

### Description

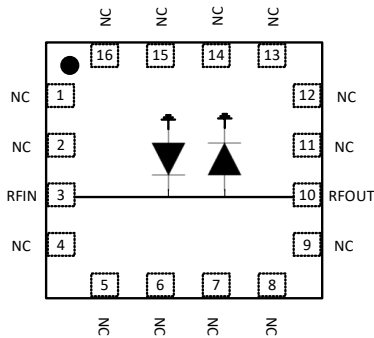
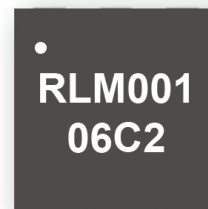
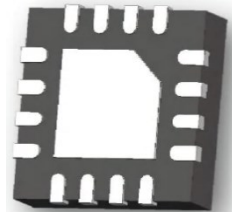
The RLM00106C2 is a low-loss, low-distortion and high power limiter. This device is designed for 100MHz - 6000MHz RF receiver applications.

The RLM00106C2 is fabricated with advanced GaAs technology, achieves low insertion loss , high input power(20W), over a wide range of operating frequency from 100MHz up to 6000MHz.

The RLM00106C2 is available in RoHS-Compliant, 3.0mm x 3.0mm x 0.75mm package.

### Features

- Frequency bands: 100-6000 MHz
- Low insertion loss: 0.15dB@10MHz-500MHz  
0.2dB@500MHz-1GHz  
0.25dB@1GHz-2GHz  
0.3dB@2GHz-3GHz  
0.5dB@3GHz-4GHz
- 1dB-compression point=+14dBm
- Max input power : 43Bm@CW
- QFN: 3.0mmX3.0mmX 0.75mm, MSL3.



### RF Electrical Specifications (Unless otherwise specified: T<sub>CASE</sub> = +25 °C.)

| Parameter                            |                                    | Conditions                                                                      | Min. | Typ.                                      | Max.                                      | Units |
|--------------------------------------|------------------------------------|---------------------------------------------------------------------------------|------|-------------------------------------------|-------------------------------------------|-------|
| <b>Ac Electrical Characteristics</b> |                                    |                                                                                 |      |                                           |                                           |       |
| Freq                                 | Frequency Range                    |                                                                                 | 0.1  |                                           | 6.0                                       | GHz   |
| IL                                   | Insertion loss                     | 10MHz-500MHz<br>500MHz-1GHz<br>1GHz-2GHz<br>2GHz-3GHz<br>3GHz-4GHz<br>4GHz-5GHz |      | 0.15<br>0.2<br>0.25<br>0.3<br>0.5<br>0.75 | 0.25<br>0.3<br>0.35<br>0.4<br>0.6<br>0.85 | dB    |
| RL                                   | return loss                        | 10MHz-500MHz<br>500MHz-1GHz<br>1GHz-2GHz<br>2GHz-3GHz<br>3GHz-4GHz<br>4GHz-5GHz |      | 31<br>30<br>31<br>23<br>15<br>10          | 37<br>31<br>32<br>30<br>20<br>14          | dB    |
| Pmax                                 | Max input power                    | CW                                                                              |      | 43                                        |                                           | dBm   |
| 1dB                                  | 1dB compression                    | f=1000MHz                                                                       |      | 14                                        |                                           | dBm   |
| IIP3                                 | Enter third-order breakpoint power | f=600MHz                                                                        |      | 52                                        |                                           | dBm   |
| Plim                                 | Limited output power               | f=2000MHz                                                                       |      | 14                                        |                                           | dBm   |
| TI                                   | Carrier lifetime                   |                                                                                 |      | 20                                        |                                           | ns    |

### Yantel Corporation

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For detailed performance specs & shopping online see Yantel web site : [www.yantel-corp.com](http://www.yantel-corp.com)

