



## UM611

Preliminary

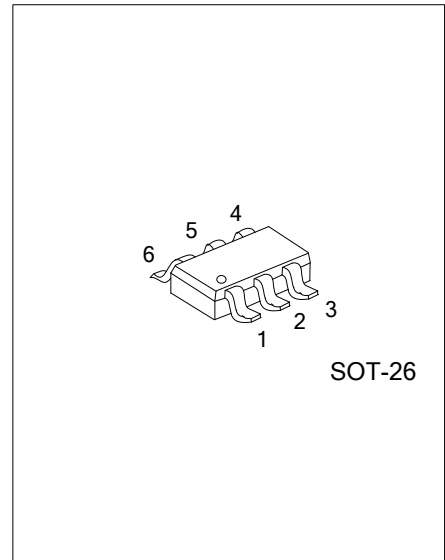
LINEAR INTEGRATED CIRCUIT

### DOUBLE CONSTANT VOLTAGE CONTROLLERS

#### DESCRIPTION

The UTC **UM611** is a highly integrated solution for double constant voltage application.

The UTC **UM611** contains two voltage reference (0.6V and 0.8V) and two operational amplifiers. The 0.8V voltage reference, combined with one operational amplifier, makes of an ideal voltage controller for use in adapters and battery chargers. The 0.6 voltage reference, combined with another operational amplifier, makes of an ideal current limiter for use in adapters and battery chargers.



#### FEATURES

- \* Constant voltage control
- \* Low supply current: 0.45mA ( $V_{CC}=5V$ )
- \* Easy compensation
- \* Precision Internal Voltage Reference: 0.6V/0.8V
- \* Low external component
- \* Operating power supply : 3V~20V

#### APPLICATION

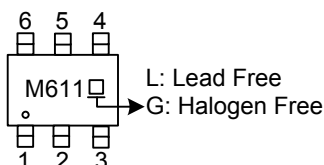
- \* battery chargers
- \* DCDC application
- \* ACDC adapters

#### ORDERING INFORMATION

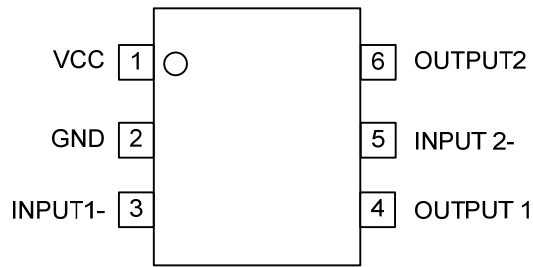
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UM611L-AG6-R	UM611G-AG6-R	SOT-26	Tape Reel

<p>UM611G-AG6-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) T: Tape Reel</li> <li>(2) AG6: SOT-26</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
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#### MARKING



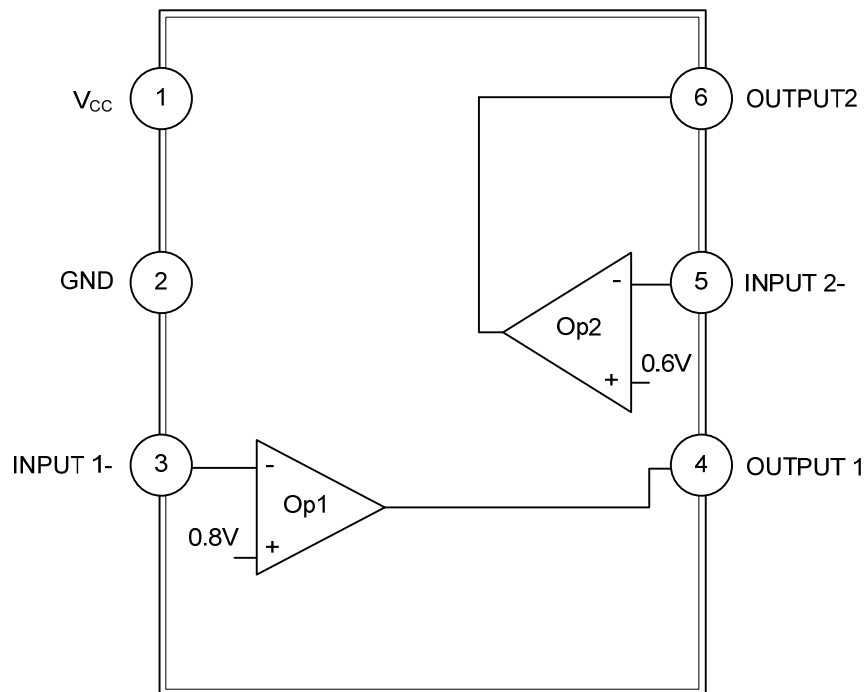
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V <sub>CC</sub>	Supply Voltage
2	GND	Ground
3	INPUT 1-	Inverting Input of Channel 1
4	OUTPUT 1	Output of Channel 1
5	INPUT 2-	Inverting Input of Channel 2
6	OUTPUT 2	Output of Channel 2

■ BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Power Supply Voltage ( $V_{CC}$ to GND)	$V_{CC}$	20	V
Op Amp 1 and 2 Input Voltage Range	$V_{IN}$	-0.3 ~ $V_{CC}+0.3$	V
Operating Junction Temperature	$T_J$	+150	°C
Storage Temperature Range	$T_{STG}$	-55 ~ +150	°C

Note: 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.

### ■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC}$	3 ~ 20	V
Ambient Temperature	$T_A$	-40 ~ +105	°C

### ■ ELECTRICAL CHARACTERISTICS

(Operating Conditions:  $V_{CC}=+5V$ ,  $T_A=25^\circ C$  unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP.	MAX	UNIT
Total Supply Current	$I_{CC}$	$V_{CC}=5V$ , no load, $-40^\circ C \leq T_A \leq 105^\circ C$		0.45	0.75	mA
		$V_{CC}=20V$ , no load, $-40^\circ C \leq T_A \leq 105^\circ C$		2.2	3.6	mA
Reference Voltage 1	$V_{REF1}$	$T_A=25^\circ C$	0.793	0.800	0.807	V
		$-40^\circ C \leq T_A \leq 105^\circ C$	0.790	0.800	0.810	V
Reference Voltage 2	$V_{REF2}$	$T_A=25^\circ C$	0.595	0.600	0.605	V
		$-40^\circ C \leq T_A \leq 105^\circ C$	0.593	0.600	0.607	V
Output Current	Source	$I_{SOURCE}$	$V_{CC}=15V$ , $V_{ID}=0.5V$ , $V_O=2V$	17	20	mA
	Sink	$I_{SINK}$	$V_{CC}=15V$ , $V_{ID}=-0.5V$ , $V_O=2V$	7	12	mA
Output Voltage Swing (High)	$V_{OH}$	$V_{CC}=20V$ , $R_L=10k\Omega$ , $V_{ID}=0.5V$	17	18		V
Output Voltage Swing (Low)	$V_{OL}$	$V_{CC}=20V$ , $R_L=10k\Omega$ , $V_{ID}=-0.5V$		17	100	mV
Slew Rate	SR	$V_{CC}=18V$ , $R_L=2k\Omega$ , $A_v=-1$ , $V_{IN}=0.5\sim 2V$ , $C_L=100pF$	0.2	1.0		V/ $\mu s$
Unity Gain Bandwidth	GBP	$V_{CC}=18V$ , $R_L=2k\Omega$ , $C_L=100pF$	0.7	1.0		MHz

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