



## M2125

## LINEAR INTEGRATED CIRCUIT

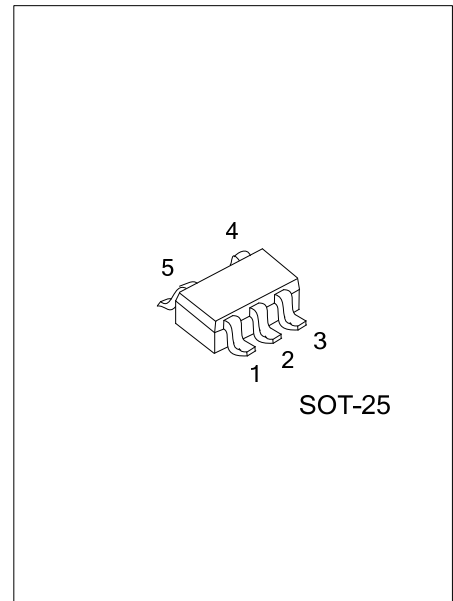
### SINGLE-SUPPLY OPERATIONAL AMPLIFIER

#### 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.)



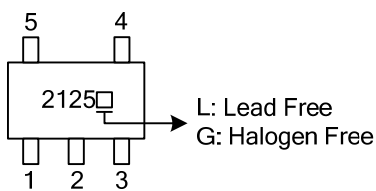
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment					Packing
Lead Free	Halogen Free		1	2	3	4	5	
M2125L-AF5-R	M2125G-AF5-R	SOT-25	I <sup>+</sup>	G	I <sup>-</sup>	O	V <sup>+</sup>	Tape Reel

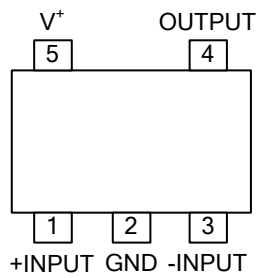
Note: Pin Assignment: I: V<sub>IN</sub> O: Output G: GND

<p>M2125L-AF5-R</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</p>	<p>(1) R: Tape Reel (2) AF5: SOT-25 (3) G: Halogen Free, L: Lead Free</p>
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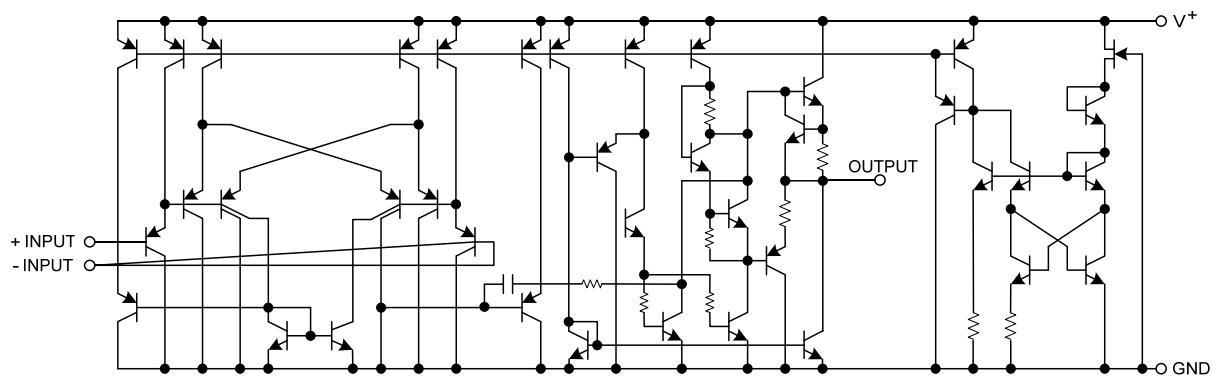
#### MARKING



## ■ PIN CONFIGURATION



## ■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+$	+20	V
Differential Input Voltage	$V_{I(\text{DIFF})}$	+20	V
Input Voltage (Note 2)	$V_{\text{IN}}$	-0.3 ~ +20	V
Power Dissipation	$P_D$	200	mW
Junction Temperature	$T_J$	+125	$^\circ\text{C}$
Operating Temperature	$T_{\text{OPR}}$	-40~ +85	$^\circ\text{C}$
Storage Temperature	$T_{\text{STG}}$	-40~+125	$^\circ\text{C}$

