



UCM105

Advance

LINEAR INTEGRATED CIRCUIT

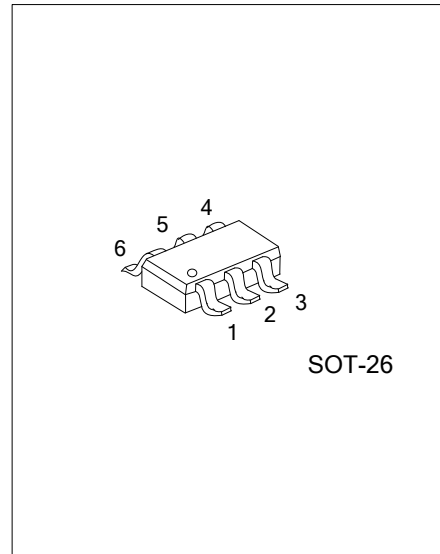
CV CONTROLLER WITH MULTI-PROTECTIONS

DESCRIPTION

The UTC **UCM105** is higher integrated circuit incorporates all advanced sensing function to control the output current.

The UTC **UCM105** integrates two groups of the OCP (Over Current Protection) which has an OVP (Over Voltage Protection), functions with related lockout to protect system. If there is no power input to VCC pin, all the state of protection functions will reset and the system will auto-recovery.

The UTC **UCM105** also provides a voltage control function which could regulate the output voltage easily.



FEATURES

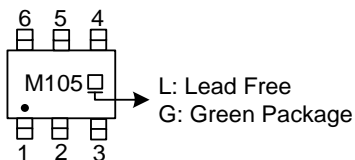
- * SPS CCCV controller
- * CMOS output stage
- * 2-OCPs/OVP latch/auto-recovery function
- * Low operation current

ORDERING INFORMATION

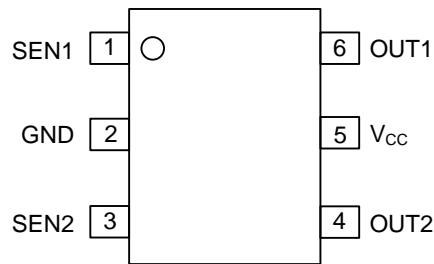
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UCM105L-AG6-R	UCM105G-AG6-R	SOT-26	Tape Reel

<p>UCM105G-AG6-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AG6: SOT-26 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



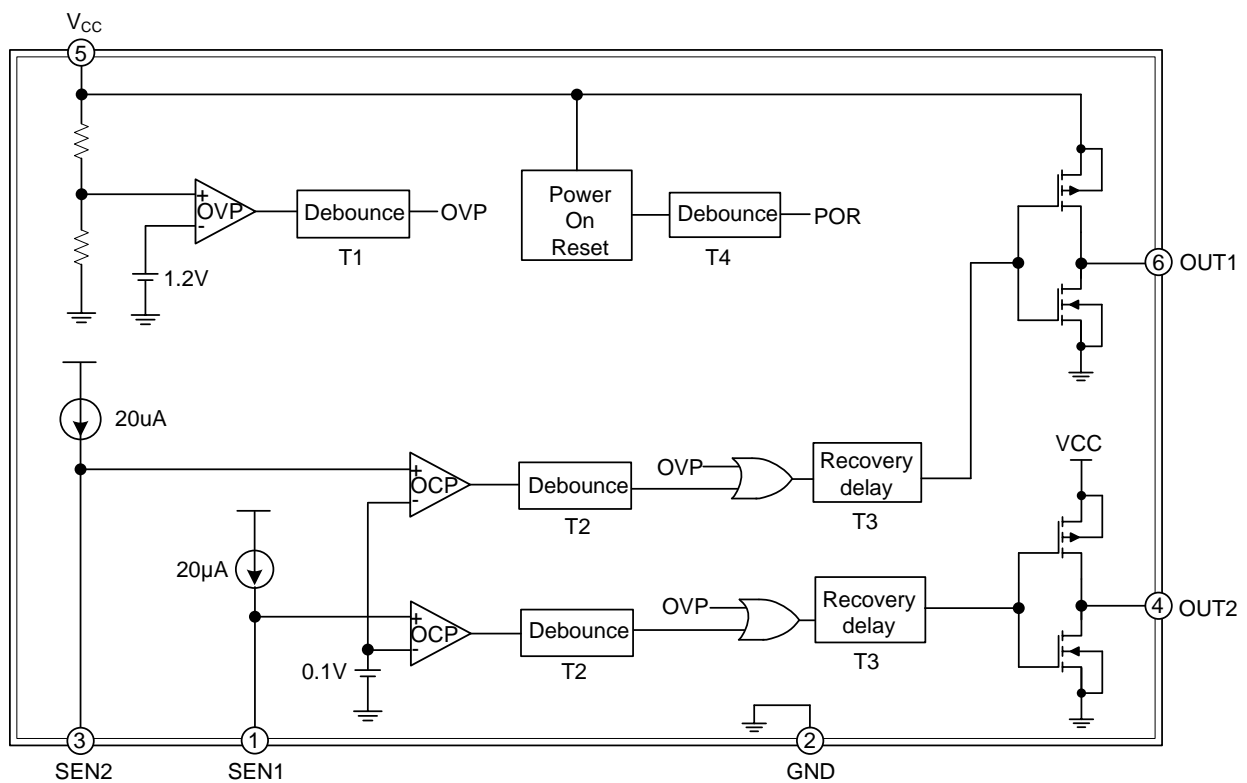
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	SEN1	OCF negative and comparator negative terminal input 1
2	GND	IC Ground, OCF positive and comparator positive terminal input
3	SEN2	OCF negative and comparator negative terminal input 2
4	OUT2	Power MOS control pin 2
5	V _{CC}	Power supply input pin
6	OUT1	Power MOS control pin 1

