



# M2125

## LINEAR INTEGRATED CIRCUIT

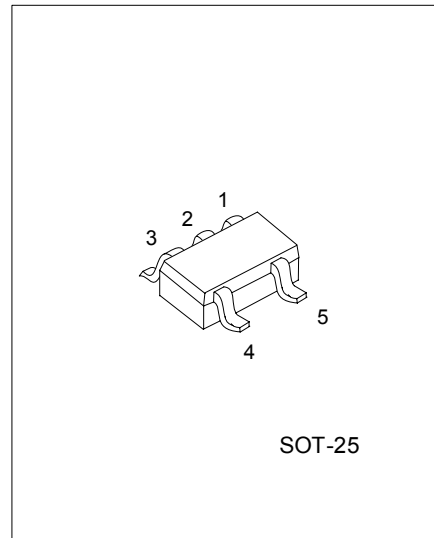
### SINGLE-SUPPLY OPERATIONAL AMPLIFIER

#### DESCRIPTION

The UTC **M2125** is a single-supply operational amplifier.

#### FEATURES

- \* Single-Supply Operation
- \* Low Operating Voltage:  $\pm 2.7V \sim 20V$
- \* Low Operating Current: 1.0mA (typ.)
- \* Slew Rate: 1.2V/ $\mu s$  (typ.)



\*Pb-free plating product number: M2125L

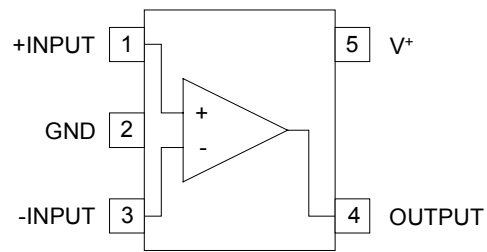
#### ORDERING INFORMATION

Order Number		Package	Pin Assignment					Packing
Normal	Lead Free Plating		1	2	3	4	5	
M2125-AF5-R	M2125L-AF5-R	SOT-25	I <sup>+</sup>	G	I <sup>-</sup>	O	V <sup>+</sup>	Tape Reel

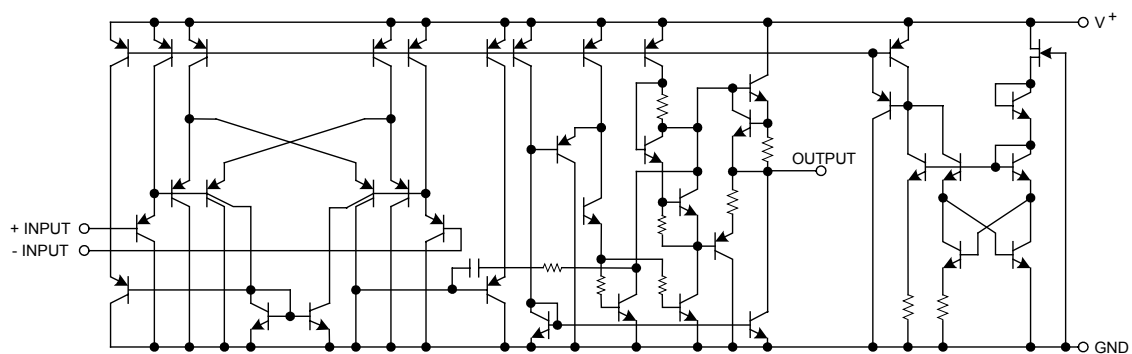
Note: Pin Assignment: I: V<sub>IN</sub> O: Output G: GND

<p>M2125L-AF5-R</p>	<p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) R: Tape Reel</p> <p>(2) AF5: SOT-25</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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## ■ PIN CONFIGURATION



## ■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS (Ta=25 °C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	+20	V
Differential Input Voltage	V <sub>I(DIFF)</sub>	+20	V
Input Voltage	V <sub>IN</sub>	-0.3 to +20 (note 3)	V
Power Dissipation	P <sub>D</sub>	200	mW
Junction Temperature	T <sub>J</sub>	+125	°C
Operating Temperature	T <sub>OPR</sub>	-40~+85	°C
Storage Temperature	T <sub>STG</sub>	-40~+150	°C

