Fc.



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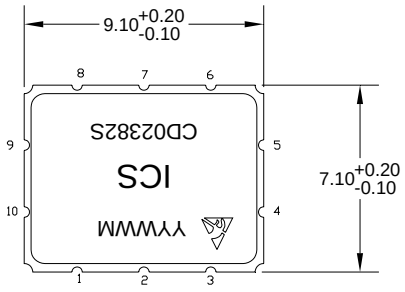
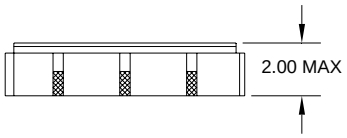
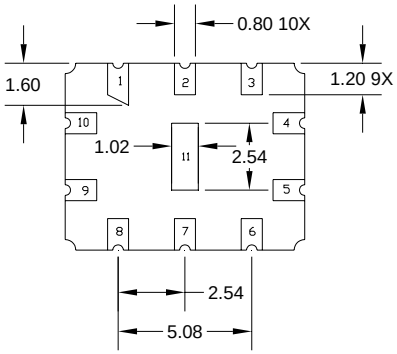
## PACKAGE AND SUGGESTED PCB FOOTPRINT

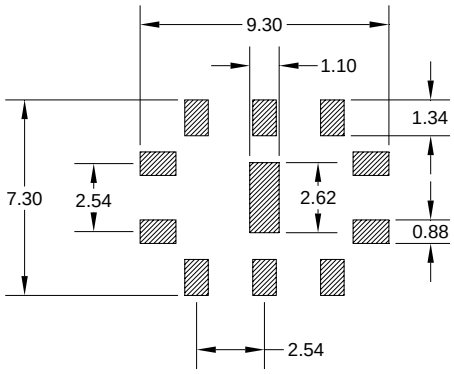
PACKAGE INFORMATION




SUGGESTED PCB FOOTPRINT

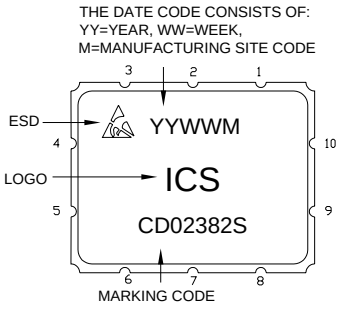



| PIN NO. | DESCRIPTION |
|---|---|
| 3 | INPUT |
| 2 | INPUT RETURN |
| 8 | OUTPUT |
| 7 | OUTPUT RETURN |
| 1,4,5,6,9,10,11 | GROUND |

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

Package Material:
Body: $Al_2O_3$ ceramic
Lid: *Kovar*, *Ni* plated
Terminations: *Au* plating 0.5-1.0 um, over a 2-6 um *Ni* plating

## MARKING



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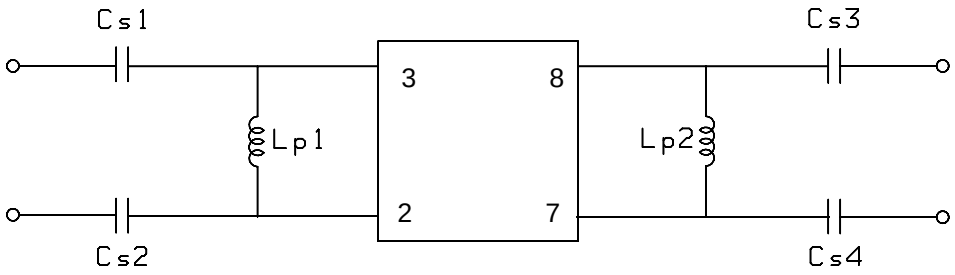
## MATCHING CIRCUIT for Balanced, 200 Ω Impedance at Both Input and Output




Typical component values: Cs1 =Cs2=3.3 pF Cs3=Cs4=4.7 pF
Ls1 = 72 nH Ls2 = 68 nH

Note:
Component values may change depending on PCB layout and parasitic.

## MAXIMUM RATINGS

| Parameter | Min | Max | Units |
|---|---|---|---|
| Operating Temperature Range | -35 | +85 | ºC |
| Storage Temperature Range | -45 | +85 | ºC |
| Maximum Input Power Level | | 20 | dBm |
| D. C. Voltage between Each Terminal | | 15 | V |



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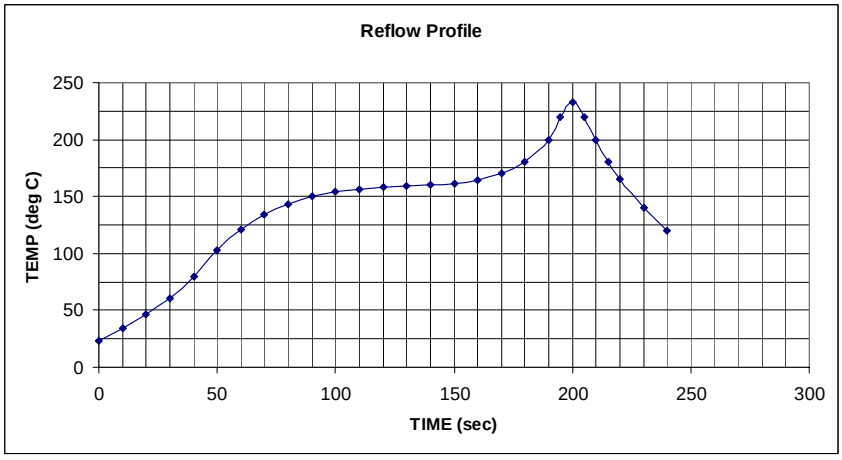
## PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

| Parameter | Qualification Conditions |
|---|---|
| Life Testing | High temperature bake at +85 ºC for 168 hours. |
| Temperature Cycling | MIL-STD 883, Method 1010:<br>-40 ºC to +85 ºC, 10 cycles, 10 minutes dwell at temperature extremes |
| Vibration | MIL-STD-202, Method 201A:<br>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:<br>1500 g's, 3 impacts each axis |
| Solder Heat Resistance and Reflow Condition | Peak temperature 240+/-5 ºC for 10 seconds.<br>Pre-heat: 150-170 ºC for 60 to 90 seconds.<br>Peak dwell: over 200 ºC for 23 to 26 seconds.<br>Handling: Class 1 per MIL-STD-1686<br>Reflow Profile is shown at the bottom of this table. |
| Lead Integrity | MIL-STD 883 Method 2004, Condition D<br>8 oz for 30 seconds. |
| Solderability | MIL-STD-883 Method 2003:<br>245 ºC +/-5 ºC; 95% coverage; no steam aging |
| Hermeticity | MIL-STD 883 Method 1014:<br>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. |

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