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.5 ~ 6	V
Input Voltage Range (GND, SEN1, SEN2)	V_I	-0.5 ~ 6	V
Output Voltage Range (OUT1,OUT2)	V_O	-0.5 ~ 6	V
Power Dissipation	P_D	350	mW
Junction Temperature	T_J	+150	°C
Operating Temperature	T_{OPR}	-25 ~ +125	°C
Storage Temperature	T_{STG}	-40 ~ +140	°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.

■ DC ELECTRICAL CHARACTERISTICS ($V_{CC}=5V$, $T_A=25^{\circ}C$)

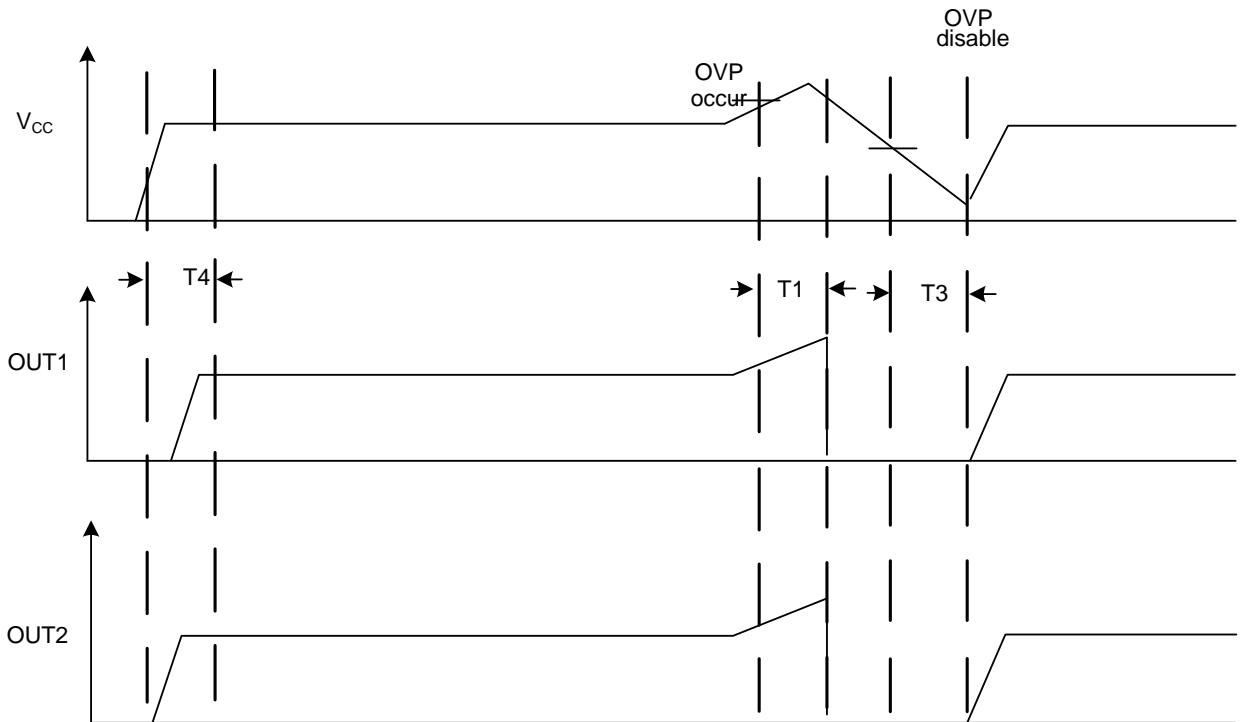
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Power Supply						
Supply Voltage	V_{CC}		3.0	5.0	5.5	V
Supply Current	I_{CC}	Standby Mode		0.3	0.6	mA
Reset Threshold Voltage	V_{IH}	HIGH→LOW		2.8		V
Over-current protection						
Offset Voltage	V_{OS}		-5	0	5	mV
