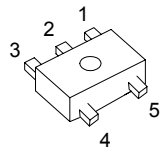
M2107 **LINEAR INTEGRATED CIRCUIT**

SINGLE OPERATIONAL AMPLIFIER



SOT-25

*Pb-free plating product number: M2107L

■ DESCRIPTION

The UTC M2107 is the single operational amplifier of ultra miniature surface mount package. It has features of low operating supply voltage and low saturation output voltage. It is suitable for small electronic equipments and hybrid circuits.

■ FEATURES

*Operating Voltage (V^+/V^- =±1.0V to±3.5V)
*Low Output Saturation: (4Vp-p at single 5V supply)
*V^-Shield Plate Between +Input and -Input
*Suitable Pin Arrangement for Application
*Bipolar Technology

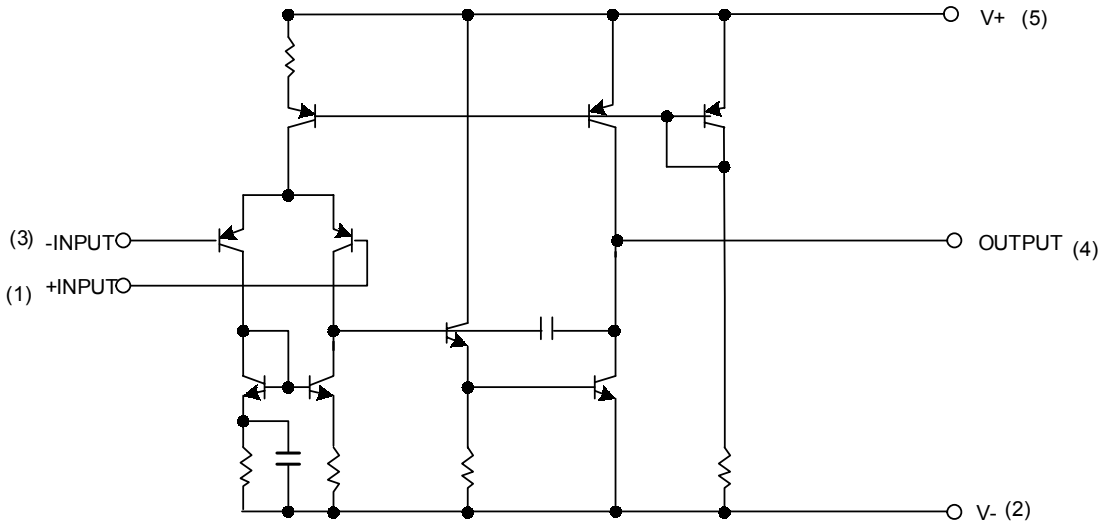
■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	+INPUT
2	V^-
3	-INPUT
4	OUTPUT
5	V^+

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead Free		
M2107-AF5-R	M2107L-AF5-R	SOT-25	Tape Reel

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta=25℃, unless otherwise specified.)

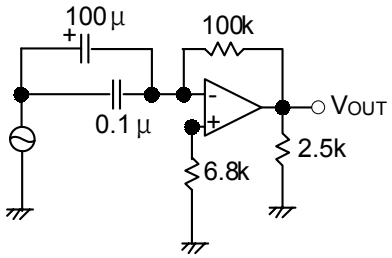
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V+(V+/V-)	7(or±3.5)	V
Differential Input Voltage	$V_{I(DIFF)}$	±7	V
Input Voltage	V_{IN}	±3.5	V
Power Dissipation	P_D	200	mW
Operating Temperature Range	T_{OPR}	0 ~ +70	°C
Storage Temperature Range	T_{STG}	-40 ~ +150	°C

Note:1.Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2.The device is guaranteed to meet performance specification within 0℃~70℃ operating temperature range and assured by design from –40℃~85℃.

■ ELECTRICAL CHARACTERISTICS (Ta=25□, V^+/V^-=±2.5V , unless otherwise specified.)

