CM6305

EMI Filter with ESD Protection for SIM Card Applications

Product Description

The CM6305 is a 3 x 3, 8−bump EMI filter with ESD protection device for SIM card applications in a 0.4 mm pitch CSP form factor. It is fully compliant with IEC 61000−4−2. The CM6305 is also RoHS II compliant.

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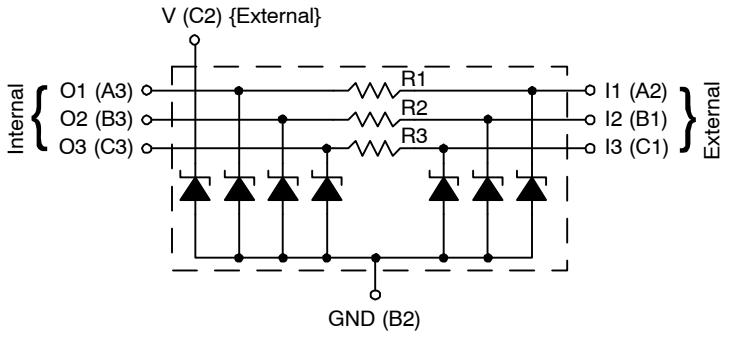
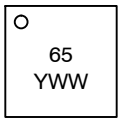
WLCSP8
CASE 567CE

ELECTRICAL SCHEMATIC

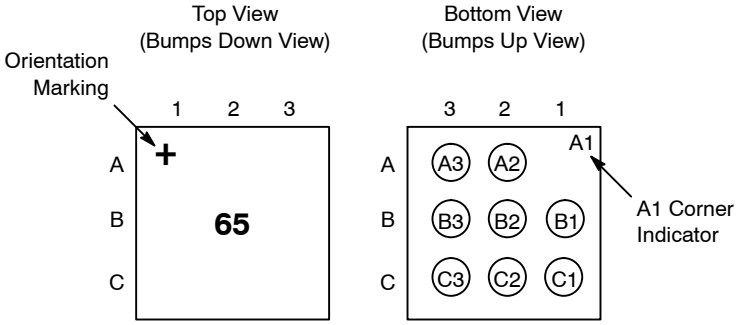


MARKING DIAGRAM



65 = CM6305
YWW = Date Code

PACKAGE / PINOUT DIAGRAMS



ORDERING INFORMATION

Device	Package	Shipping†
CM6305	WLCSP−8 (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.

Table 1. PIN DESCRIPTIONS

Pin	Description	Pin	Description
A2	Channel 1 External	A3	Channel 1 Internal
B1	Channel 2 External	B3	Channel 2 Internal
C1	Channel 3 External	C3	Channel 3 Internal
B2	GND	C2	V External

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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_1	Resistance		80	100	120	Ω
R_2	Resistance		37.6	47	56.4	Ω
R_3	Resistance		80	100	120	Ω
I_{LEAK}	Leakage Current per Channel	V_{IN} = 3.0 V		10	100	nA
C	Capacitance on Filter Channels 1, 2 and 3	At 1 MHz, V_{IN} = 0 V	8	10	12	pF
	Capacitance on Clamp Channel (pin C2)	At 1 MHz, V_{IN} = 0 V	8	10	12	pF
V_B	Breakdown Voltage (Positive)	I_R = 1 mA	6	7	9	V
V_{ESD}	ESD Protection Peak Discharge Voltage at A2, B1 and C1 pins a) Contact Discharge per IEC 61000−4−2 standard b) Air Discharge per IEC 61000−4−2 standard	(Note 2)	 ±8 ±15			kV
	ESD Protection Peak Discharge Voltage at C2 pin a) Contact Discharge per IEC 61000−4−2 standard b) Air Discharge per IEC 61000−4−2 standard	(Note 2)	 ±15 ±15			kV
	ESD Protection Peak Discharge Voltage at A3, B3 and C3 pins a) Contact Discharge per IEC 61000−4−2 standard b) Air Discharge per IEC 61000−4−2 standard	(Note 2)	 ±2 ±2			kV

1. All parameters specified at T_A = 25°C unless otherwise noted.
2. Standard IEC 61000−4−2 with $C_{Discharge}$ = 150 pF, $R_{Discharge}$ = 330 Ω.

Table 4. CSP TAPE AND REEL SPECIFICATIONS †

Part Number	Chip Size (mm)	Pocket Size (mm) B_0 X A_0 X K_0	Tape Width W	Reel Dia.	Qty Per Reel	P_0	P_1
CM6305	1.16 X 1.16 X 0.60	1.27 X 1.27 X 0.69	8 mm	178 mm (7″)	5000	4 mm	4 mm

†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.

