



UM606

LINEAR INTEGRATED CIRCUIT

CONSTANT VOLTAGE AND CONSTANT CURRENT CONTROLLER

DESCRIPTION

The UTC **UM606**, for a constant voltage/constant current mode SMPS (switch mode power supplies) application which is a highly integrated solution, it contains one 1.21V voltage reference with $\pm 1\%$ accuracy, one current sensing circuit and two operational amplifiers. The UTC **UM606** is an ideal voltage controller for use in adapters and battery chargers because the voltage reference it's combining with one operational amplifier. And the UTC **UM606** is an ideal current limiter for output low side current sensing because the other low voltage reference is combining with the other operational amplifier.

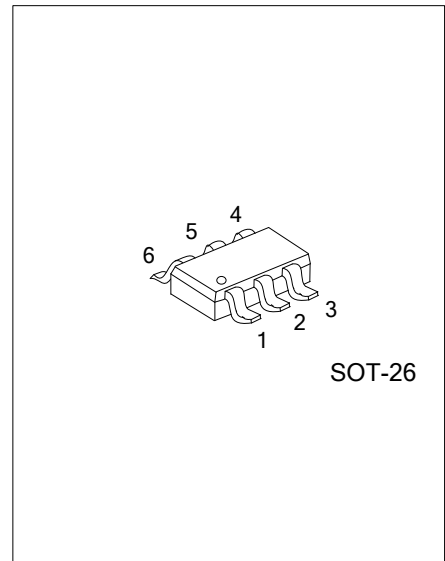
FEATURES

- *Constant Voltage and Constant Current Control
- *Precision Internal Voltage Reference
- *Few External Components
- *Easy Compensation

ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
UM606xL-AG6-R	UM606xG-AG6-R	SOT-26	Tape Reel

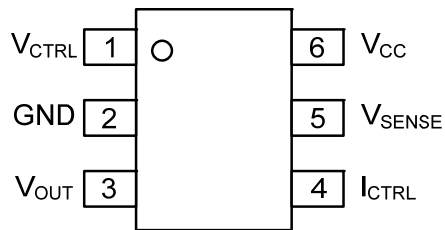
<p>UM606xL-AG6-R</p>	<p>(1) R: Tape Reel (2) AG6: SOT-26 (3) G: Halogen Free, L: Lead Free (4) refer to Marking Information</p>
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MARKING

PACKAGE	CODE	MARKING
SOT-26 (For UM606)	-	
SOT-26 (For UM606x)	D	

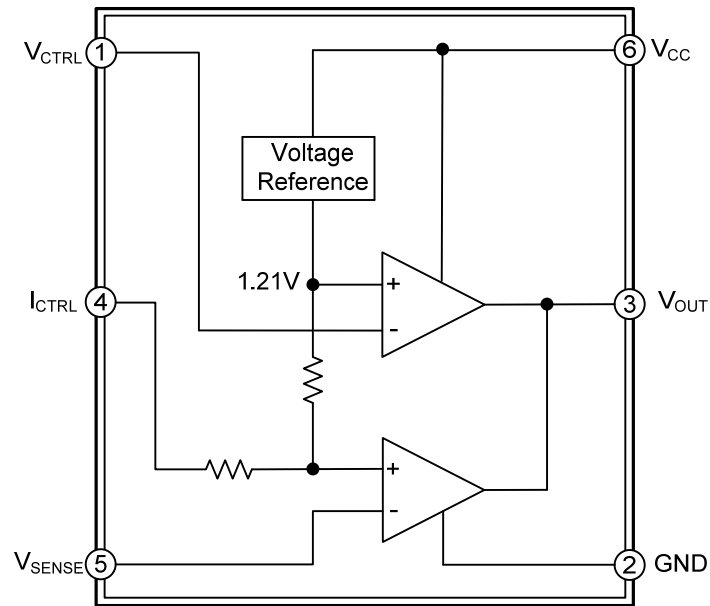
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	FUNCTION
1	V _{CTRL}	Input pin of the voltage control loop
2	GND	Ground
3	V _{OUT}	Output pin. sinking current only
4	I _{CTRL}	Input pin of the current control loop
5	V _{SENSE}	Input pin of the current control loop
6	V _{CC}	Power supply

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified.)

