

CM6407

EMI Filters with ESD Protection for Data Line Applications

Product Description

The CM6407 is an 18-bump EMI filter with ESD protection device for data line application in a 0.4 mm pitch, 5 x 4 CSP form factor. It is fully compliant with IEC 61000-4-2 Level 4. The CM6407 is RoHS II compliant.

Features

- 18-Bump, 1.96 mm X 1.56 mm Footprint Chip Scale Package
- These Devices are Pb-Free and are RoHS Compliant



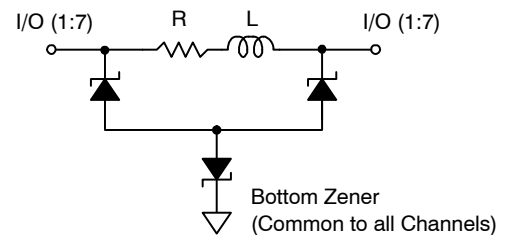
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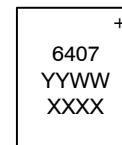


WLCSP18
CASE 567CG

ELECTRICAL SCHEMATIC



MARKING DIAGRAM



6407 = CM6407
YYWW = Date Code
XXXX = Last four digits of lot#

ORDERING INFORMATION

| Device | Package | Shipping† |
|--------|---------------------|------------------|
| CM6407 | CSP-18 (Pb-Free) | 5000/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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PACKAGE / PINOUT DIAGRAMS

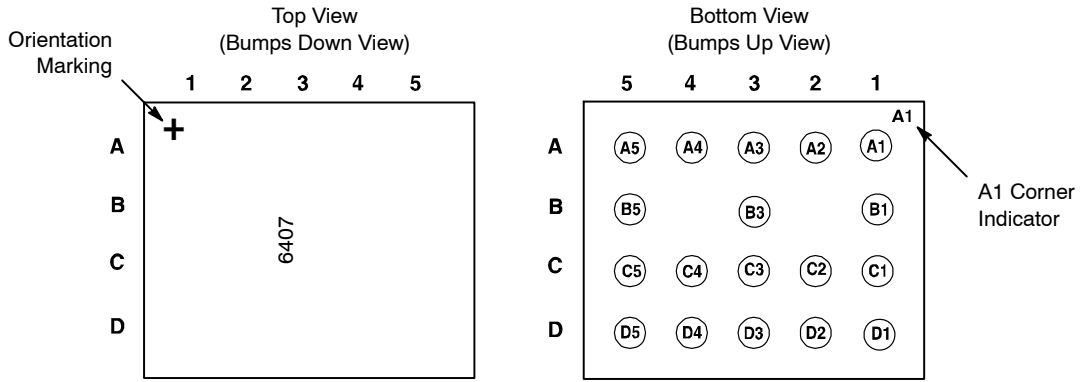


Table 1. PIN DESCRIPTIONS

| | | | | |
|-------------|-------------|----------|-------------|-------------|
| A5 = Line 1 | A4 = Line 2 | A3 = GND | A2 = Line 1 | A1 = Line 2 |
| B5 = Line 3 | | B3 = GND | | B1 = Line 3 |
| C5 = Line 4 | C4 = Line 5 | C3 = GND | C2 = Line 4 | C1 = Line 5 |
| D5 = Line 6 | D4 = Line 7 | D3 = GND | D2 = Line 6 | D1 = Line 7 |

ELECTRICAL SPECIFICATIONS AND CONDITIONS

Table 2. PARAMETERS AND OPERATING CONDITIONS

| Parameter | Rating | Units |
|---------------------------------------|-------------|-------|
| Storage Temperature Range | -55 to +150 | °C |
| Operating Temperature Range | -40 to +85 | °C |
| Power Dissipation at 70°C per Channel | 60 | mW |

Table 3. ELECTRICAL OPERATING CHARACTERISTICS (Note 1)

| Symbol | Parameter | Conditions | Min | Typ | Max | Units |
|------------|--|---|-----|------|-----|-------|
| R | Resistance | | 100 | 125 | 150 | Ω |
| L | Inductance | (Note 2) | | 35 | | nH |
| C | Capacitance per Channel | At 1 MHz, $V_{IN} = 0\text{ V}$ | 19 | 24 | 29 | pF |
| | | At 1 MHz, $V_{IN} = 2.5\text{ V}$ | | 15 | | pF |
| Att(5) | Passband Attenuation at 5 MHz | | | -7 | | dB |
| F_C | Cut-off Frequency | $Z_{SOURCE} = 50\ \Omega$, $Z_{LOAD} = 50\ \Omega$ | | 250 | | MHz |
| V_{BR} | Breakdown Voltage | $I_R = \pm 1\text{ mA}$ | ±6 | ±7.8 | ±10 | V |
| I_{LEAK} | Leakage Current per Channel | $V_{IN} = 3.0\text{ V}$ | | 10 | 100 | nA |
| V_{ESD} | ESD Peak Discharge Voltage Protection at All Pins: a) Contact Discharge per IEC 61000-4-2 standard b) Air Discharge per IEC 61000-4-2 standard | (Note 2) | ±15 | | | kV |
| | | | ±15 | | | |

- All parameters specified at $T_A = 25^\circ\text{C}$ unless otherwise noted.
- Standard IEC 61000-4-2 ($C_{Discharge} = 150\text{ pF}$, $R_{Discharge} = 330\ \Omega$).