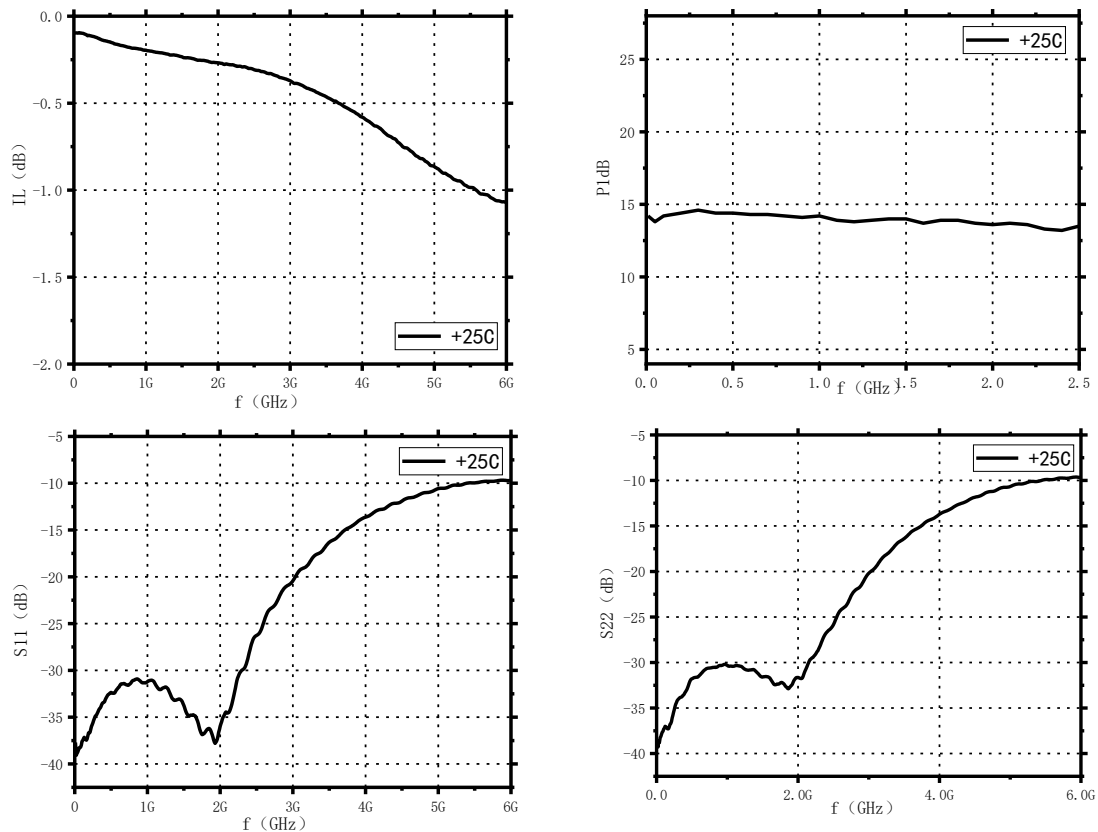
### Absolute Maximum Ratings

| Parameter                  | Symbol        | Values |      |      | Units |
|----------------------------|---------------|--------|------|------|-------|
|                            |               | Min.   | Typ. | Max. |       |
| Reverse Voltage            | $V_{CC}$      | -0.3   | -    | 50   | V     |
| RF input power             | $P_{IN}$      | -      | -    | 44   | dBm   |
| Package thermal resistance | $\theta_{JA}$ | -      | 45   |      | °C/W  |
| Junction temperature       | $T_J$         | -      | -    | 150  | °C    |
| Storage temperature range  | $T_{STG}$     | -55    | -    | +125 | °C    |
| Ambient temperature range  | $T_{amb}$     | -40    | -    | +85  | °C    |
| Solder temperature(10s)    |               | -      | 260  | -    | °C    |
| ESD(HBM)                   | VESD          |        | 3000 |      | V     |
| ESD(CDM)                   |               |        | 2000 |      | V     |

### Application Information

The RLM00106C2 should be placed close to the antenna. Use 50-ohm micro-strip lines to connect RF INPUT and RF OUTPUT. Proper grounding of the GND pins is very important.

### Typical Electrical Graphs



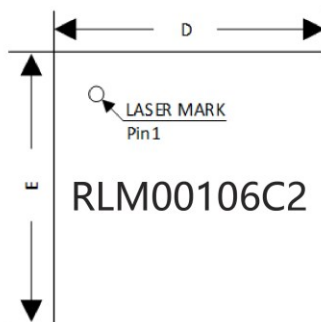
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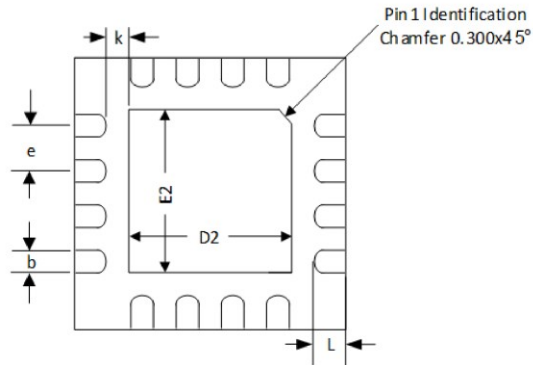
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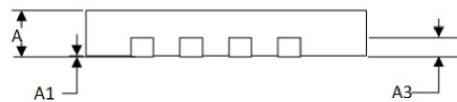
### Package Information