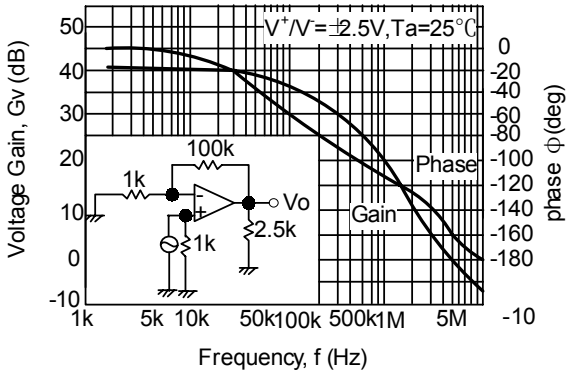
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Input Offset Voltage	$V_{IN(OFF)}$	R_S=10kΩ		1	6	mV
Input Offset Current	$I_{IN(OFF)}$	I^+-I^-		5	200	nA
Input Bias Current	$I_{IN(BIAS)}$			100	500	nA
Large Signal Voltage Gain	G_V	V_{OUT}=±2.0V,R_L=10kΩ	60	80		dB
Supply Voltage Rejection Ratio	SVR	R_S≤10kΩ	60	70		dB
Input Common Mode Voltage Range	$V_{IN(CM)}$		±1.5			V
Rejection Ratio	RR	R_S≤10kΩ	60	80		dB
Output Voltage Swing	V_{OM}	R_L=2.5kΩ	±2.0	±2.2		V
Slew Rate	SR	V_{IN}=±1Vp-p, ACL=+1		3		V/μs
Operating Current	I_{OPR}		1	2	3	mA

