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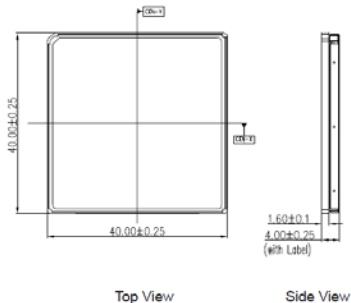
Thank you for purchasing HUAWEI ME909Tu-565 LTE LGA Module (hereinafter referred to as the ME909Tu-565)

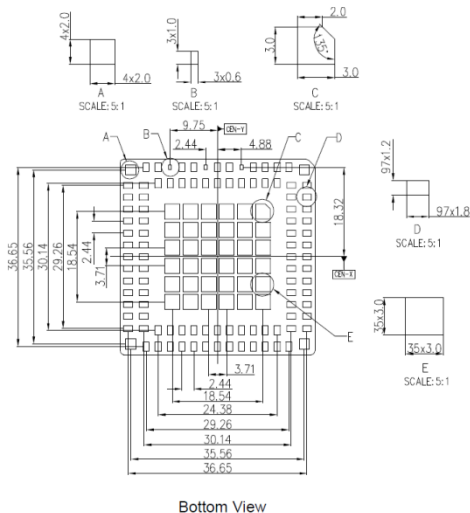
Note:

- This manual briefly describes the preparation, the process for PCB Design, Assembly and safety precautions.
- You are recommended to read the manual before using the ME909Tu-565.

Getting to Know the ME909Tu-565

- The package of the LGA module is 140 pin LGA with a dimension of 40 mm × 40 mm × 4 mm. It is applied to the user interface board, and can be used as a wireless terminal in a network environment.



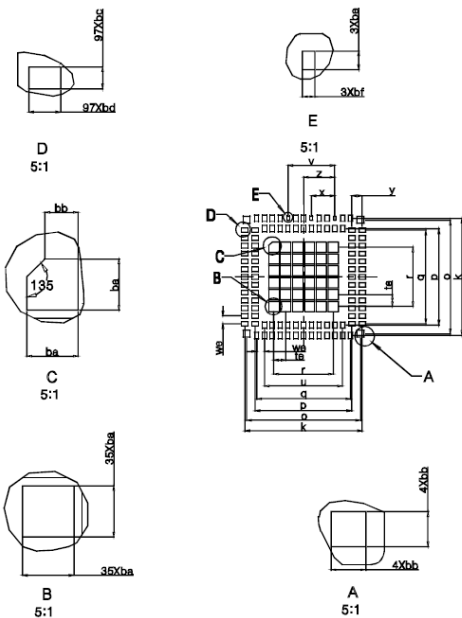


PCB Design

PCB Pad Design

To achieve assembly yields and solder joints of high reliability, it is recommended that the PCB pad size be designed as follows: the sizes of the solder pads on customers' PCBs are the same as those of the module's solder pads for the high production efficiency and high reliability of

solder joints. For details, see the following figure:



Top view (PCB pad is recommended)		
No.	mm	mil
k	36.65	1442.8
o	35.56	1400
p	30.14	1186.8
q	29.26	1152
we	2.44	96
te	3.71	146

Top view (PCB pad is recommended)		
No.	mm	mil
r	18.54	730
u	24.38	960
y	3.25	128
x	7.32	288
z	9.76	384
v	14.64	576
ba	3.05	120
bb	2.03	80
bc	1.22	48
bd	1.83	72
be	1.02	40
bf	0.61	24

Requirements on PCB Layout

- The thickness of PCB is more than 1.0 mm (1.2 mm recommended) to reduce the deformation caused by high temperature welding.
- The minimum distance between the LGA module and the PCB edge is 0.5 mm. Other devices must be located more than 1 mm away from the LGA module (more than 3 mm recommended if rework is considered).
- When the PCB layout is double sided, it is recommended that the LGA module be placed on the second side for assembly, which can avoid that open joint, module dropping and module interior defect caused by the module's gravity during reflow.