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RF CHARACTERISTICS

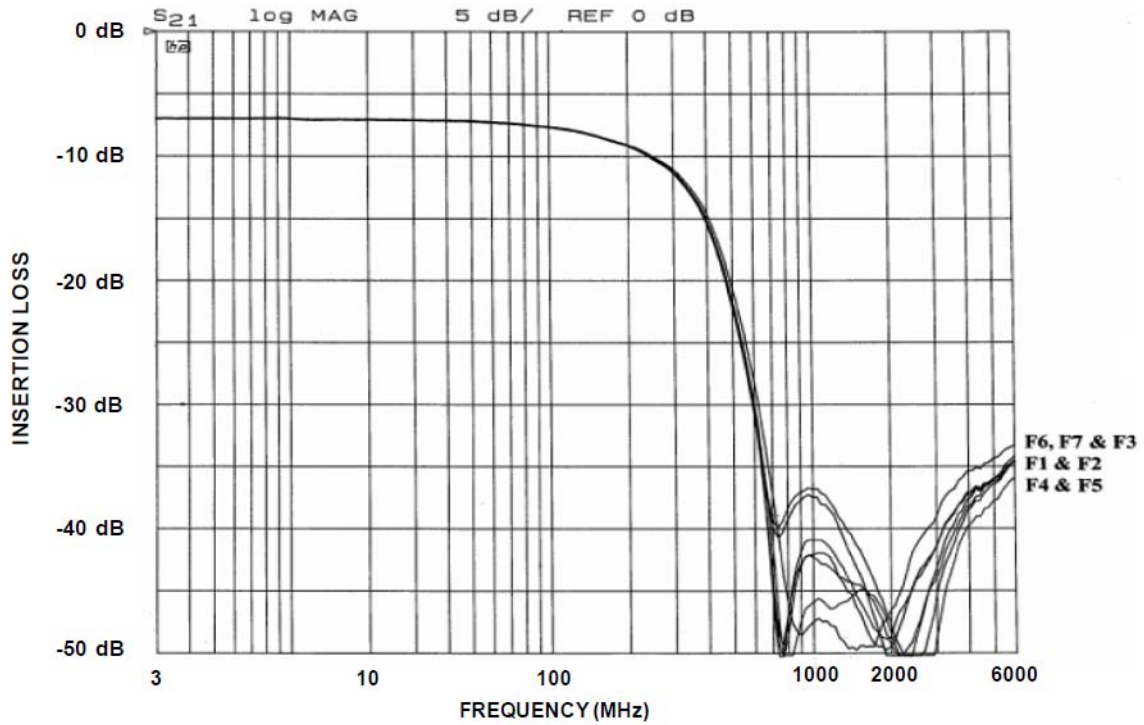
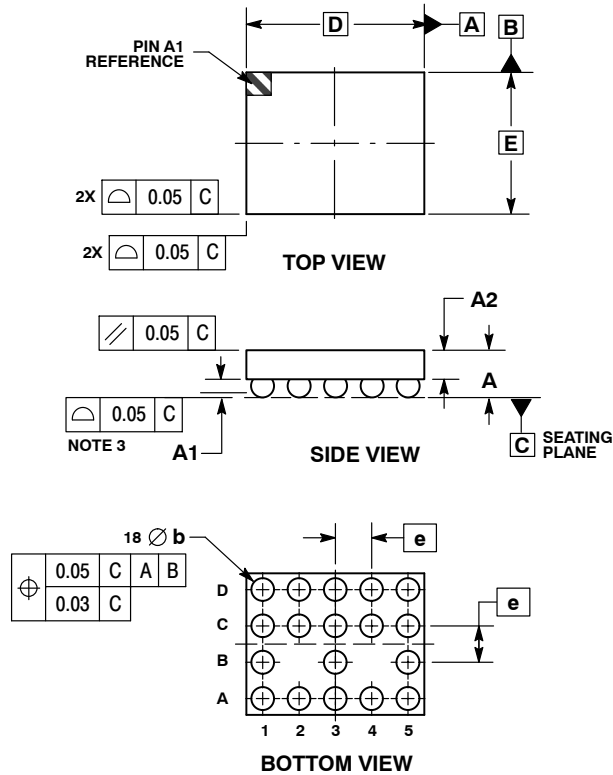


Figure 1. Typical Insertion Loss (Bias = 0 V, $T_A = 25^\circ\text{C}$, 50 Ω Environment)

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PACKAGE DIMENSIONS

WLCSP18, 1.96x1.56
CASE 567CG-01
ISSUE 0

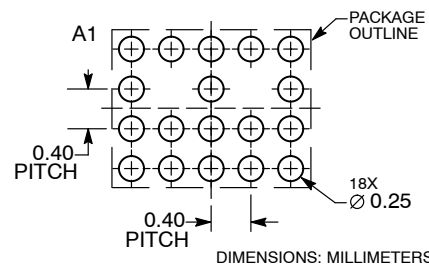


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. COPLANARITY APPLIES TO SPHERICAL CROWNS OF SOLDER BALLS.

| DIM | MILLIMETERS | |
|-----|-------------|------|
| | MIN | MAX |
| A | 0.57 | 0.63 |
| A1 | 0.17 | 0.24 |
| A2 | 0.41 | REF |
| b | 0.24 | 0.29 |
| D | 1.96 | BSC |
| E | 1.56 | BSC |
| e | 0.40 | BSC |

RECOMMENDED SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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