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

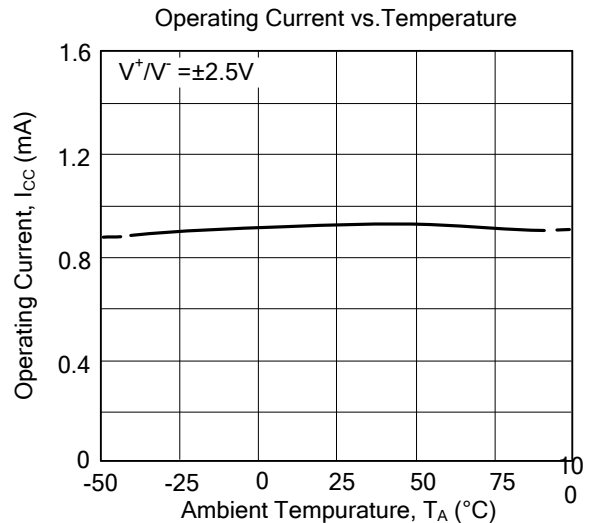
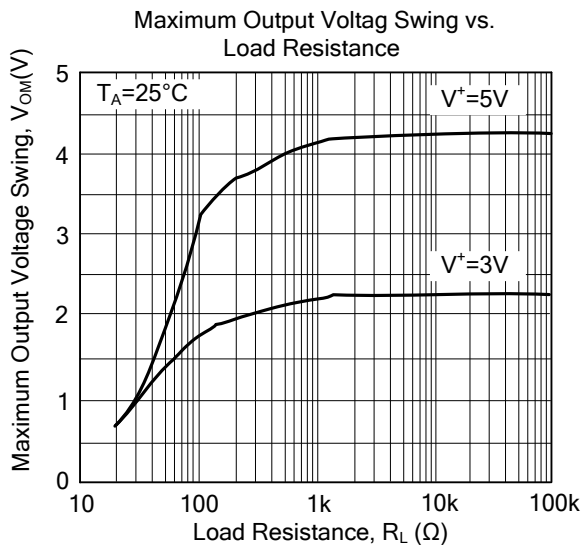
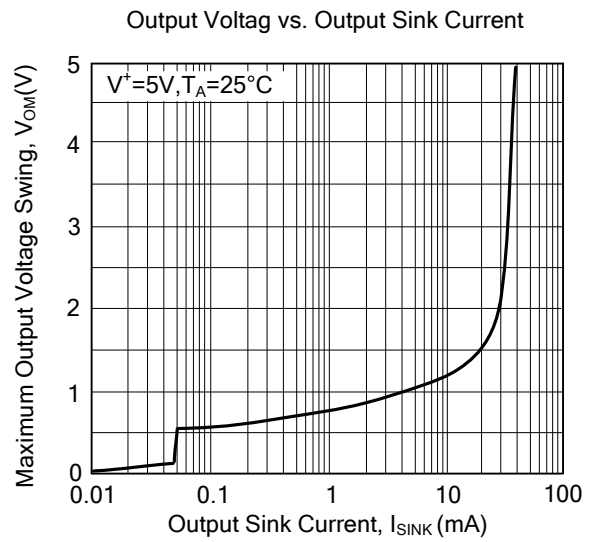
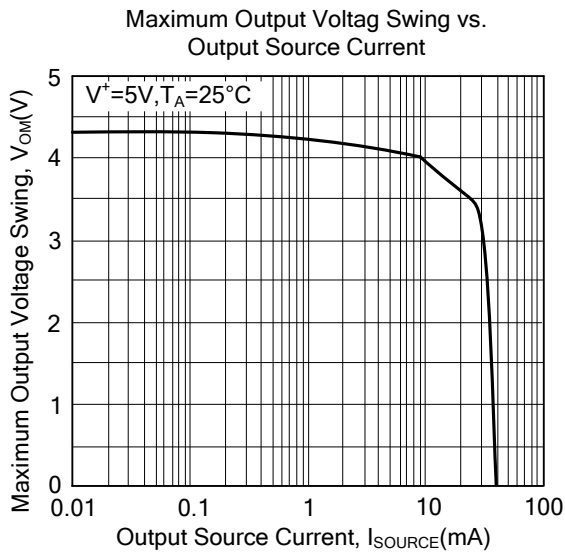
