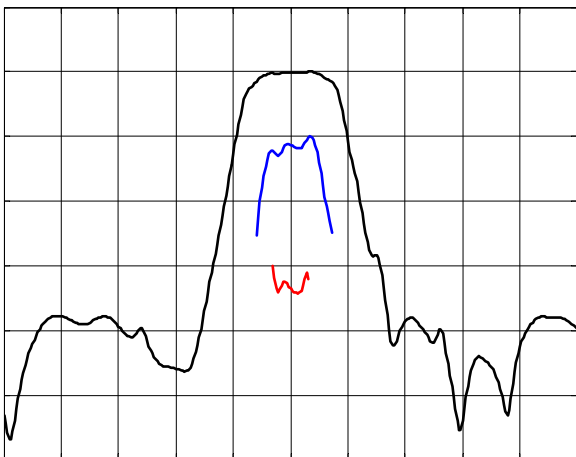
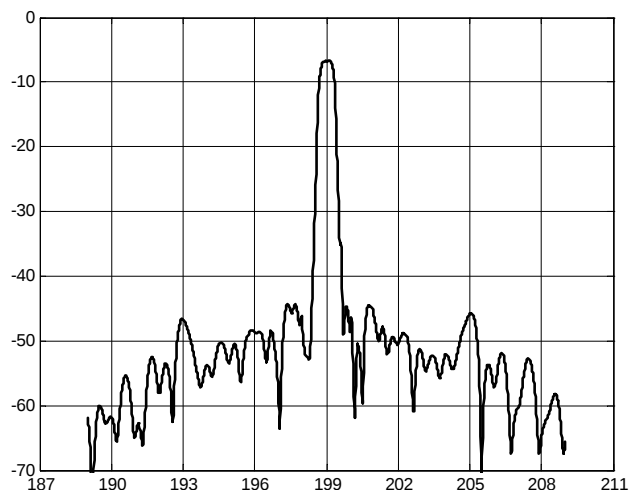




## TYPICAL PERFORMANCE



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

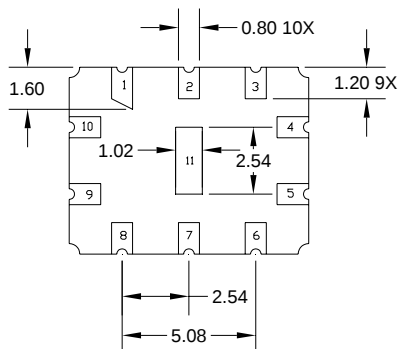
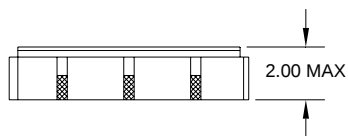
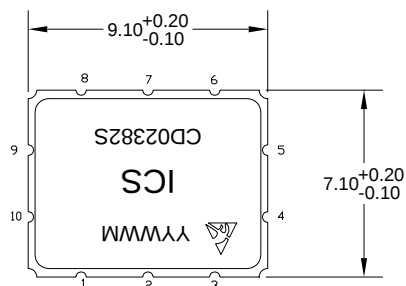
| Parameter                                          | Min          | Typ    | Max | Units  |
|----------------------------------------------------|--------------|--------|-----|--------|
| Normal Center Frequency $F_C$                      |              | 199.00 |     | MHz    |
| Insertion Loss at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

