



Elektrotechnik Karl-Heinz Mauz GmbH

EMY-4011G-SMD (Artikel-Nr. 200530)

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1	Name: Omnidirectional Electret Condenser Microphone																												
2	TYPE: <u>OB4013-G423-S04RAC-FD-SMD</u>																												
3	Electrical Specifications:																												
3.1	Sensitivity Range	-42±3dB RL=2.2KΩ Vs=2.0V(1KHz 0dB=1V/Par)																											
3.2	Impedance	Max. 2.2KΩ 1KHz (RL=2.2KΩ)																											
3.3	Frequency	20-16000 Hz																											
3.4	Current Consumption	Max.0.5mA																											
3.5	Operation Voltage Range	1.0V-10V																											
3.6	Max. Sound Pressure Level	110dB S.P.L																											
3.7	S/N Ratio	More than 58dB																											
3.8	Sensitivity Reduction	3V-2V Sensitivity Variation less than 3dB																											
3.9	Environmental Protection Regulation	ROHS																											
3.10 Typical Frequency Response Curve																													
<p style="text-align: center;">Frequency Response</p> <p style="text-align: center;">Microphone Response Tolerance Window</p> <table border="1"> <thead> <tr> <th>Frequency(Hz)</th> <th>Lower Limit(dB)</th> <th>Upper