RF CHARACTERISTICS

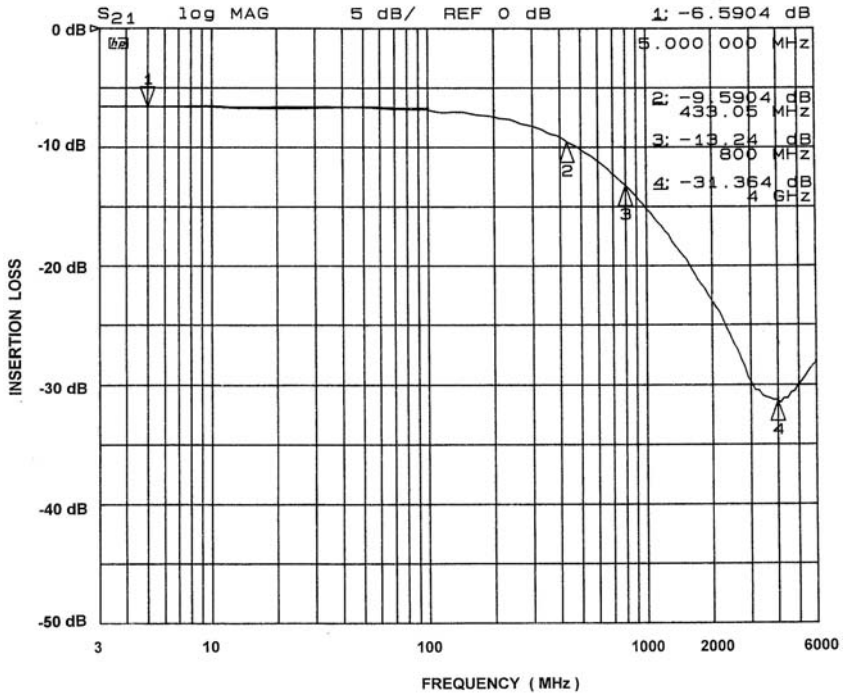

Figure 1. Insertion Loss, Filter 1 (pins A2, A3) and Filter 3 (pins C1, C3) (Bias = 0 V, T_A = 25°C)

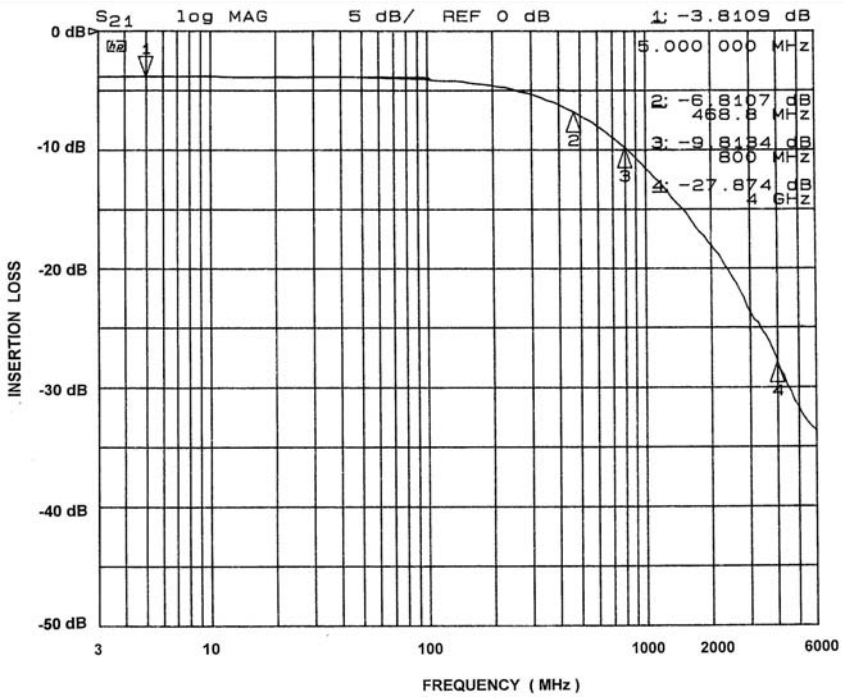

Figure 2. Insertion Loss, Filter 2 (pins B1, B3) (Bias = 0 V, T_A = 25°C)

WLCSP8, 1.16x1.16
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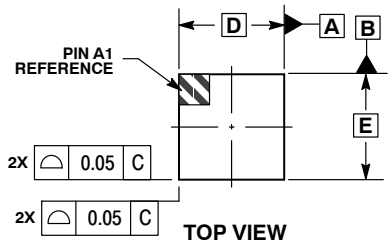
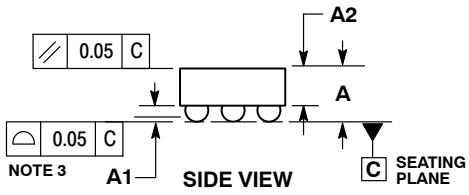
SCALE 4:1

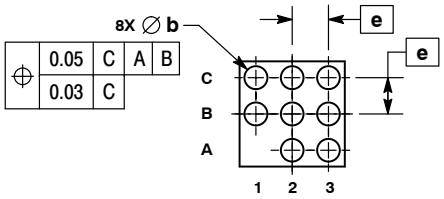
DATE 27 JUL 2010



TOP VIEW



SIDE VIEW

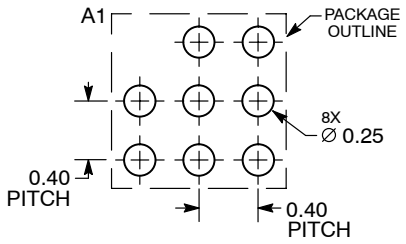


BOTTOM VIEW

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

	MILLIMETERS	
DIM	MIN	MAX
A	0.57	0.63
A1	0.17	0.24
A2	0.41 REF	
b	0.24	0.29
D	1.16 BSC	
E	1.16 BSC	
e	0.40 BSC	

RECOMMENDED SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

*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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DESCRIPTION:	**WLCSP8, 1.16X1.16**		**PAGE 1 OF 1**

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