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

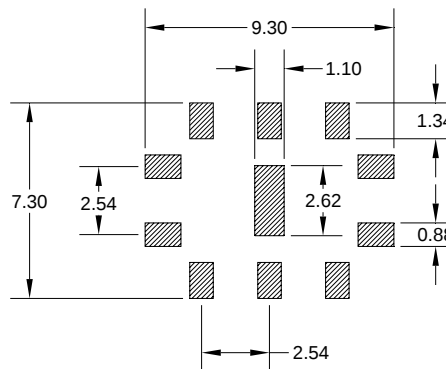


## PACKAGE AND SUGGESTED PCB FOOTPRINT

PACKAGE INFORMATION



SUGGESTED PCB FOOTPRINT

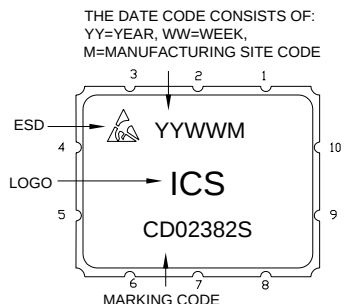


| PIN NO.         | DESCRIPTION   |
|-----------------|---------------|
| 3               | INPUT         |
| 2               | INPUT RETURN  |
| 8               | OUTPUT        |
| 7               | OUTPUT RETURN |
| 1,4,5,6,9,10,11 | GROUND        |

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

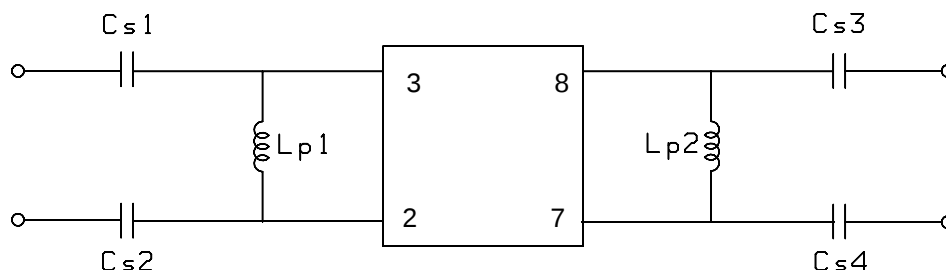
Package Material:  
Body:  $Al_2O_3$  ceramic  
Lid: Kovar, Ni plated  
Terminations: Au plating 0.5-1.0 um,  
over a 2-6 um Ni plating

## MARKING





### MATCHING CIRCUIT for Balanced, 200 $\Omega$ Impedance at Both Input and Output



Typical component values:       $Cs1 = Cs2 = 3.3 \text{ pF}$        $Cs3 = Cs4 = 4.7 \text{ pF}$   
                                          $Ls1 = 72 \text{ nH}$                        $Ls2 = 68 \text{ nH}$

Note:

Component values may change depending on PCB layout and parasitic.

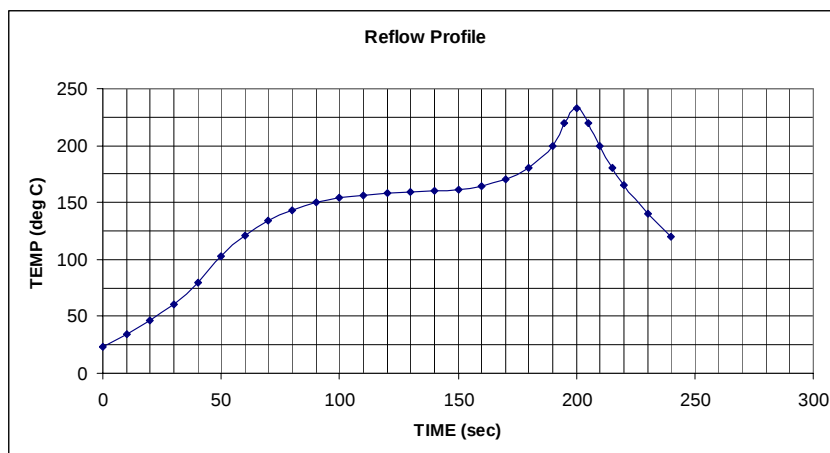
### MAXIMUM RATINGS

| Parameter                           | Min | Max | Units |
|-------------------------------------|-----|-----|-------|
| Operating Temperature Range         | -35 | +85 | °C    |
| Storage Temperature Range           | -45 | +85 | °C    |
| Maximum Input Power Level           |     | 20  | 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:<br>-40 °C to +85 °C, 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 °C for 10 seconds.<br>Pre-heat: 150-170 °C for 60 to 90 seconds.<br>Peak dwell: over 200 °C 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 °C +/-5 °C; 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.                                                                                                                              |



ISO 9001  
Registered