



# UM21125

## LINEAR INTEGRATED CIRCUIT

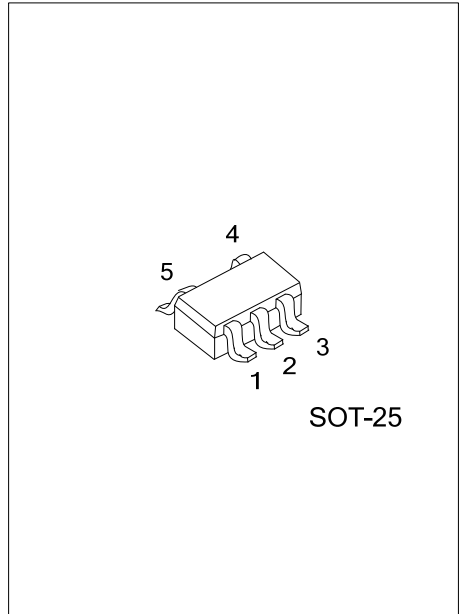
### SINGLE-SUPPLY COMPARATOR

#### DESCRIPTION

The UTC **UM21125** is a single-supply comparator. There is a 70mV  $V_{REF}$  negative input inside.

#### FEATURES

- \* Single-Supply Operation
- \* Low Operating Voltage:  $\pm 2.7V \sim 20V$
- \* Low Operating Current: 1.3mA (Typ.)

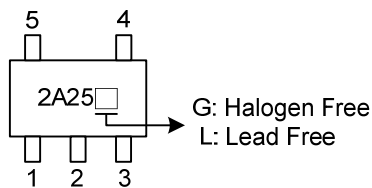


#### ORDERING INFORMATION

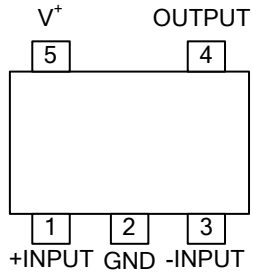
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UM21125L-AF5-R	UM21125G-AF5-R	SOT-25	Tape Reel

<p>UM21125L-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



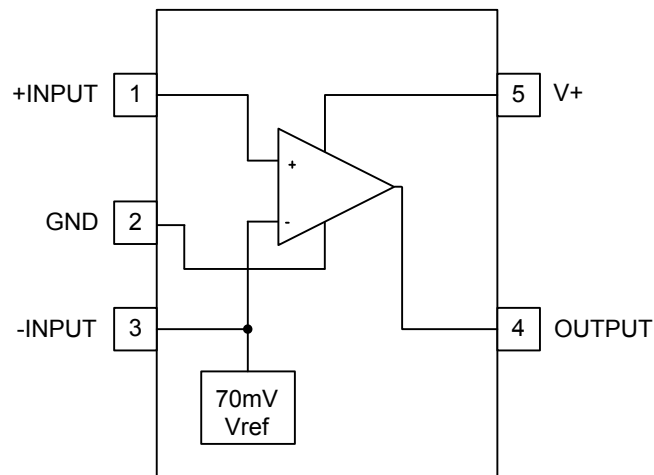
## PIN CONFIGURATION



## ■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	+INPUT	Positive input of the comparator
2	GND	Ground Connection
3	-INPUT	Negative input of the comparator (there is 70mV Vref inside)
4	OUTPUT	The output of the comparator
5	V+	Supply voltage

## ■ BLOCK DIAGRAM



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

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

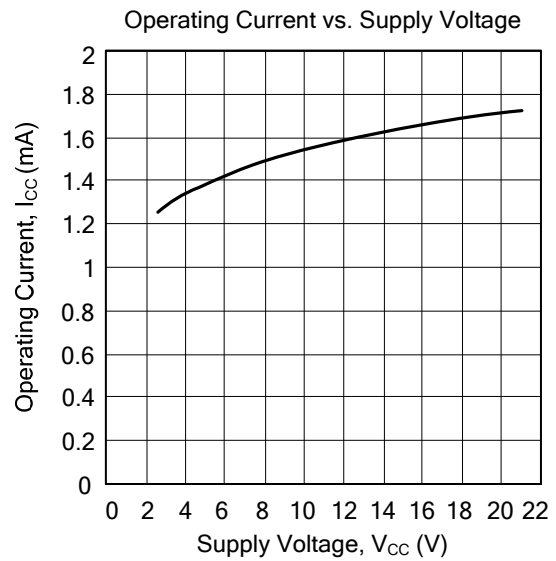
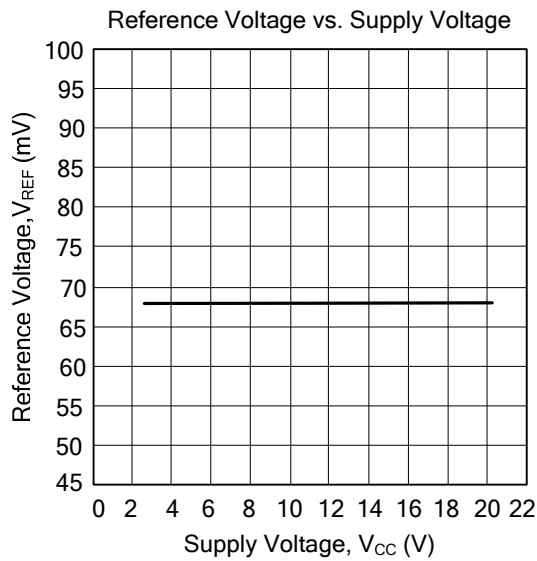
Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
-Input DC Level	$V_{IN-}$		63	68	73	mV
Maximum Output Voltage Swings	$V_{OM}$	$R_L=2\text{k}\Omega$	3.5			V
Operating current	$I_{CC}$	$V^+=5\text{V}$ , $R_L=\infty$		1.3	1.75	mA
		$V^+=20\text{V}$ , $R_L=\infty$		1.6	2.35	mA
Output Source Current	$I_{SOURCE}$	$V_{IN+}=1\text{V}$ , $V_{IN-}=70\text{mV}$	20	30		mA
Output Sink Current	$I_{SINK}$	$V_{IN+}=0\text{V}$ , $V_{IN-}=70\text{mV}$	8	20		mA

■ TYPICAL CHARSACTERIST



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