EMI Filters with ESD Protection for Data Line Applications

Product Description

The CM6400A is a 24–bump EMI filter with ESD protection device for data line application in a 0.4 mm pitch, 5 x 5 CSP form factor. It is fully compliant with IEC 61000–4–2 Level 4. The CM6400A is RoHS II compliant.

Features

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

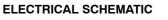


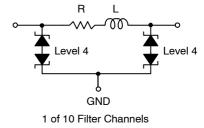
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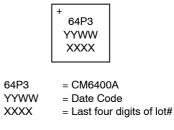


WLCSP24 CASE 567CK





MARKING DIAGRAM



ORDERING INFORMATION

| Device | Package | Shipping [†] | |
|---------|---------------------|-----------------------|--|
| CM6400A | CSP-24 (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.

CM6400A

PACKAGE / PINOUT DIAGRAMS

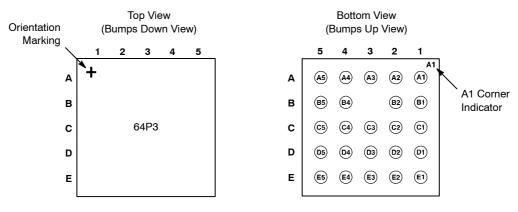


Table 1. PIN DESCRIPTIONS

| A5 = Line 1 | A4 = Line 2 | A3 = GND | A2 = Line 1 | A1 = Line 2 |
|-------------|--------------|----------|-------------|--------------|
| B5 = Line 3 | B4 = Line 4 | | B2 = Line 3 | B1 = Line 4 |
| C5 = Line 5 | C4 = Line 6 | C3 = GND | C2 = Line 5 | C1 = Line 6 |
| D5 = Line 7 | D4 = Line 8 | D3 = GND | D2 = Line 7 | D1 = Line 8 |
| E5 = Line 9 | E4 = Line 10 | E3 = GND | E2 = Line 9 | E1 = Line 10 |

ELECTRICAL SPECIFICATIONS AND CONDITIONS

Table 2. PARAMETERS AND OPERATING CONDITIONS

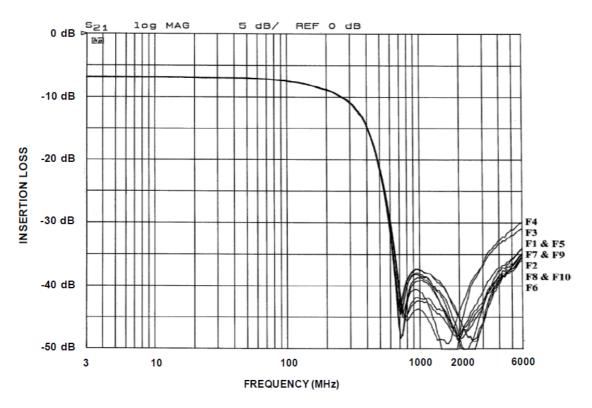
| Parameter | Rating | Units |
|---------------------------------------|-------------|-------|
| Storage Temperature Range | -55 to +150 | °C |
| Operating Temperature Range | -40 to +85 | °C |
| Power Dissipation at 70°C per Channel | 60 | mW |

Table 3. ELECTRICAL OPERATING CHARACTERISTICS (Note 1)

| Symbol | Parameter | Conditions | Min | Тур | Max | Units |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------|------|-----|-------|
| R | Resistance | | 100 | 125 | 150 | Ω |
| L | Inductance | (Note 2) | | 35 | | nH |
| С | Capacitance per Channel | At 1 MHz, V _{IN} = 0 V (Notes 2 and 3) | 19 | 24 | 29 | pF |
| | | At 1 MHz, V _{IN} = 2.5 V | | 15 | | pF |
| Att(5) | Passband Attenuation at 5 MHz | | | -7 | | dB |
| F _C | Cut-off Frequency | $Z_{\text{SOURCE}} = 50 \ \Omega, \ Z_{\text{LOAD}} = 50 \ \Omega$ | | 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 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 | (Notes 2, 3 and 4) | ±15 ±15 | | | kV |

1. All parameters specified at $T_A = 25^{\circ}C$ unless otherwise noted. 2. These parameters guaranteed by design. 3. These parameters guaranteed by characterization. 4. Standard IEC 61000–4–2 ($C_{Discharge} = 150 \text{ pF}, R_{Discharge} = 330 \Omega$).

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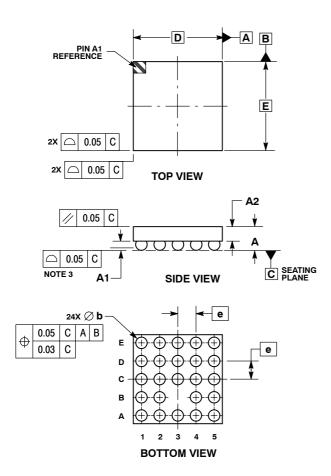
RF CHARACTERISTICS

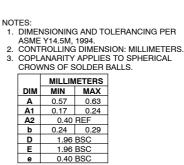
Figure 1. Typical Insertion Loss (Bias = 0 V, T_{A} = 25°C, 50 Ω Environment)

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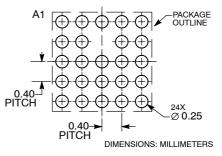
PACKAGE DIMENSIONS

WLCSP24, 1.96x1.96 CASE 567CK-01 ISSUE O





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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