Limit(dB)</th> </tr> </thead> <tbody> <tr> <td>50</td> <td>-6</td> <td>+3</td> </tr> <tr> <td>100</td> <td>-3</td> <td>+3</td> </tr> <tr> <td>800</td> <td>-3</td> <td>+3</td> </tr> <tr> <td>1000</td> <td>0</td> <td>0</td> </tr> <tr> <td>1200</td> <td>-3</td> <td>+3</td> </tr> <tr> <td>3000</td> <td>-3</td> <td>+8</td> </tr> <tr> <td>5000</td> <td>-3</td> <td>+8</td> </tr> <tr> <td>10000</td> <td>-8</td> <td>+8</td> </tr> </tbody> </table>			Frequency(Hz)	Lower Limit(dB)	Upper Limit(dB)	50	-6	+3	100	-3	+3	800	-3	+3	1000	0	0	1200	-3	+3	3000	-3	+8	5000	-3	+8	10000	-8	+8
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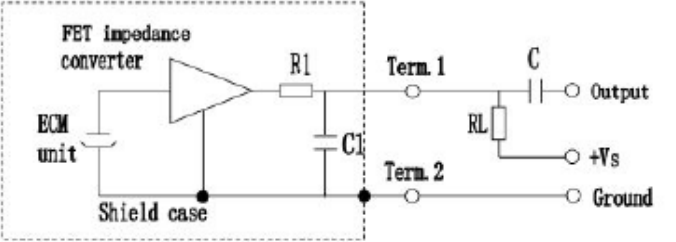
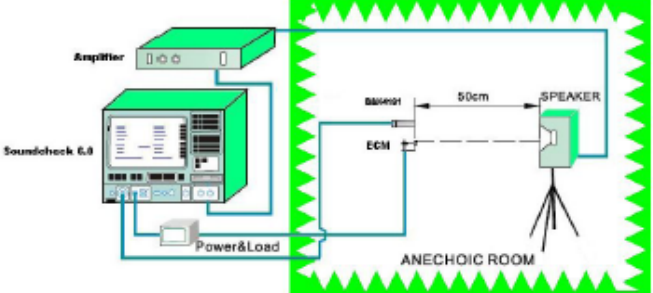
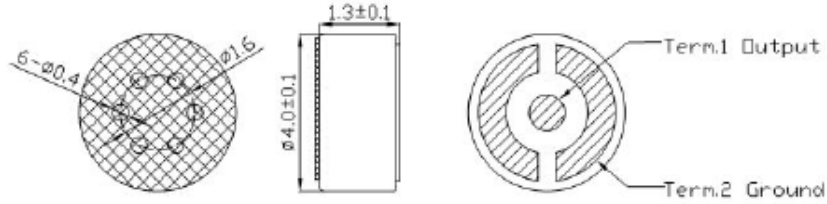
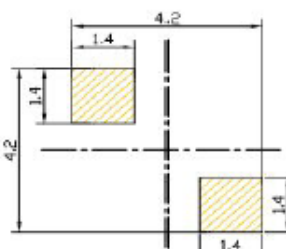
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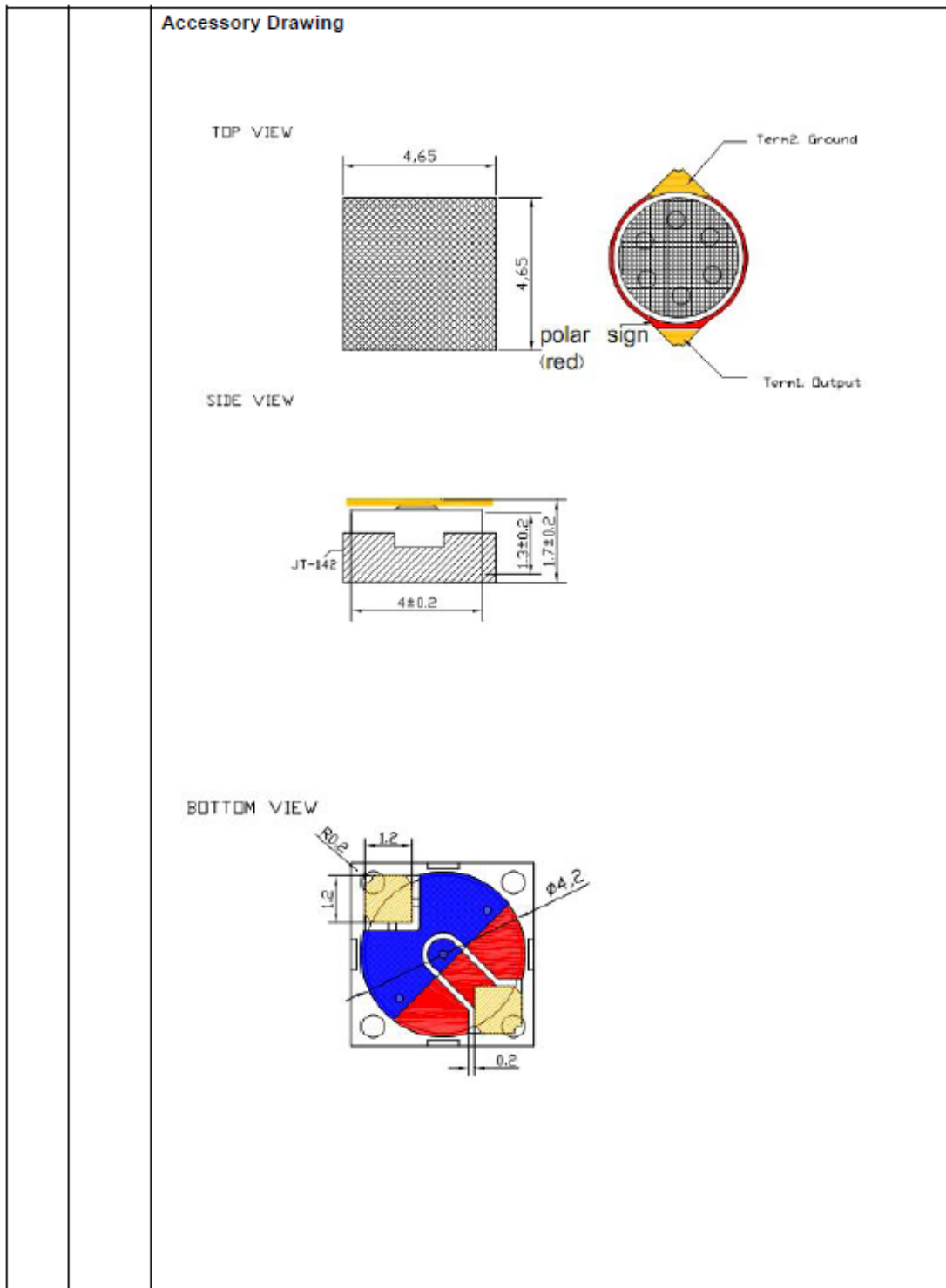
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	<p>3.11 Schematic Diagram:</p>  <table border="1" data-bbox="1101 604 1316 817"> <tr> <td>$R_L = 2.2K \Omega$</td> </tr> <tr> <td>$V_S = 2.0V$</td> </tr> <tr> <td>$C_1 = 10NF$</td> </tr> <tr> <td>$R_1 = 330 \Omega$</td> </tr> <tr> <td>$C = 1\mu F$</td> </tr> </table>	$R_L = 2.2K \Omega$	$V_S = 2.0V$	$C_1 = 10NF$	$R_1 = 330 \Omega$	$C = 1\mu F$
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	<p>3.12 Test Setup Drawing:</p> 					
<p>4</p>	<p>Mechanical Specifications:</p>					
<p>4.1</p>	<p>Appearance Drawing (mm)</p> 					
<p>4.2</p>	<p>Recommend assembly weld plate</p> 					

