



## US3463

Advance

CMOS IC

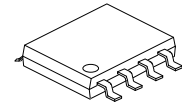
### PRIMARY SIDE DC/DC CONTROLLER

#### DESCRIPTION

The UTC **US3463** is an Ethernet powered (Power over Ethernet, PoE) DC/DC controller. It integrates a 200V power MOSFET with PSR control. It is suitable for Flyback topology, providing accurate CV control loop, high system efficiency and good EMI characteristic.

#### FEATURES

- \* PSR Mode
- \* Light Load Frequency Reduce
- \* Low Startup Current
- \* Leading-Edge Blanking
- \* Peak Current Mode
- \* Cycle by Cycle Current Limit
- \* Under-voltage Lockout
- \* Soft Start
- \* VCC Over Voltage Protection
- \* Output Short-Circuit Protection
- \* Output Over Voltage Protection
- \* Over Current Protection
- \* Over Temperature Protection



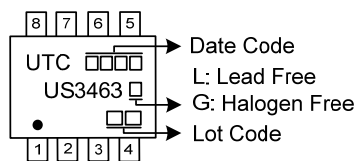
SOP-8

#### ORDERING INFORMATION

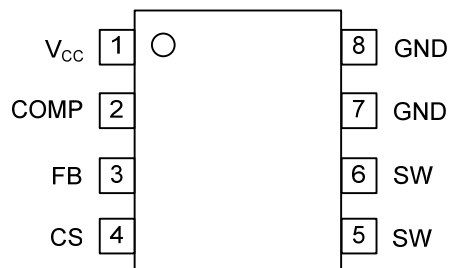
Ordering Number		Package	Packing
Lead Free	Halogen Free		
US3463L-S08-R	US3463G-S08-R	SOP-8	Tape Reel

<p>US3463G-S08-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) R: Tape Reel</li> <li>(2) S08: SOP-8</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
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#### MARKING



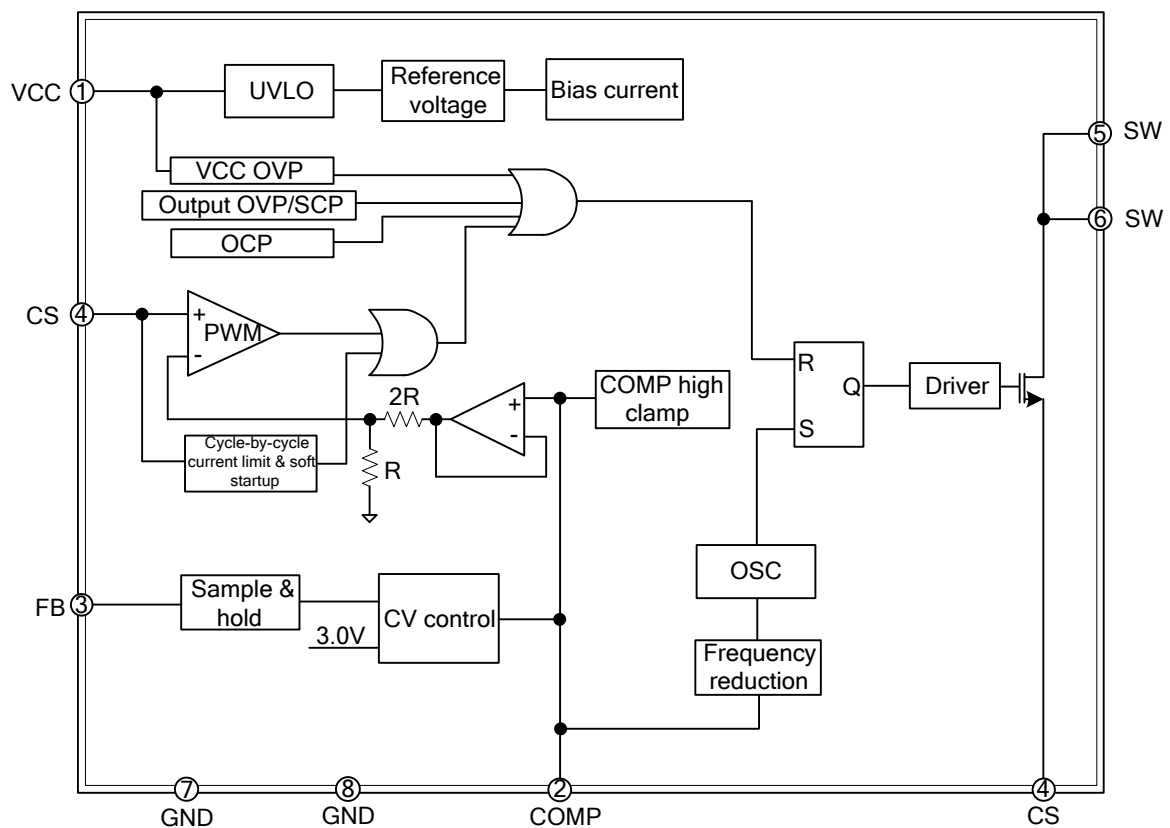
### ■ PIN CONFIGURATION



### ■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V <sub>CC</sub>	Power supply
2	COMP	Loop compensation pin
3	FB	Feedback input pin
4	CS	Current sense pin
5, 6	SW	200V POWER MOS drain
7, 8	GND	Ground

