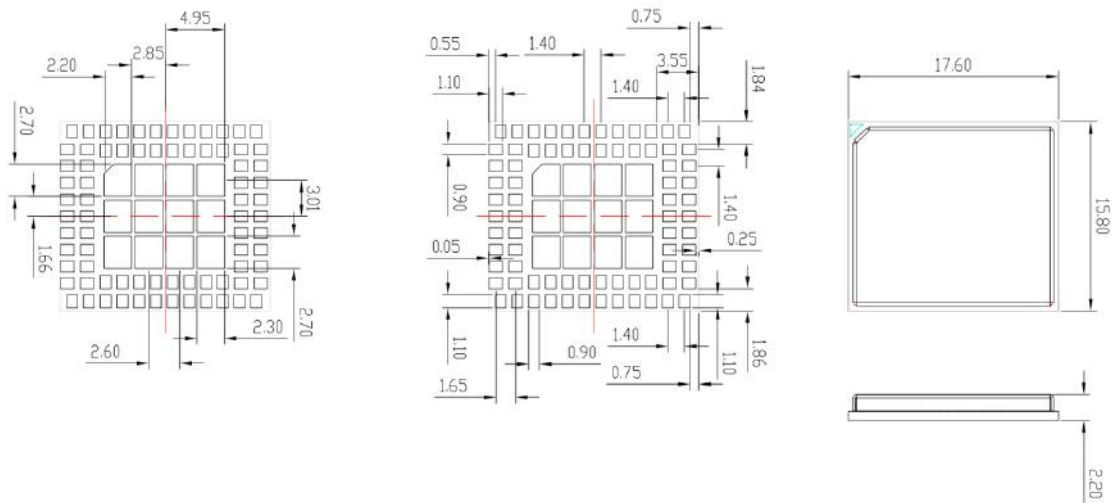


### Mechanical dimensions of Module:



L206HL top view and side view (mm)

## ELECTRICAL CHARACTERISTICS

### Absolute Maximum Ratings

The following table shows the absolute maximum state in abnormal situation, more than the limit value will likely result in permanent damage to the module.

#### Absolute Maximum Ratings

Parameter	Min	Typ.	Max	Unit
VBAT	3.3	3.8	4.4	V
Peak current	-0.3	-	3	A
Digital signal input voltage	-0.3	-	3.1	V
Analog input voltage	-0.3	-	3.1	V
Working temperature	-40	25	+85	°C
Storage temperature	-45	25	+90	°C

### Digital Interface Characteristics

#### Digital Interface Characteristics

Parameter	Description	Min	Typ.	Max	Unit
VIH	Input high level	2.1	-	3.1	V
VIL	Input high level	0	-	0.7	V
VOH	Input high level	2.5	-	3.1	V
VOL	Input high level	0	-	0.3	V
VIH	Input high level	2.1	-	3.1	V

\* Apply to the GPIO, I2C, UART, PCM digital interface, etc.

## VSIM Characteristics

SIM card interface characteristics

Parameter	Description	Min	Typ.	Max	Unit
VO	Output voltage	1.65	1.8	1.95	V
		2.8	3.0	3.2	V
IO	Output current	-	-	60	mA

## Current Consumption

Current consumption

Parameter	Conditions	Min	Typ.	Max	Unit
Bottom current	Shutdown mode	--	0.16	--	mA
Working current	Sleep mode	--	1	--	mA
	Standby mode	--	10.6	--	mA
	Voice (maximum power)	--	280	--	mA
	Data transfer modeGPRS(1Rx,4Tx)	--	493	--	mA
Peak current	Data transfer modeGPRS(3Rx,2Tx)	--	386	--	mA
	Maximum power burst current	--	--	2.0	A
	Data transfer modeGPRS(3Rx,2Tx)	--	413	--	mA

## ESD

In the use of the module, due to the human body static electricity, electric charge and friction between the two kinds of static electricity generated by various means of discharge to the module, may cause some damage, so ESD protection must pay attention, whether in the development, production assembly, testing process, especially in product design, should be taken to prevent ESD protection measures. Such as circuit design in the interface or vulnerable to the ESD point to increase the ESD protection, the production of anti-static gloves, etc.. Because the module is not specifically designed for electrostatic discharge protection, so in the production, assembly and operation module must pay attention to the electrostatic protection. The performance of the module test parameters in the following table:

ESD performance parameters (temperature: 25, humidity: 45%)

ESD performance parameters

PIN	Contact discharge	Air discharge
VBAT	$\pm 5KV$	$\pm 10KV$
GND	$\pm 5KV$	$\pm 10KV$
RXD, TXD	$\pm 1KV$	$\pm 6KV$
RF_ANT	$\pm 5KV$	$\pm 10KV$
MIC_P/N	$\pm 2KV$	$\pm 6KV$
RCV_P/N		
PWRKEY	$\pm 3KV$	$\pm 6KV$
RESET_N		

## RF performance

- RF output power

Following table lists the conducted output power of modules, compliant with 3GPP TS 05.05 SPEC.