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5	Reliability Tests: After any following tests, the sensitivity of the microphone unit shall not change more than $\pm 3\text{dB}$ from initial value, and shall keep their initial operation and appearance.		
	5.1	Hi-Temp. Test	The microphone unit must be subjected to $+85^{\circ}\text{C}$ for 240 Hours, and expose to room temperature for 3 Hours.
	5.2	Low-Temp. Test	The microphone unit must be subjected to -40°C for 240Hours, and expose to room temperature for 3 Hours.
	5.3	Humidity .&Heat Test	The microphone unit must be subjected to $+60^{\circ}\text{C}$, 90% -95%RH-for 240 Hours, and expose to room temp for 3 Hours .
	5.4	Thermal Shocking Test	The microphone unit must be subjected to a environment from -40°C for30 minutes to the end of $+80^{\circ}\text{C}$ for 30 minutes, which shall be repeated 32 cycles and exposed to room temperature for 3 hours .
	5.5	Vibration Test	The microphone unit must be subjected to a procedure that after vibrating for two hours from each of the two directions with a frequency of 10-55Hz and a 1.52mm-high amplitude.
	5.6	Dropping Test	The microphone unit must be subjected to a procedure that after dropping to a slippery marble floor for 5 times from a 1-meter-high without package.
6	Environmental Condition:		
	6.1	Storage condition	$-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$ R.H. less than 90%
	6.2	Operation condition	$-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$ R.H. less than 90%

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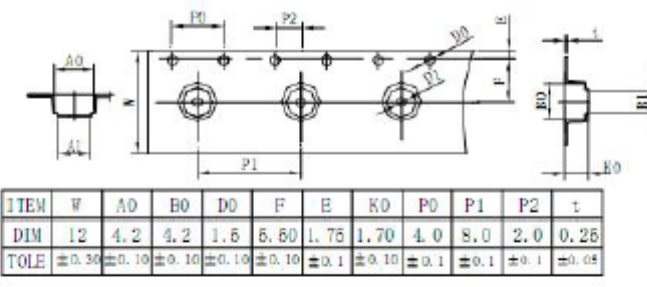
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<p>7</p>	<p>Tape details</p>	 <table border="1" data-bbox="683 761 1289 851"> <thead> <tr> <th>ITEM</th> <th>W</th> <th>A0</th> <th>B0</th> <th>D0</th> <th>F</th> <th>E</th> <th>K0</th> <th>P0</th> <th>P1</th> <th>P2</th> <th>t</th> </tr> </thead> <tbody> <tr> <td>DIM</td> <td>12</td> <td>4.2</td> <td>4.2</td> <td>1.5</td> <td>5.50</td> <td>1.75</td> <td>1.70</td> <td>4.0</td> <td>8.0</td> <td>2.0</td> <td>0.25</td> </tr> <tr> <td>TOLE</td> <td>±0.30</td> <td>±0.10</td> <td>±0.10</td> <td>±0.10</td> <td>±0.10</td> <td>±0.1</td> <td>±0.10</td> <td>±0.1</td> <td>±0.1</td> <td>±0.1</td> <td>±0.05</td> </tr> </tbody> </table>	ITEM	W	A0	B0	D0	F	E	K0	P0	P1	P2	t	DIM	12	4.2	4.2	1.5	5.50	1.75	1.70	4.0	8.0	2.0	0.25	TOLE	±0.30	±0.10	±0.10	±0.10	±0.10	±0.1	±0.10	±0.1	±0.1	±0.1	±0.05
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<p>8</p>	<p>Output Inspection standard</p>																																					
	<p>Output inspection standard is executed according to 《GB/T2828. 1-2003》.</p>																																					
<p>9</p>	<p>Reflow Process Condition The soldering profile depends on various parameters necessitating a set up for each application. The data here is given only for guidance on solder re-flow. There are four zones:</p> <ol style="list-style-type: none"> 1. Preheat Zone: This zone brings the temperature at a controlled rate, typically 1~2.5°C/s. 2. Equilibrium Zone: This zone brings the board to be a uniform temperature and also activates the flux. The duration in this zone (typically 2~3 minutes) will need to be adjusted to optimize the out gassing of the flux. 3. Re-flow Zone: The peak temperature should be high enough to achieve good wetting but not so high as to cause component discoloration or damage (255°C for maximum 10 seconds). Excessive soldering time can lead to inter-metallic growth which can result in a brittle joint. 4. Cooling Zone: The cooling rate should be fast, to keep the solder grains small which will give a longer lasting joint. Typically will be 2~5°C/s. 5. Sensitivity change should within ±3dB after re-flow process and at room temperature for 30 minutes at least. 