AMT1717
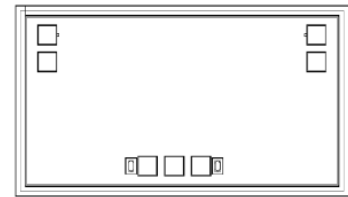**2 – 6GHz Mixer Chip**

Key Features :

- Radio frequency : 2 – 6GHz
- Intermediate frequency bandwidth : DC – 3GHz
- Conversion loss : 8dB
- LO/RF isolation : 40dB
- P1dB : +11dBm
- Chip dimensions : 1.8mm x 1.0mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1717 is a high performance 2 – 6GHz mixer chip, it is designed by Gallium Arsenide (GaAs) pHEMT process. This chip is designed with ground through metal vias on the back technology. All chip products are 100% RF tested. AMMX0002S does not require direct current bias.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
P_{RF}	Radio input power	24dBm	
P_{IF}	Intermediate frequency input power	24dBm	
P_{LD}	Local oscillator input power	24dBm	
Tch	Operation Temperature	150°C	
Tm	Sintering Temperature	310°C	30s, N_2 protection
Tstg	Storage Temperature	-65 ~ +150°C	

[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.
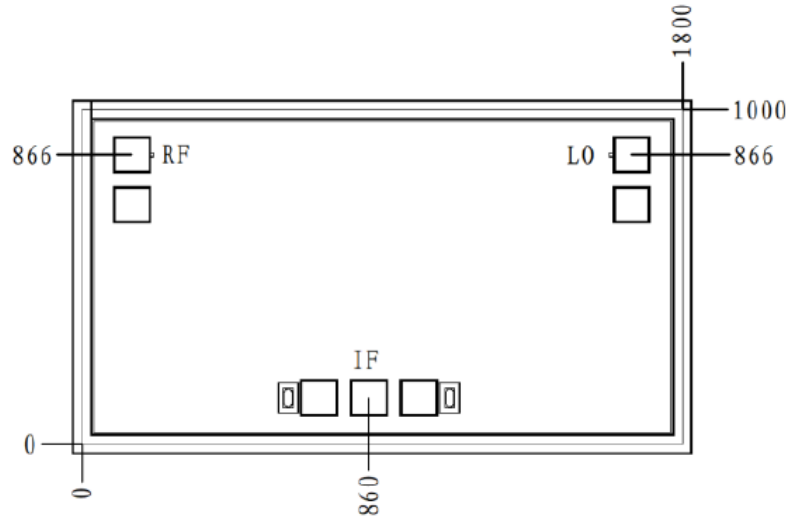
Electrical Characteristics (Ta = 25°C)

Parameter	Value			Unit
	Min	Typical	Max	
Radio Frequency/Local Oscillator Frequency range	2	-	6	GHz
Intermediate Frequency range	DC	-	12	GHz
Conversion loss	-	8	9	dB
Isolation LO to RF	36	40	-	dB
Isolation LO to IF	25	30	-	dB
Isolation RF to IF	12	15	-	dB
Input power at 1dB compression point	-	11	15	dBm

Typical Performance

Conversion Gain vs Local Oscillator Drive

Isolation (LO = 13dBm)

Intermediate Frequency Bandwidth (L0 = 4GHz)