EGSM900 and GSM850 conducted output power

PCL	Output power(dBm)	Tolerance (dB) for conditions	
		Normal	Extreme
--	Nominal	Normal	Extreme
5	32.5	$\pm 0.4$	$\pm 2$
6	30.8	$\pm 1$	$\pm 2$
7	29	$\pm 1$	$\pm 2$
8	27	$\pm 1$	$\pm 2$
9	25	$\pm 1$	$\pm 2$
10	23	$\pm 1$	$\pm 2$
11	21	$\pm 1$	$\pm 2$

12	19	$\pm 1$	$\pm 2$
13	17	$\pm 1$	$\pm 2$
14	15	$\pm 1$	$\pm 2$
15	13	$\pm 1.5$	$\pm 2$
16	11	$\pm 1.5$	$\pm 2$
17	9	$\pm 1.5$	$\pm 2$
18	7	$\pm 1.5$	$\pm 5$

DCS1800 and PCS1900 conducted output power

PCL	Output power(dBm)	Tolerance (dB) for conditions	
		Normal	Extreme
--	Nominal	Normal	Extreme
0	29.5	$\pm 0.4$	$\pm 2$
1	27.5	$\pm 1$	$\pm 2$
2	26	$\pm 1$	$\pm 2$
3	24	$\pm 1$	$\pm 2$
4	22	$\pm 1$	$\pm 2$
5	20	$\pm 1$	$\pm 2$
6	18	$\pm 1$	$\pm 2$
7	16	$\pm 1$	$\pm 2$
8	14	$\pm 1$	$\pm 2$
9	12	$\pm 1.5$	$\pm 2$
10	10	$\pm 1.5$	$\pm 2$
11	8	$\pm 1.5$	$\pm 2$
12	6	$\pm 1.5$	$\pm 2$
13	4	$\pm 1.5$	$\pm 2$
14	2	$\pm 1.5$	$\pm 5$
15	0	$\pm 2$	$\pm 5$

- Module conduction receiver sensitivity

The following table lists the module's conduction reception sensitivity and is tested under static conditions.

Conduction sensitivity

Band	Receiving sensitivity (Typ.)
GSM850	$\cong -108\text{dBm}$
EGSM900	$\cong -108\text{dBm}$
DCS1800	$\cong -108\text{dBm}$

PCS1900	$\cong -108\text{dBm}$
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- Module frequency band

The following table lists the module's working frequency bands, compliant with the TS 3GPP 5.05 specification.

Module frequency band

<b>Band</b>	<b>Receiving sensitivity (Typ)</b>	<b>Receiving sensitivity (Max)</b>
GSM850	869 ~ 894MHz	824 ~ 849MHz
EGSM900	925 ~ 960MHz	880 ~ 915MHz
DCS1800	1805 ~ 1880MHz	1710 ~ 1785MHz
PCS1800	1930 ~ 1990MHz	1850 ~ 1910MHz

