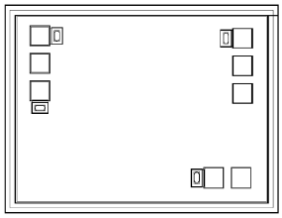
AMT1718
6 – 26GHz Mixer Chip



Key Features :

- Radio frequency : 6 – 26GHz
- Intermediate frequency bandwidth : DC – 12GHz
- Conversion loss : 10dB
- LO/RF isolation : 30dB
- P1dB : +12dBm
- Chip dimensions : 1.44mm x 1.07mm x 0.1mm
- Applications : wireless communication, transceiver module, radio telecommunication etc.

Description :

AMT1718 is a high performance 6 – 26GHz 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. AMMX0001S 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	

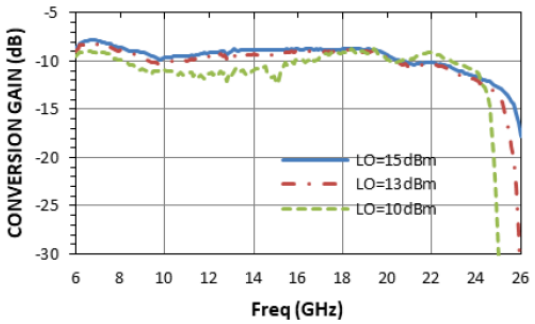
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

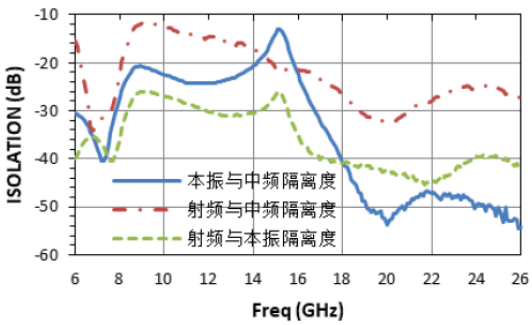
Parameter	Value			Unit
	Min	Typical	Max	
Radio Frequency/Local Oscillator Frequency range	6	-	26	GHz
Intermediate Frequency range	DC	-	12	GHz
Conversion loss	-	10	-	dB
Isolation LO to RF	-	30	-	dB
Isolation LO to IF	-	20	-	dB
Isolation RF to IF	-	10	-	dB
Input power at 1dB compression point	-	12	-	dBm

Typical Performance

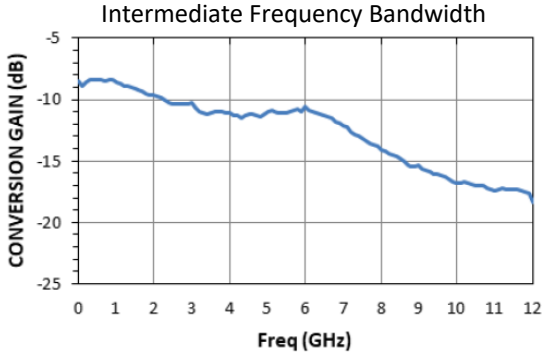
Conversion Gain vs Local Oscillator Drive



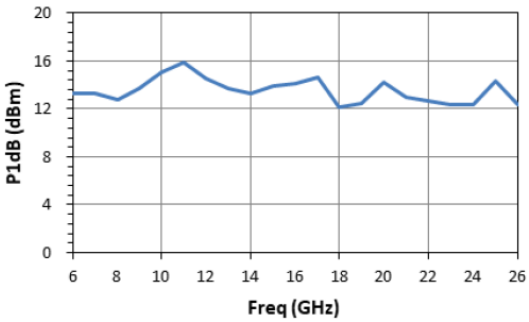
Isolation



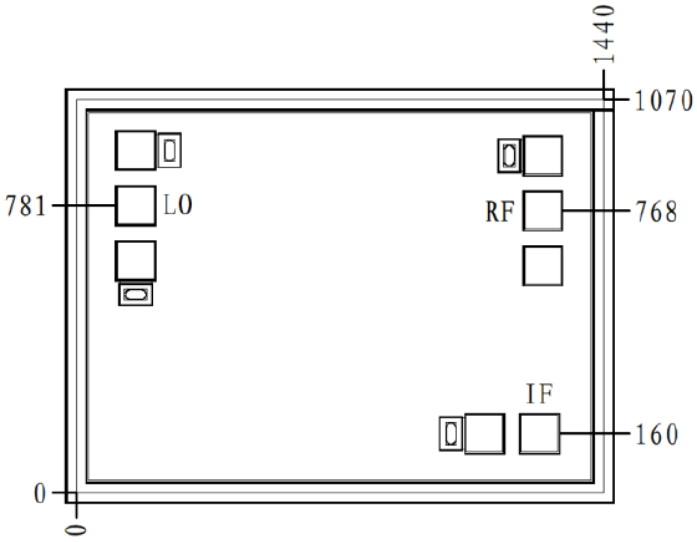
Intermediate Frequency Bandwidth



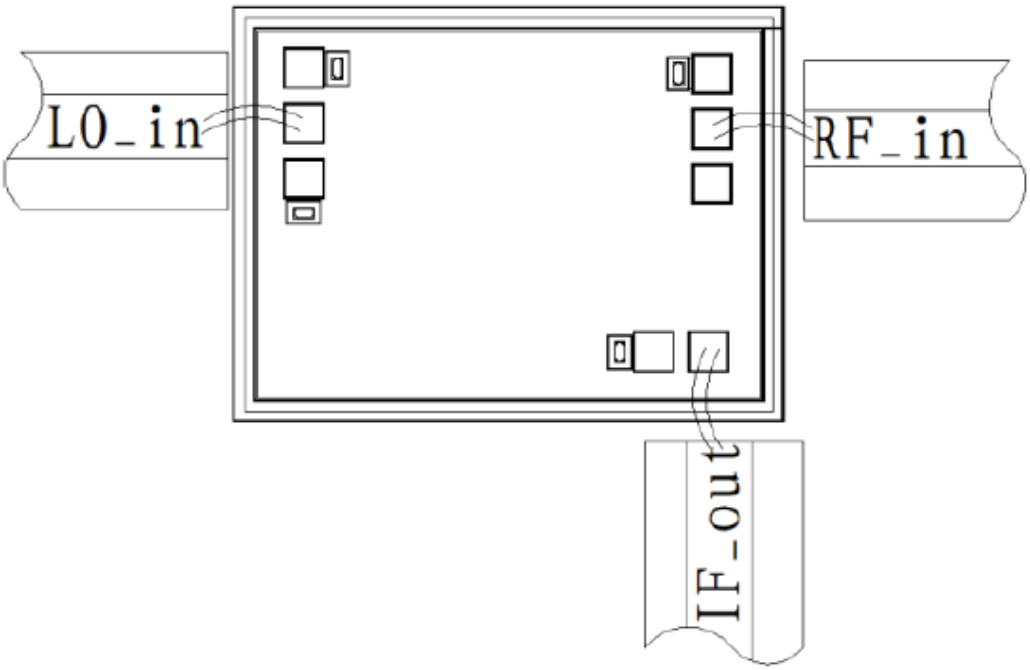
Input Power P1dB



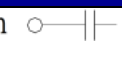
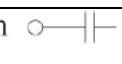
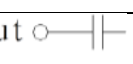
Chip Dimensions (Unit : μm)



Chip Layout Diagram



Pad Definition

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

Please see Appendix A for details.