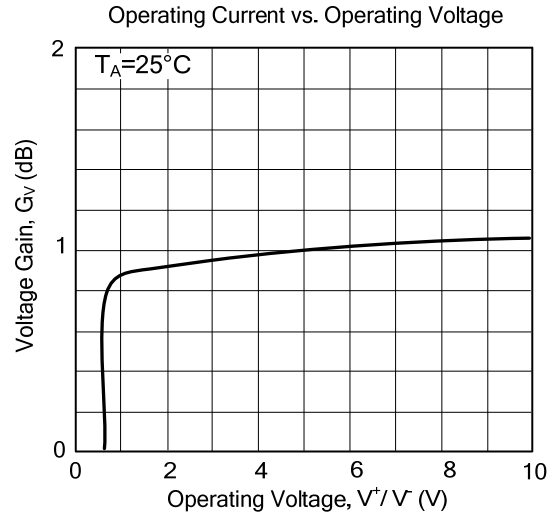
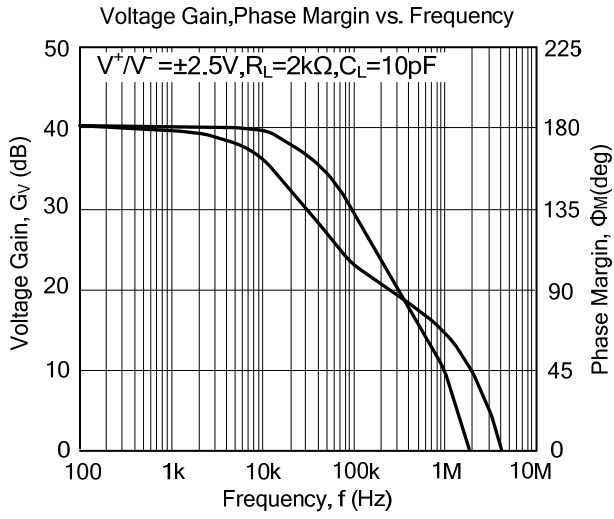
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. When the supply voltage is less than +20V, the absolute maximum input voltage is equal to the supply voltage.