PARAMETER	SYMBOL	RATINGS	UNIT
DC Supply Voltage	V _{CC}	20	V
Input Voltage	V _{IN}	-0.3 ~ V _{CC}	V
Junction Temperature	T _J	+150	°C
Operating Temperature	T _{OPR}	-40~+105	°C
Storage Temperature	T _{STG}	-65 ~ +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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	250	°C/W
Junction to Case	θ _{JC}	92	°C/W

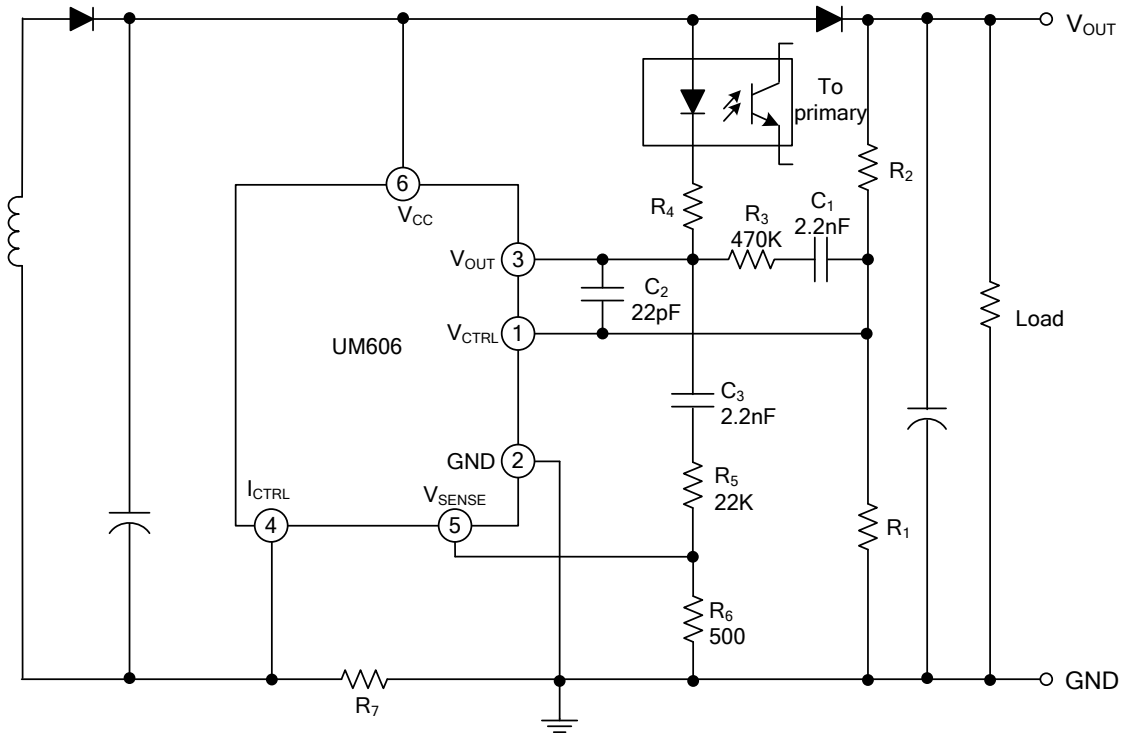
■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	2.5 ~ 18	V
Operating Temperature	T _A	-20 ~ +70	°C