ISINK Pin Drive Current	I_S		17	20	23	μA
Output Voltage Protection						
Over Voltage Protection	V_{OVP}	Pin-VCC Voltage	5.4	5.6	5.8	V
Over Voltage Protection	V_{HYS}	OVP Auto-recovery Threshold		200		mV
OUT, CMOS Driver Output						
Driver Source Current	V_{ORL}	$I_{SOURCE}=5mA$			$V_{CC}-0.4$	V
Driver Sink Current	V_{OL}	$I_{SINK}=5mA$			0.4	V

■ AC ELECTRICAL CHARACTERISTICS ($V_{CC}=5V$, $T_A=25^{\circ}C$)

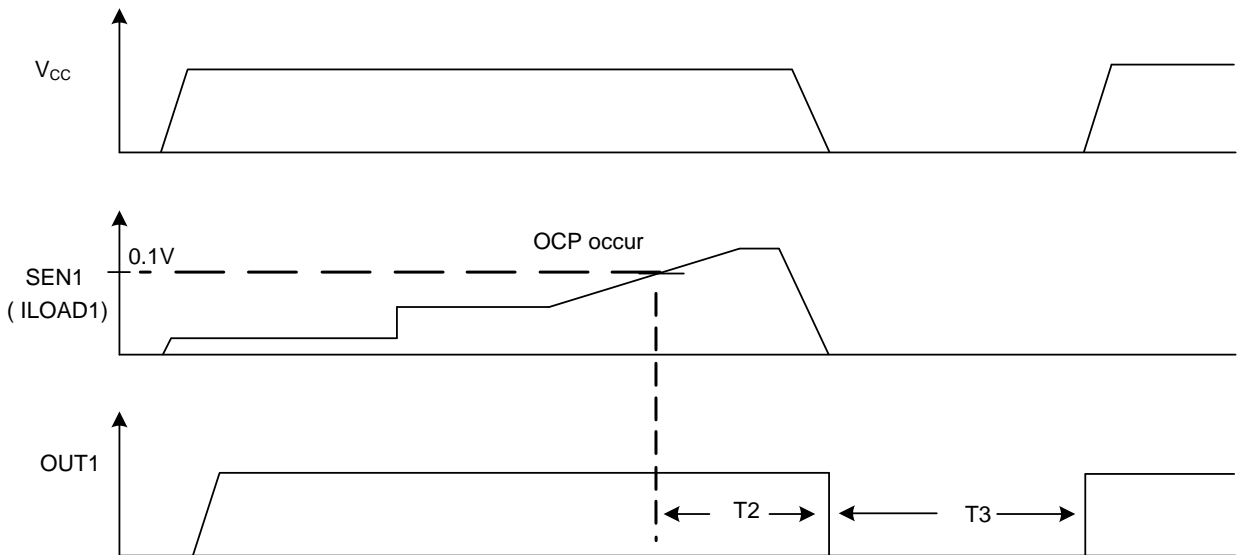
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Over Voltage Protection De-Bounce	T_1		55	75	95	μs
Over Current Protection Delay Time	T_2		30	45	60	ms
Fault Auto-Recovery Time	T_3	OUT1,2 High To Low	300	500	700	ms
Power On Reset Delay Time	T_4	$V_{CC}>VPOR$	15	25	35	ms