■ TEST CIRCUIT

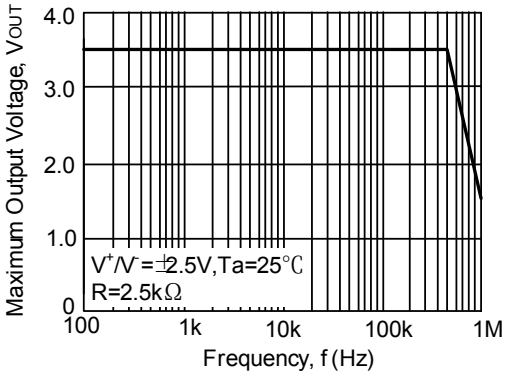


■ TYPICAL CHARACTERICS

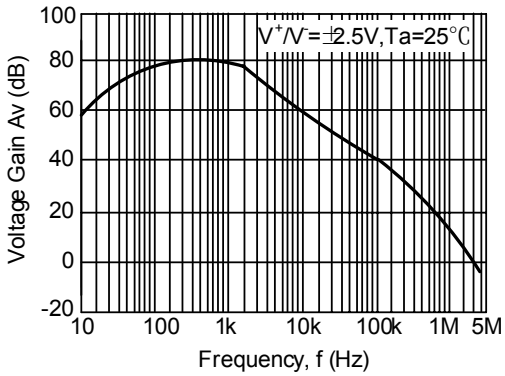
Voltage Gain,Phase vs.Frequency



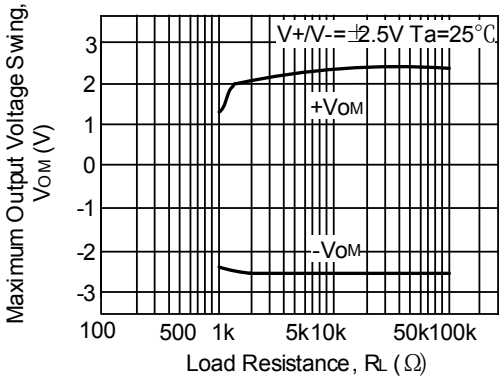
Maximum Output Voltage vs.Frequency



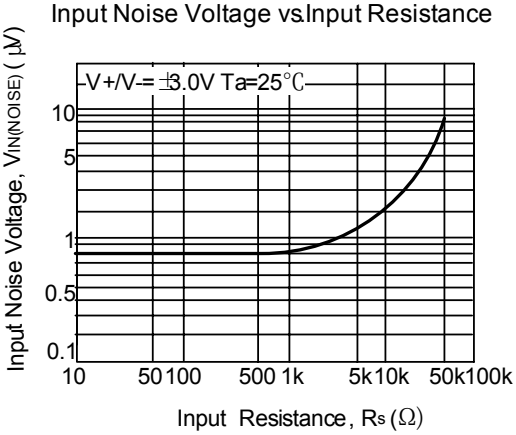
Voltage Gain vs.Frequency



Maximum Output Voltage Swing vs. Load Resistance

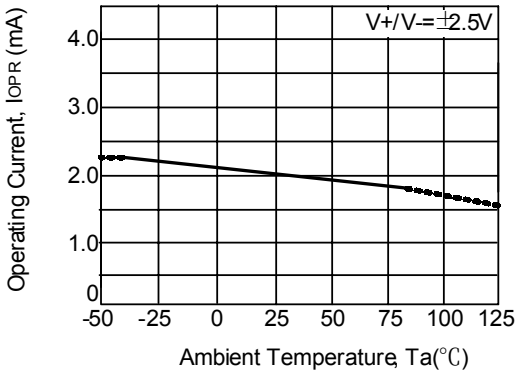


Input Noise Voltage vs.Input Resistance

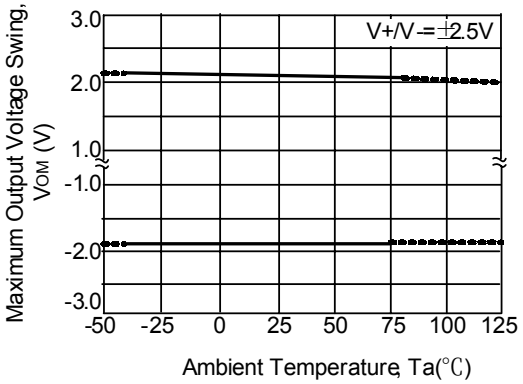


■ TYPICAL CHARACTERICS (Cont.)

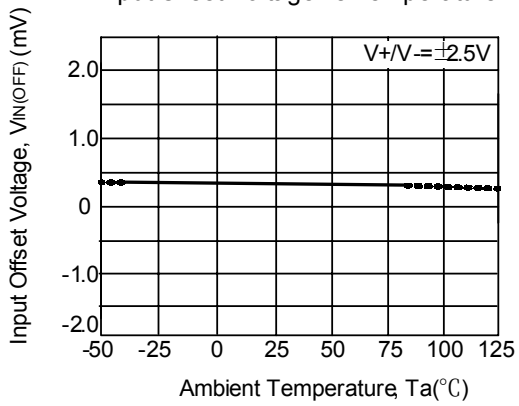
Operating Current vs.Temperature



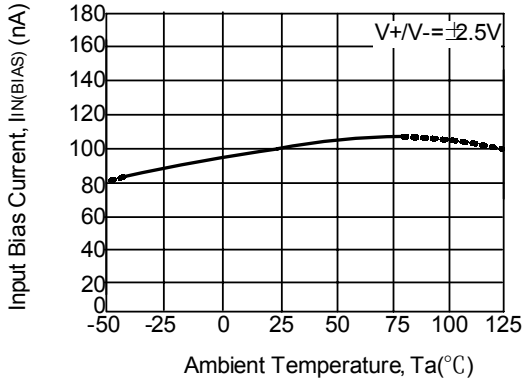
Maximum Output Voltage Swing vs.Temperature



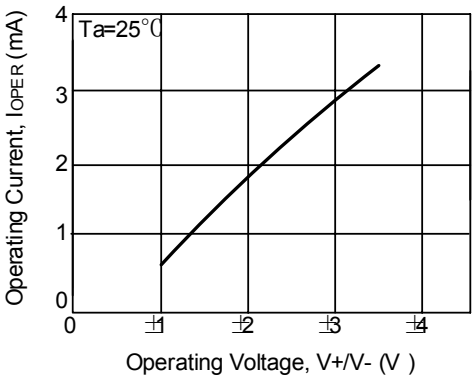
Input Offset Voltage vs.Temperature



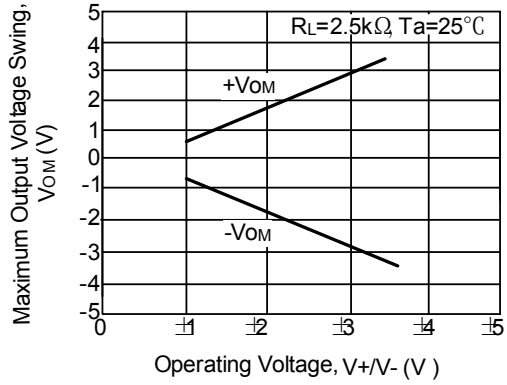
Input Bias Current vs.Temperature



Operating Current vs.Operating Voltage

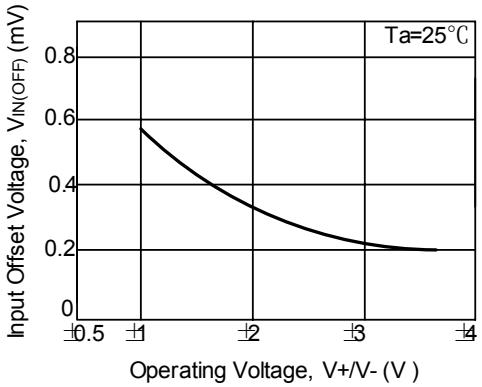


Maximum Output Voltage Swing vs. Operating Voltage



■ TYPICAL CHARACTERICS (Cont.)

Input Offset Voltage vs. Operating Voltage



Total Harmonic Distortion vs. Output Voltage