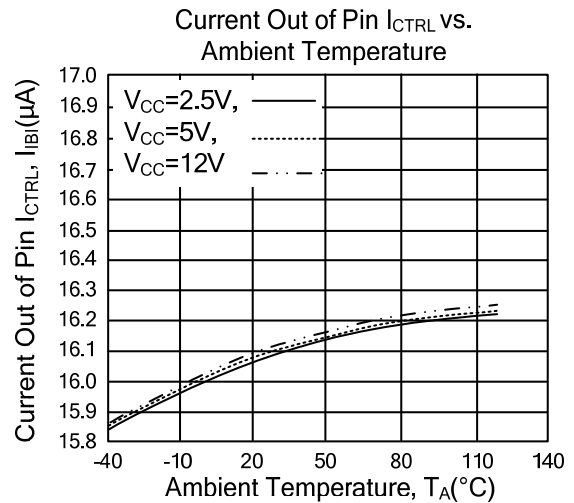
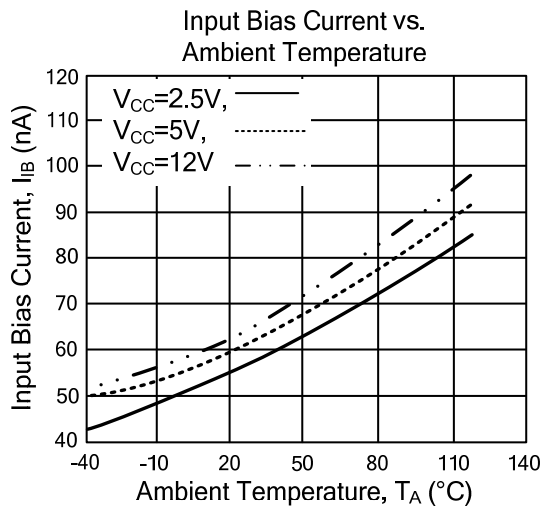
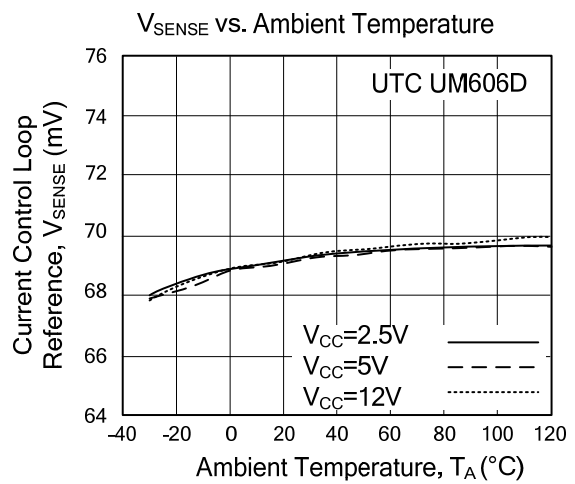
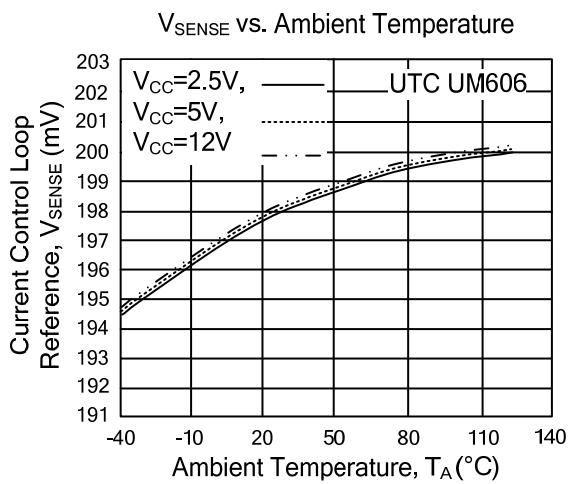
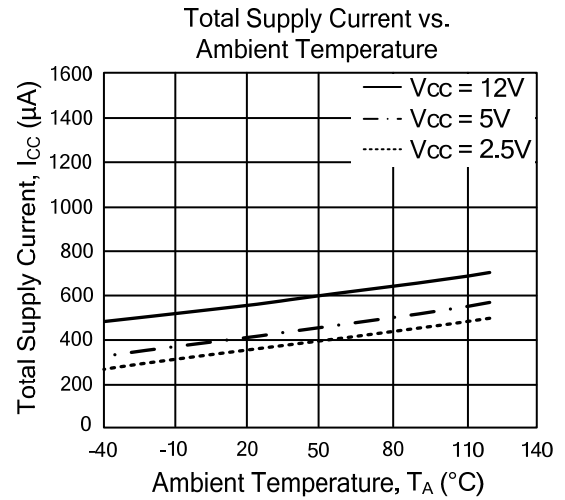
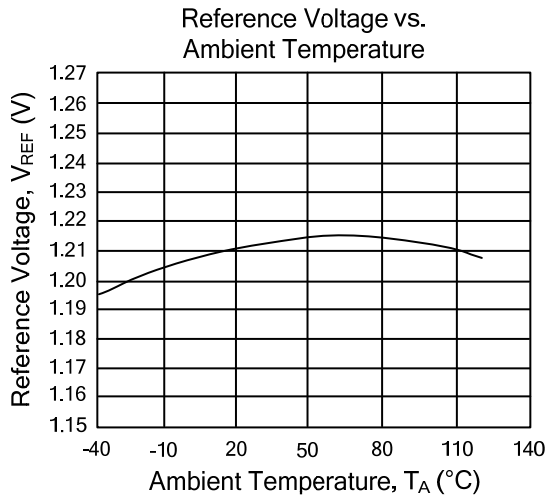
■ ELECTRICAL CHARACTERISTICS (V_{CC}=5V, T_A=25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
			UM606	UM606D	UM606		UM606D
Reference Voltage	V _{REF}		UM606	1.198	1.21	1.222	V
			UM606D	1.186	1.21	1.234	
Current Control Loop Reference	V _{SENSE}	I _{OUT} =2.5mA	UM606	196	200	204	mV
			UM606D	66.5	70	73.5	
Low Output Voltage	V _{OL}	@10mA Sinking Current	UM606		200		mV