Note 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

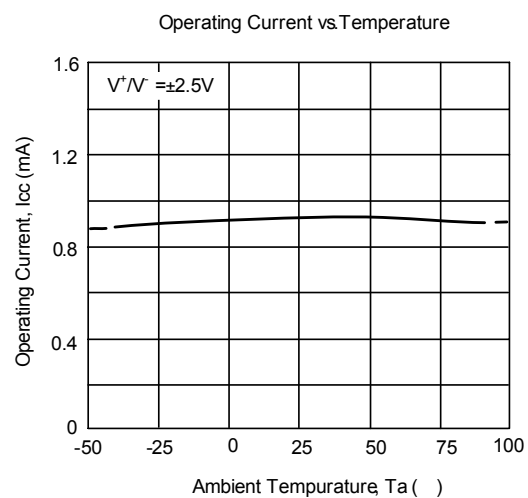
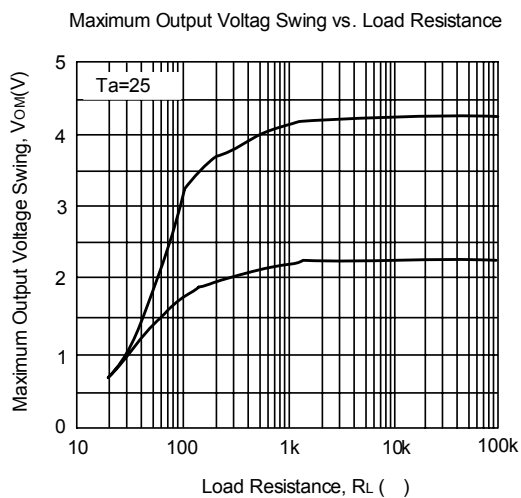
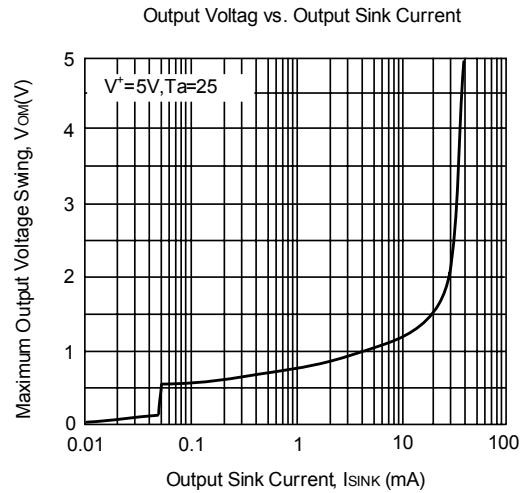
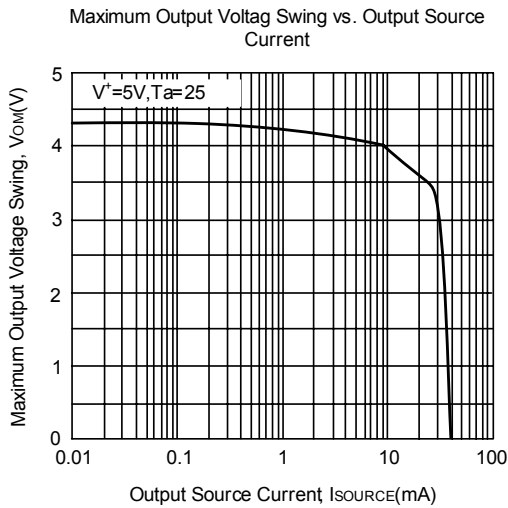
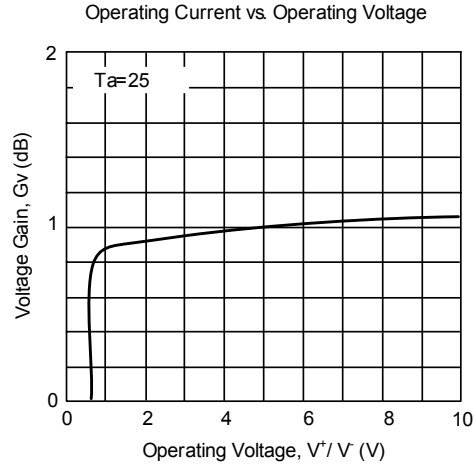
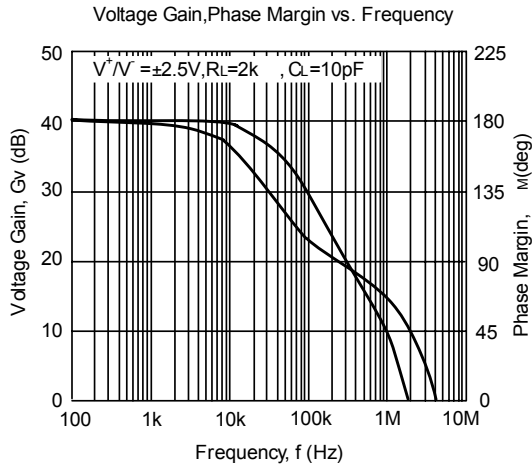
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

- The device is guaranteed to meet performance specification within 0 ~+70 °C operating temperature range and assured by design from -40 ~+85 °C.
- When the supply voltage is less than +20V, the absolute maximum input voltage is equal to the supply voltage.