TOP VIEW



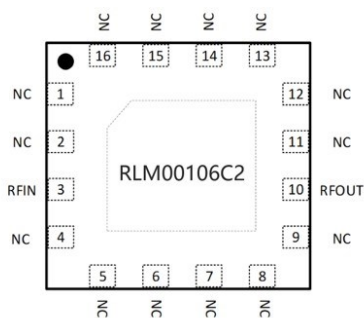
BOTTOM VIEW



SIDE VIEW

| Ref. | Min     | Typ  | Max  | Ref. | Min     | Typ  | Max  |
|------|---------|------|------|------|---------|------|------|
| A    | 0.70    | 0.75 | 0.80 | E2   | 1.80    | 1.90 | 2.00 |
| A1   | 0.00    | 0.02 | 0.05 | e    | 0.5 BSC |      |      |
| A3   | 0.20REF |      |      | L    | 0.25    | 0.30 | 0.35 |
| b    | 0.20    | 0.25 | 0.30 | K    | 0.15    | 0.25 | 0.35 |
| D    | 2.90    | 3.00 | 3.10 |      |         |      |      |
| D2   | 1.80    | 1.90 | 2.00 |      |         |      |      |
| E    | 2.90    | 3.00 | 3.10 |      |         |      |      |

### Pin Configuration and Marking



| Pin                               | Name  | Description   |
|-----------------------------------|-------|---------------|
| 0                                 | GND   | Ground        |
| 3                                 | RFIN  | RF Input      |
| 10                                | RFOUT | RF Output     |
| 1,2,4,5,6,7,8,9,11,12,13,14,15,16 | NC    | No Connection |

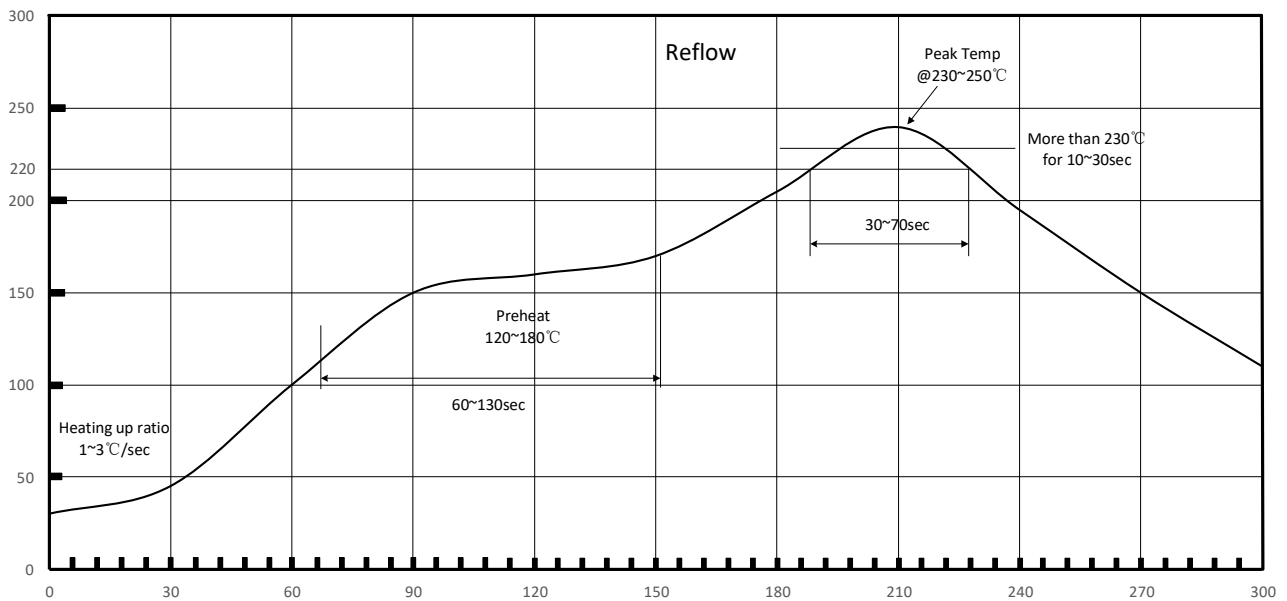
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### Recommended Solder Temperature



### RoHS Compliant

The product does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls(PBB) or polybrominated diphenyl ethers(PBDE), and are therefore considered RoHS compliant.

### Order Information

| Part Number | Temperature   | Package                 | RoHS | Mark       | SPQ                            |
|-------------|---------------|-------------------------|------|------------|--------------------------------|
| RLM00106C2  | -40°C ~ +85°C | 3.0mm x 3.0 mm x 0.75mm | Yes  | RLM00106C2 | Tape and Reel<br>3000 pcs/Reel |