			UM606D		100		
Total Supply Current	I _{CC}	V _{CC} =5V	UM606		0.6	1.2	mA
			UM606D		0.5	1.0	
Input Bias Current	I _{IB}			50		nA	
Current Out of Pin I _{CTRL}	I _{IBI}	@-200mV	UM606		25		µA
			UM606D		18		
Output Short Circuit Current.	I _{OS}	Output to V _{CC} . Sink Current Only		27	50	mA	
Transconductance Gain (V _{CTRL})	G _{mV}	Sink Current Only	1	3.5		mA/mV	
Transconductance Gain (I _{CTRL}).	G _{mI}		1.5	7		mA/mV	

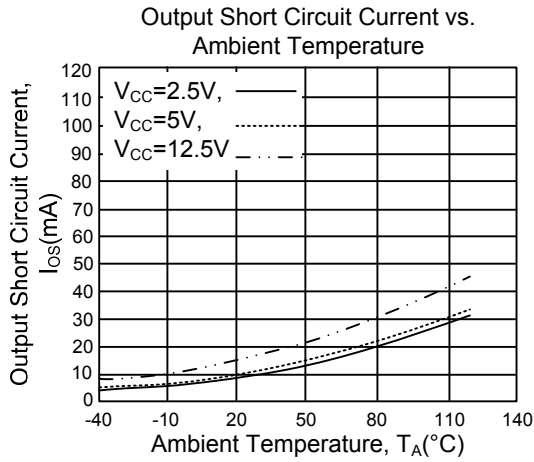
■ TYPICAL APPLICATION



■ TYPICAL PERFORMANCE CHARACTERISTICS



■ TYPICAL PERFORMANCE CHARACTERISTICS(Cont.)



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