### ■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified.)

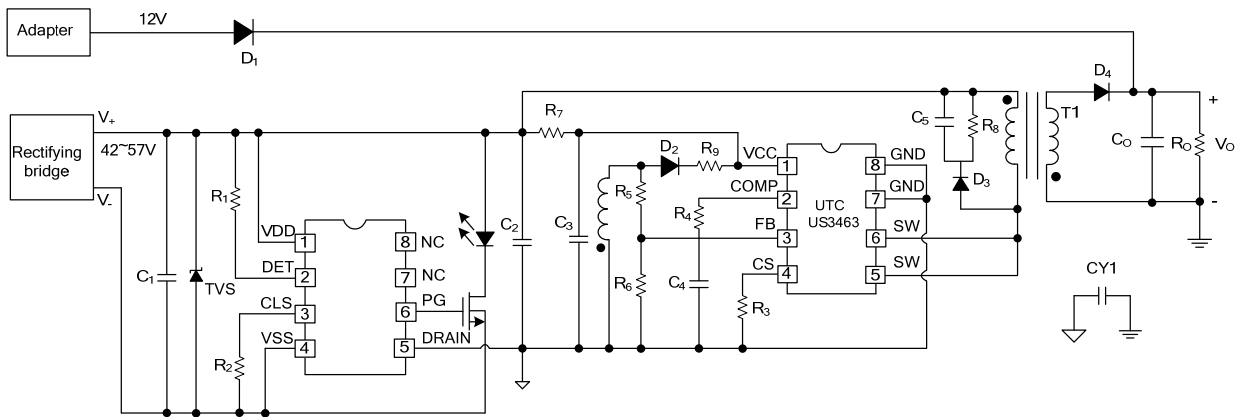
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{CC}$	-0.3 ~ 30	V
CS, COMP, FB Voltage Range		-0.3 ~ 7	V
SW Voltage Range		-0.3 ~ 200	V
$V_{CC}$ Input Current		20	mA
Operating Temperature Range	$T_A$	-40 ~ +85	$^{\circ}\text{C}$
Operating Junction Temperature	$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +125	$^{\circ}\text{C}$

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.

■ ELECTRICAL CHARACTERISTICS ( $V_{IN}=12\text{V}$ ,  $T_A=25^{\circ}\text{C}$ , unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>Power section</b>						
Operating Voltage Range	$V_{VCC}$		9.5		20	V
Startup Voltage	$V_{VCC\_ON}$		14.7	16.2	17.7	V
Shutdown Voltage	$V_{VCC\_OFF}$		7.4	8.4	9.4	V
Startup Current	$I_{ST}$	$V_{CC}=12\text{V}$ , The chip is not active		5	13	$\mu\text{A}$
Operating Current	$I_{VCC}$	$V_{CC}=18\text{V}$ , $V_{FB}=V_{CS}=0\text{V}$ , $V_{COMP}=2\text{V}$	3	3.5	4	mA
VCC Over Voltage Protection	$V_{VCC\_OVP}$		21	22.5	24	V
VCC OVP Current	$I_{VCC\_OVP}$		1.1	1.7	2.3	mA
<b>Oscillator section</b>						
Oscillator Frequency	$F_{OSC}$	$V_{FB}=V_{CS}=0\text{V}$ , $V_{COMP}=2\text{V}$	165	180	195	KHz
Minimum Frequency	$F_{OSC\_MIN}$	$V_{FB}=V_{CS}=0\text{V}$ , $V_{COMP}=0.15\text{V}$	7.5	9	10.5	KHz
Maximum Duty Cycle	$D_{MAX}$	$V_{FB}=V_{CS}=0\text{V}$ , $V_{COMP}=2\text{V}$	70	80	90	%
<b>Feedback section</b>						
Constant Voltage Threshold	$V_{REF}$		2.97	3	3.03	V
COMP High Clamp Value	$V_{COMP\_H}$		2.3	2.4	2.5	V
Output Over Voltage Protection Threshold	$V_{FB\_OVP}$		3.4	3.5	3.6	V
Output Short Circuit Threshold	$V_{FB\_SHORT}$		1.35	1.45	1.55	V
Output Short Circuit Protection Delay	$T_{FB\_SHORT}$	When the soft-start is over	7.5	8.5	9.5	mS
<b>CS section</b>						
CS Maximum Value	$V_{CS\_MAX}$		0.7	0.8	0.9	V
CS Limit Value	$V_{CS\_LIM}$		0.9	1	1.1	V
Leading Edge Blanking Time	$T_{LEB}$		300	400	500	nS
Soft Start Time	$T_{SS}$		4.6	5.6	6.6	mS
<b>Overheat protection section</b>						
Over-Temperature Protection	$T_{OTP}$		135	150	165	$^{\circ}\text{C}$
Over Temperature Protection Hysteresis	$T_{OTP\_HYS}$			20		$^{\circ}\text{C}$

■ TYPICAL APPLICATION CIRCUIT



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