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# **EMI Filter with ESD Protection for SIM Card Applications**

#### **Product Description**

The CM6320 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. The CM6320 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



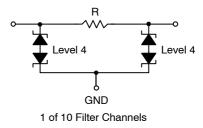
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http://onsemi.com

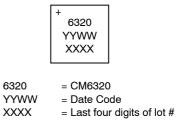


WLCSP24 CASE 567CK





#### MARKING DIAGRAM



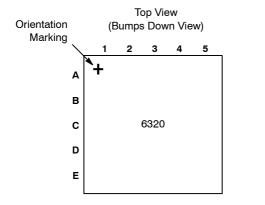
#### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>	
CM6320	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.

#### CM6320

#### PACKAGE / PINOUT DIAGRAMS



	(E	Bump	s Up '	View)		
	5	4	3	2	1	
A	(A5)	<b>A4</b>	<b>A3</b>	A2	A1 ◀ (A1)	- A1 Indicator
в	<b>B5</b>	<b>B4</b> )		<b>B2</b>	<b>B1</b>	
с	<b>C</b> 5	<b>C4</b>	<b>C</b> 3	<b>C2</b>	<b>C1</b>	
D	<b>D</b> 5	<b>D</b> 4	<b>D3</b>	<b>D2</b>	<b>D1</b>	
Е	(E5)	<b>E4</b>	<b>E3</b>	<b>E</b> 2	E1	

Bottom View

#### 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		56	70	84	Ω
С	Capacitance per Line	At 1 MHz, V <sub>IN</sub> = 0 V; (Note 2)			30	pF
V <sub>BR</sub>	Breakdown Voltage	$I_{R} = \pm 1 \text{ mA}$	±6	±7.8	±10	V
I <sub>LEAK</sub>	Leakage Current per Channel	V <sub>IN</sub> = 3.0 V		10	100	nA
V <sub>ESD</sub>	ESD Protection Peak Discharge Voltage a) Contact Discharge per IEC 61000-4-2 standard b) Air Discharge per IEC 61000-4-2 standard	(Notes 2 and 3)	±15 ±15			kV

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

#### CM6320

#### **RF CHARACTERISTICS**

## $\text{T}_{\text{A}}$ = 25°C, DC Bias = 0 V, 50 $\Omega$ Environment

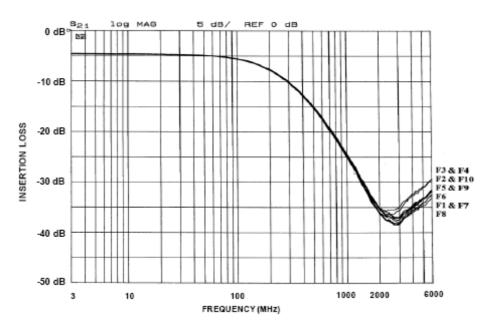
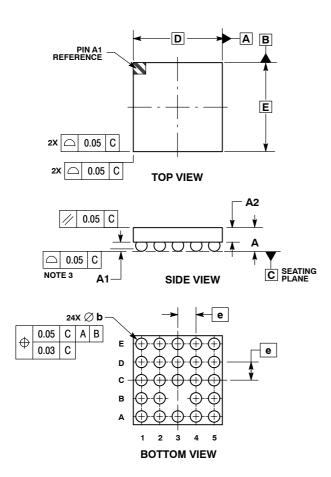


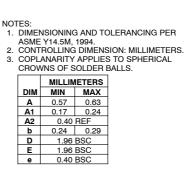
Figure 1. Insertion Loss (0 V Bias)

#### CM6320

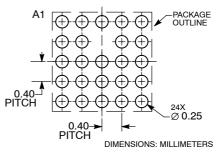
#### PACKAGE DIMENSIONS

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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