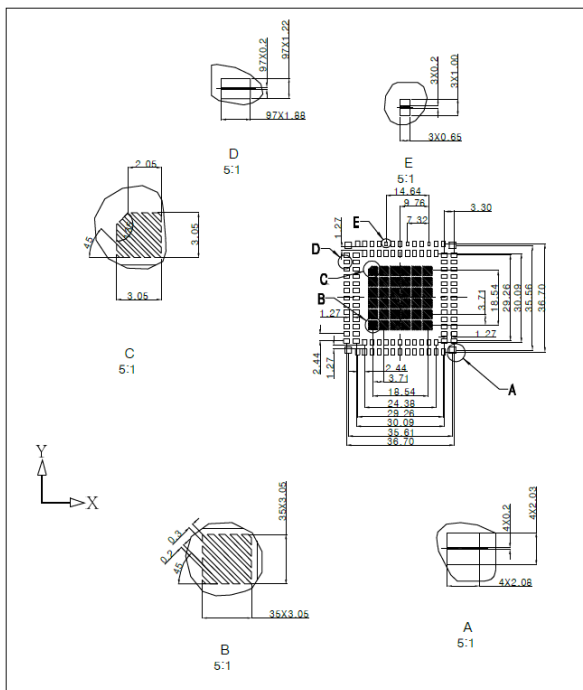
Design of Solder Mask

- The PCB pad design can be solder mask defined (SMD), or non-solder mask defined (NSMD). NSMD is recommended. In addition, the solder mask of the NSMD pad design is larger than the pad so the reliability of the solder joint can be improved.
- The solder mask must be 100 μm to 150 μm larger than the pad, that is, the single side of the solder mask must be 50 μm to 75 μm larger than the pad. The specific size depends on the processing capability of the PCB manufacturer.

Assembly

Stencil Design

It is recommended that the stencil for the LGA module be 0.15 mm in thickness. For the stencil design, see the following figure:

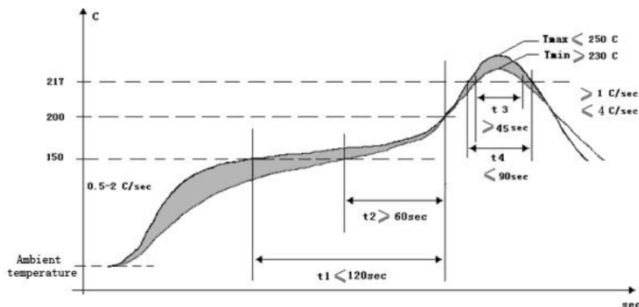


Item	Description	Figure
A	Elongate the stencil opening 0.05 mm with the direction reverse the center of the module and add an isolation bridge with 0.2 mm width at the X axis direction.	
B&C	0.3 mm width stencil opening and 0.2 mm space to divide the pad with the angle of 45.	
D	Elongate the stencil opening 0.05 mm with the reverse direction for the adjacent pad, but will not reduce the air gap, and add an isolation bridge with 0.2 mm width at the X axis direction.	
E	Elongate the stencil opening 0.05 mm with the X+ direction and add an isolation bridge with 0.2 mm width at the axis direction.	

Reflow Profile

For the soldering temperature of the LGA module, see the following figure.

Reflow profile



Reflow parameters

Temperature Zone	Time	Key Parameter
Preheat zone (40°C to 150°C)	60s to 120s	Heating rate: 0.5°C/s to 2°C/s
Soak zone (150°C to 200°C)	(t_1-t_2): 60s to 120s	Heating rate: < 1.0°C/s
Reflow zone (> 217°C)	(t_3-t_4): 30s to 90s	Peak reflow temperature: 230°C to 250°C
Cooling zone	Cooling rate: 1°C/s $\leq$ Slope $\leq$ 4°C/s	