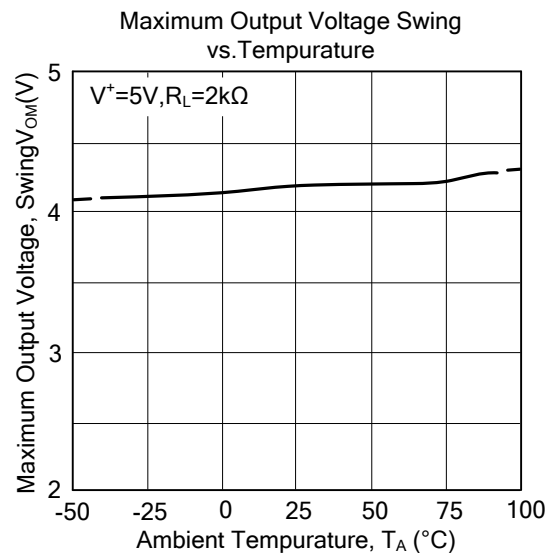
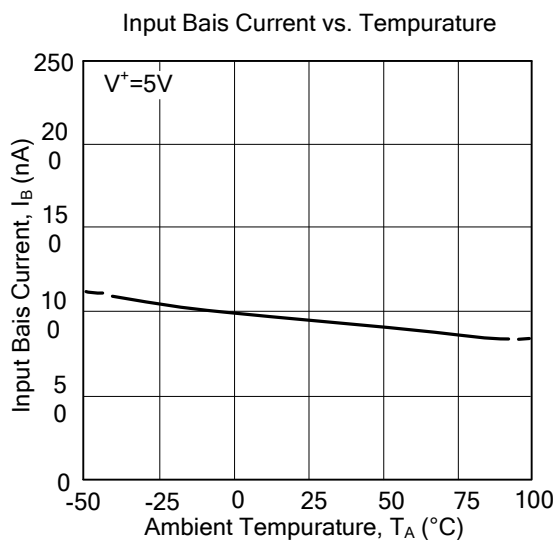
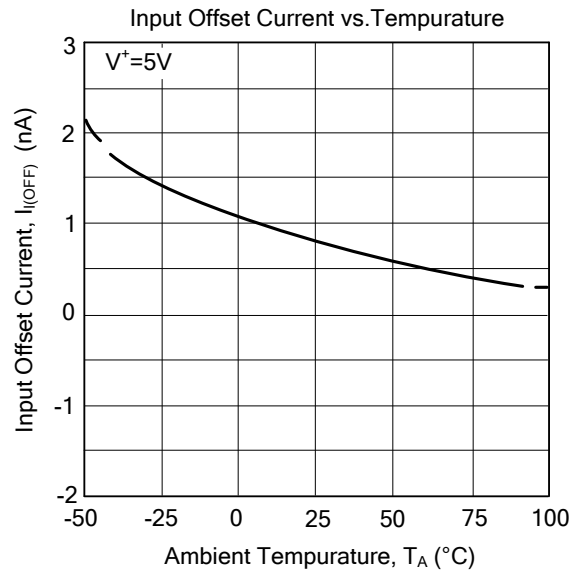
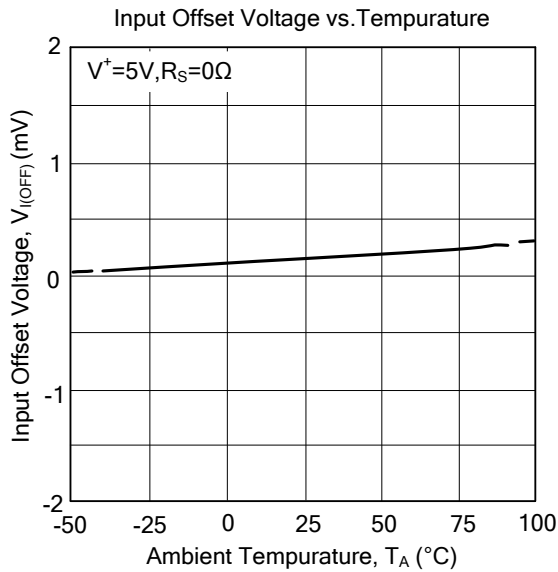
■ ELECTRICAL CHARACTERISTICS ( $V^+=5\text{V}$ ,  $T_A=25^\circ\text{C}$ )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	$V_{I(\text{OFF})}$	$R_S=0\Omega$		2	7	mV
Input Offset Current	$I_{I(\text{OFF})}$			5	50	nA
Input Bias Current	$I_{I(\text{BIAS})}$			25	250	nA
Large Signal Voltage Gain	$G_V$	$R_L \geq 2\text{k}\Omega$	88	100		dB
Maximum Output Voltage Swings	$V_{\text{OM}}$	$R_L=2\text{k}\Omega$	3.5			V
Input Common Mode Voltage	$V_{I(\text{CM})}$		0		3.5	V
Common Mode Rejection Ratio	RR		70	90		dB
Supply Voltage Rejection Ratio	SVR		80	94		dB
Output Source Current	$I_{\text{SOURCE}}$	$V_{\text{IN}^+}=1\text{V}, V_{\text{IN}^-}=0\text{V}$	20	30		mA
Output Sink Current	$I_{\text{SINK}}$	$V_{\text{IN}^+}=0\text{V}, V_{\text{IN}^-}=1\text{V}$	8	20		mA
Operating Current	$I_{\text{CC}}$	$R_L=\infty$		1.0	1.75	mA
Slew Rate	SR			1.2		V/ $\mu\text{s}$
Unity Gain Frequency	$f_T$			1.2		MHz

■ TYPICAL CHARSACTERISTICS



■ TYPICAL CHARSACTERISTICS(Cont.)



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