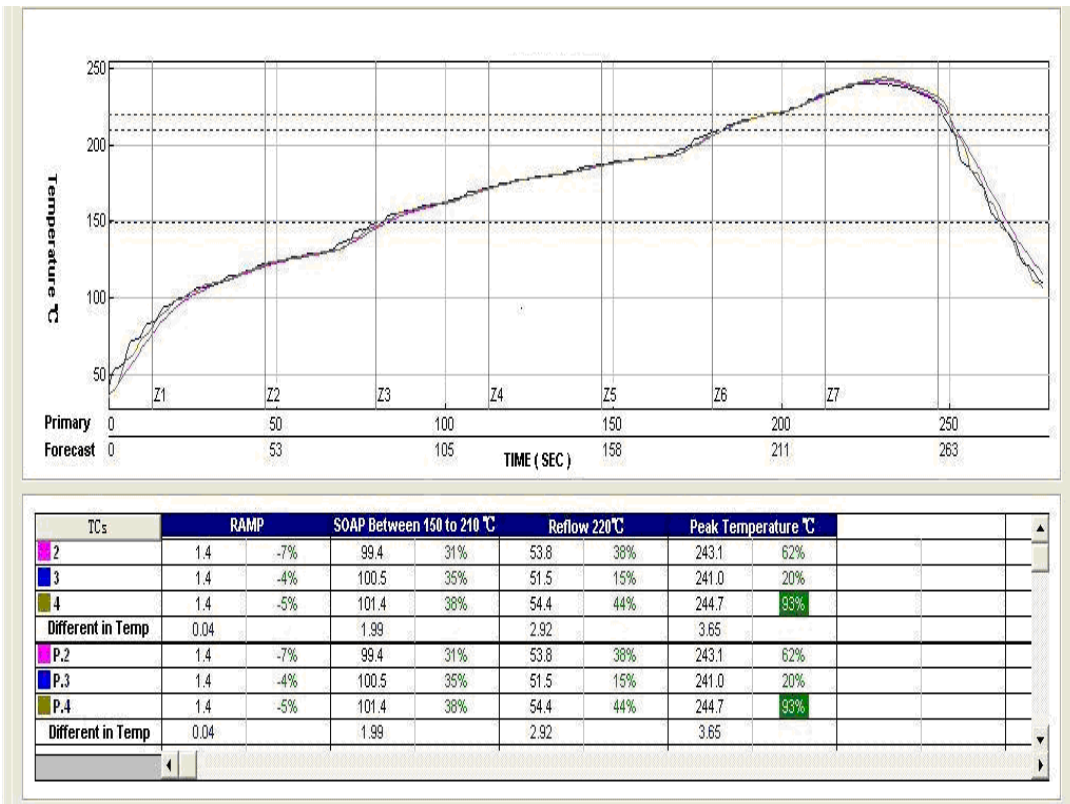
# MANUFACTURING

L206HL top and bottom view



L206HL top and bottom view

## Soldering



Recommend reflow temperature profile

## The Moisture Sensitivity Level (MSL)

L206HL module complies with the humidity level 3. At a temperature of <30 degrees and relative humidity of <60% of the environmental conditions, dry pack to perform J-STD-020C specification according to IPC / JEDEC standard. At a temperature of <40 degrees and a relative humidity of <90% of the environmental conditions, in the case of unopened shelf life of at least six months. After unpacking, Table29 shows the module shelf life at different times corresponding to the level of humidity.

Moisture sensitivity level and floor life

<b>TheMoistureSensitivityLevel (MSL)</b>	<b>Floor Life(out of bag) at factory ambient <math>\leq +30</math> /60%RH</b>
1 RH °C condition	Unlimited at $\leq +30$ /85%
2	1 Year
2a	4 weeks
3	168 hours
4	72 hours
5	48 hours
5a	24 hours
6	Mandatory bake before use. After bake,it must be reflowed within the time limit specified on the label.

After unpacking,<30 degrees in temperature and relative humidity <60% environmental conditions, 168 hours in the SMT patch. If not meet the above conditions need to be baked.

NOTES: For product handling, storage, processing, IPC / JEDEC J-STD-020C must be followed

## Baking Requirements

Due to the humidity sensitive characteristics of the L206HL module, the L206HL is a vacuum packaging, which can be stored for 6 months without damage to the package, and the ambient temperature is less than 40 C and the relative humidity is less than 90%. To meet one of

the following conditions, the process of reflow soldering should be performed before the full bake, or the module may cause permanent damage to the process.

- 1、 Vacuum packing damage or leakage
- 2、 The module is exposed in the air for 168 hours or more
- 3、 The module is exposed in air for 168 hours, not meet the temperature <30 degrees and relative humidity of the environment conditions <60%

Baking requirements

Baking temperature	Humidity	Baking time
40° C±5° C	<5%	192 Hours
120° C±5° C	<5%	4 Hours

## RELATED DOCUMENTS

Related documents

NO.	Documents	Note
[1]	AT_DOCUMENT_R1.04	
[2]	ITU-T Draft new recommendation V.25ter:	Serial asynchronous automatic dialing and control
[3]	GSM 07.07:	Digital cellular telecommunications (Phase 2+); AT command set for GSM Mobile Equipment (ME)
[4]	GSM 07.10:	Support GSM 07.10 multiplexing protocol
[5]	GSM 07.05:	Digital cellular telecommunications (Phase 2+); Use of Data Terminal Equipment – Data Circuit terminating Equipment (DTE – DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)
[6]	GSM 11.14:	Digital cellular telecommunications system (Phase 2+); Specification of the SIM Application Toolkit for the Subscriber Identity Module – Mobile Equipment (SIM – ME) interface
[7]	GSM 11.11:	Digital cellular telecommunications system (Phase 2+); Specification of the Subscriber Identity Module – Mobile Equipment (SIM – ME) interface