Input Power P1dB

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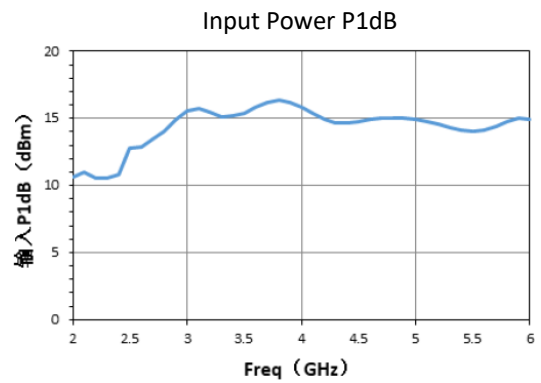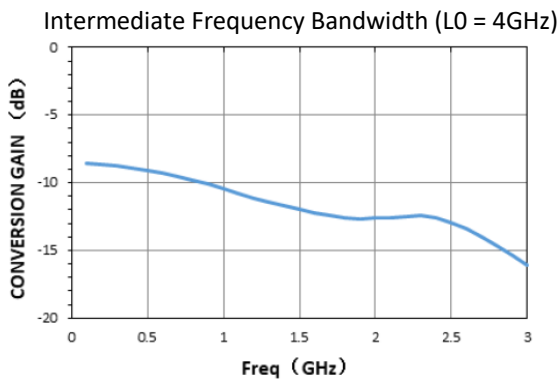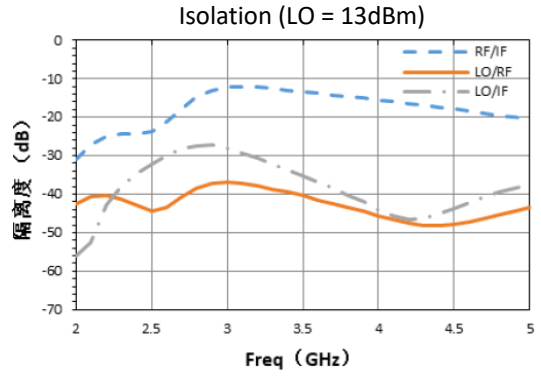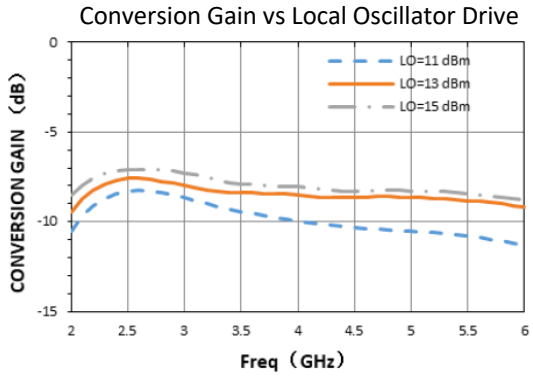
Chip Dimensions (Unit : μm)

Chip Layout Diagram
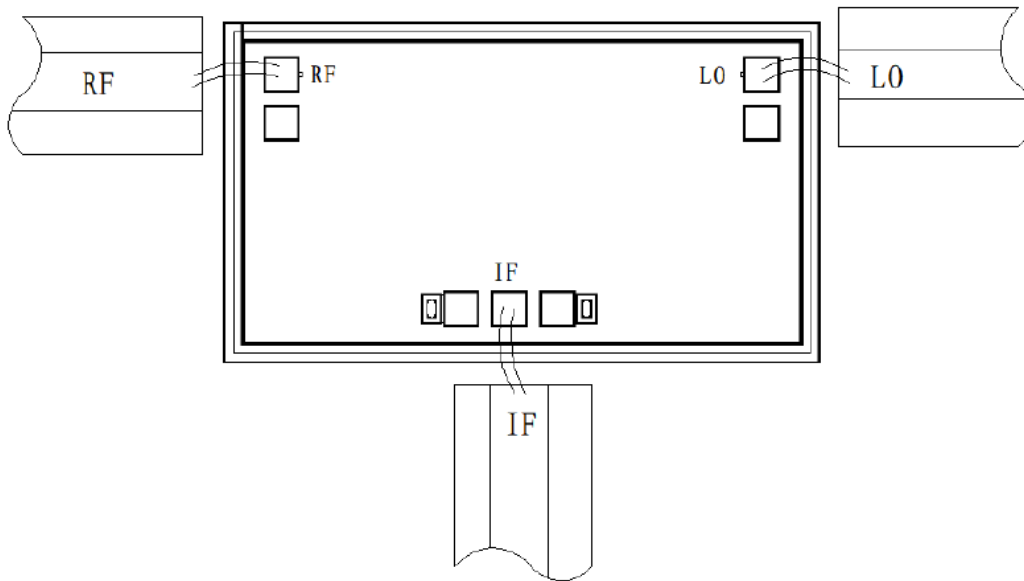
Pad Definition

Symbol	Function Description	Dimension	Equivalent Circuit
RF	RF signal port, external connect to 50Ω system; if direct current is applied, no need DC blocking capacitor.	100μm*100μm	
LO	Local oscillator signal port, external connect to 50Ω system; if direct current is applied, no need DC blocking capacitor.	100μm*100μm	
IF	Intermediate frequency signal port, external connect to 50Ω system; if direct current is applied, need DC blocking capacitor.	100μm*100μm	

Please see Appendix A for details.

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