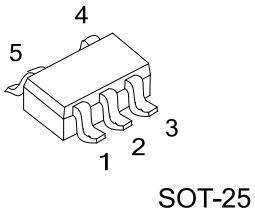
# UM21125

**LINEAR INTEGRATED CIRCUIT**

## SINGLE-SUPPLY COMPARATOR



SOT-25

### ■ 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: ±2.7V~20V
* Low Operating Current: 1.3mA (Typ.)

### ■ ORDERING INFORMATION

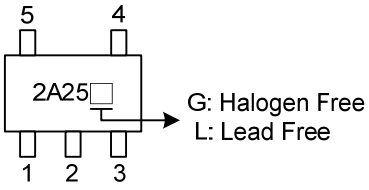
| Ordering Number | | Package | Packing |
|---|---|---|---|
| Lead Free | Halogen Free | | |
| UM21125L-AF5-R | UM21125G-AF5-R | SOT-25 | Tape Reel |

UM21125L-AF5-R

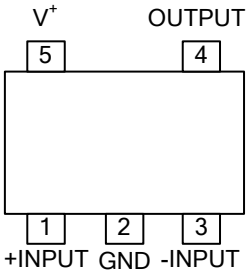
(1)Packing Type
(2)Package Type
(3)Lead Free

(1) R: Tape Reel
(2) AF5: SOT-25
(3) G: Halogen Free, L: Lead Free

### ■ MARKING



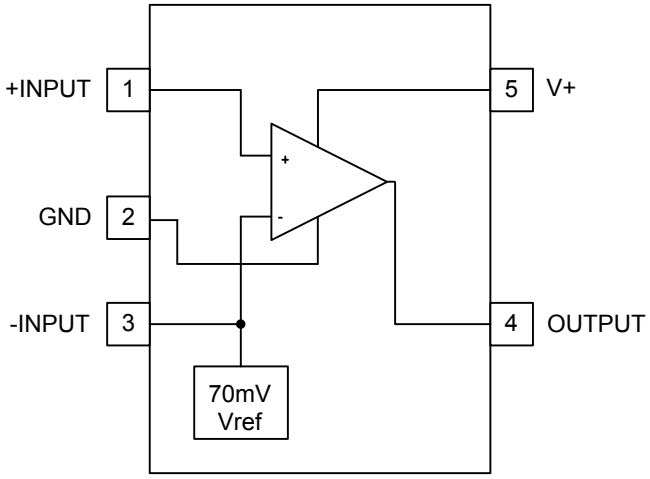
## PIN CONFIGURATION




## ■ 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°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 | °C |
| Operating Temperature | $T_{OPR}$ | -40~ +85 | °C |
| Storage Temperature | $T_{STG}$ | -40~+125 | °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 ($V^+$=5V,$T_A$=25°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 | $V_{OM}$ | $R_L$=2kΩ | 3.5 | | | V |
| Operating current | $I_{CC}$ | V+=5V, $R_L$=∞ | | 1.3 | 1.75 | mA |
| | | V+=20V, $R_L$=∞ | | 1.6 | 2.35 | mA |
| Output Source Current | $I_{SOURCE}$ | $V_{IN}$+=1V, $V_{IN}$-=70mV | 20 | 30 | | mA |
| Output Sink Current | $I_{SINK}$ | $V_{IN}$+=0V, $V_{IN}$-=70mV | 8 | 20 | | mA |

## ■ TYPICAL CHARSACTERIST