■ TIME CHART

OVP Latch Function:



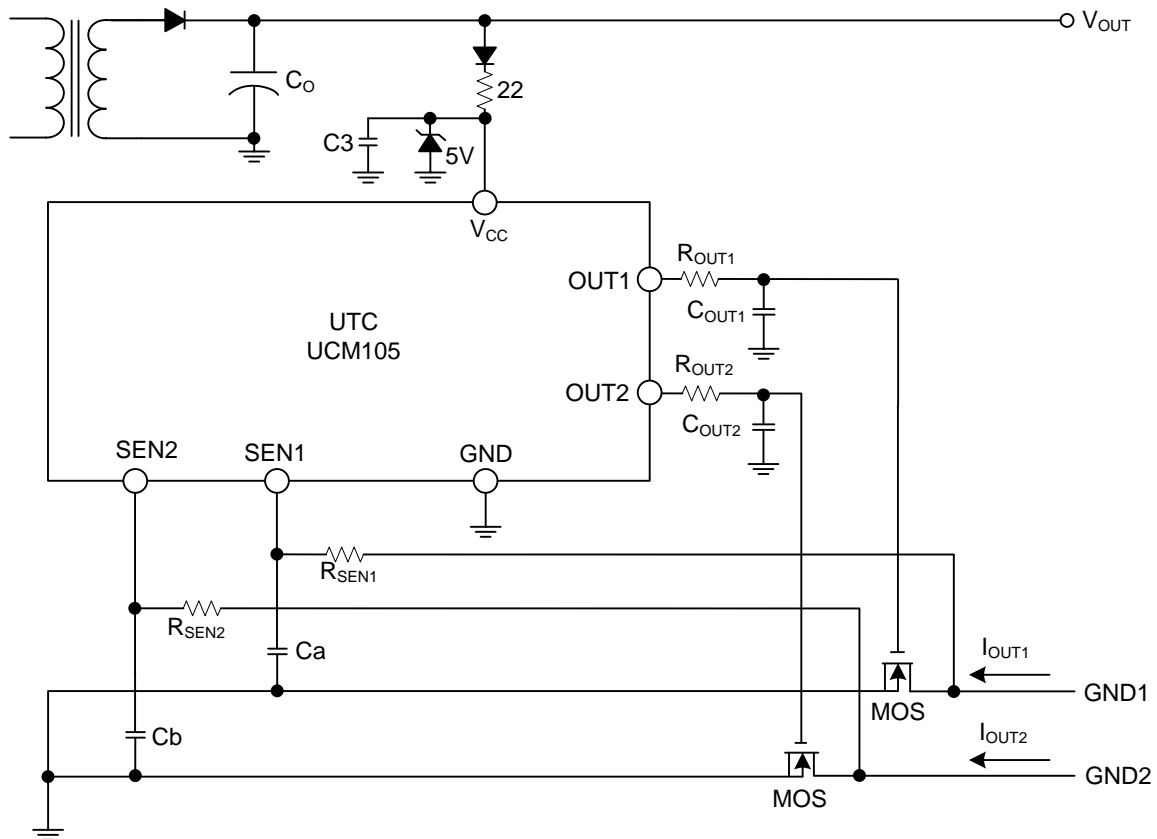
OCP Latch Function:



Output current section, the over current protection is follow equation1.

$$I_{\text{protection}} = \frac{100\text{mV} - R_{\text{sen}} * 20\mu\text{A}}{R_{\text{mos}}} \quad (\mu\text{A}) \quad \dots\dots\dots(1)$$

■ TYPICAL APPLICATION CIRCUIT



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