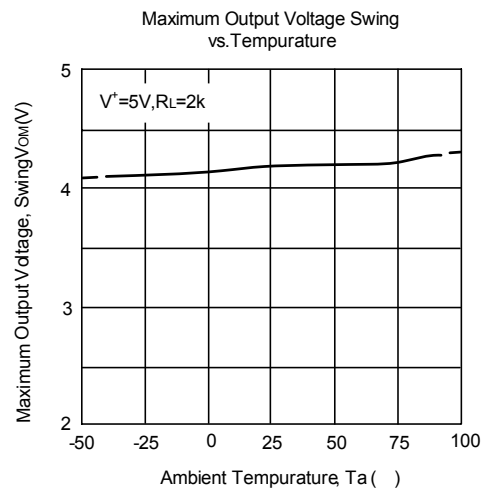
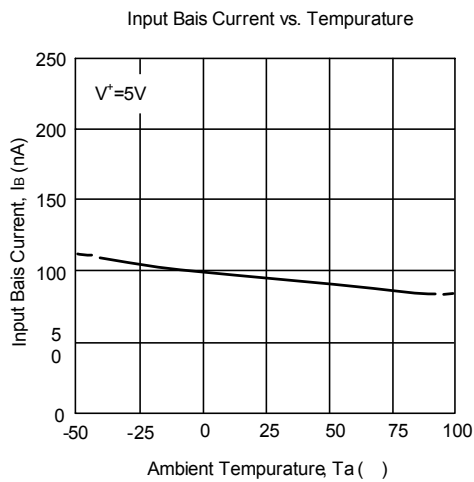
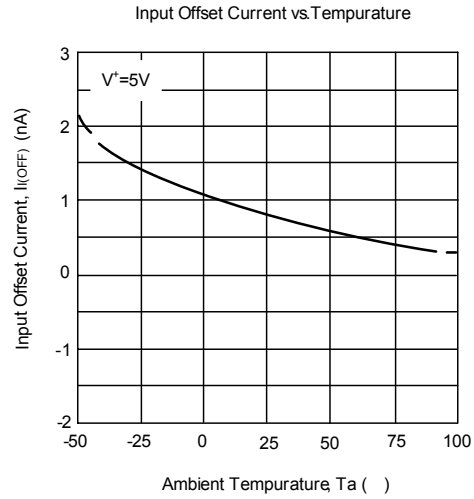
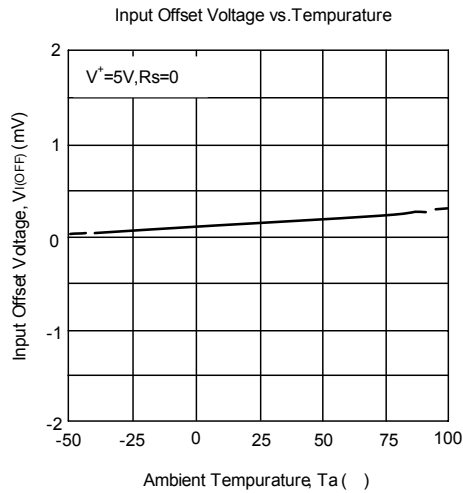
■ ELECTRICAL CHARACTERISTICS (V<sup>+</sup>=5V, Ta=25 °C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	V <sub>I(OFF)</sub>	R <sub>S</sub> =0Ω		2	7	mV
Input Offset Current	I <sub>I(OFF)</sub>			5	50	nA
Input Bias Current	I <sub>I(BIAS)</sub>			25	250	nA
Large Signal Voltage Gain	G <sub>v</sub>	R <sub>L</sub> = 2kΩ	88	100		dB
Maximum Output Voltage Swings	V <sub>OM</sub>	R <sub>L</sub> =2kΩ	3.5			V
Input Common Mode Voltage	V <sub>I(CM)</sub>		0~3.5			V
Common Mode Rejection Ratio	RR		70	90		dB
Supply Voltage Rejection Ratio	SVR		80	94		dB
Output Source Current	I <sub>SOURCE</sub>	V <sub>IN<sup>+</sup></sub> =1V, V <sub>IN<sup>-</sup></sub> =0V	20	30		mA
Output Sink Current	I <sub>SINK</sub>	V <sub>IN<sup>+</sup></sub> =0V, V <sub>IN<sup>-</sup></sub> =1V	8	20		mA
Operating Current	I <sub>CC</sub>	R <sub>L</sub> =∞		1.0	1.75	mA
Slew Rate	SR			1.2		V/μs
Unity Gain Frequency	f <sub>T</sub>			1.2		MHz

## TYPICAL CHARACTERISTICS



## ■ TYPICAL CHARACTERISTICS(Cont.)



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