



P34563

LINEAR INTEGRATED CIRCUIT

PWM CONTROL 3A STEP-DOWN CONVERTER

DESCRIPTION

The UTC **P34563** consists of step-down switching regulator with PWM control.

The UTC **P34563** provides low-ripple power, high efficiency, and excellent transient characteristics. The PWM control circuit is able to the duty ratio linearly forms 0 up to 100%. With the addition of an internal P-channel Power MOS, and a diode connected externally, these ICs can function as step-down switching regulators. They serve as ideal power supply units for portable devices when coupled with the HSOP-8 package, providing such outstanding features as low current consumption. Since this converter can accommodate an input voltage up to 40V.



FEATURES

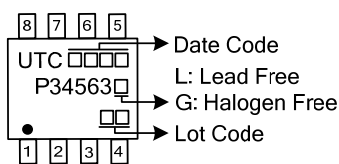
- * Input voltage: 8V~40V
- * Oscillation frequency: 100KHz
- * Duty ratio: 0%~100% PWM control
- * Adjustable version output voltage range from 3.3V to 38V
- * Enable and auto restart function.
- * Short Circuit Protect (SCP).
- * Thermal Shutdown function / Internal OVP.
- * Built-in internal SW P-channel MOS.

ORDERING INFORMATION

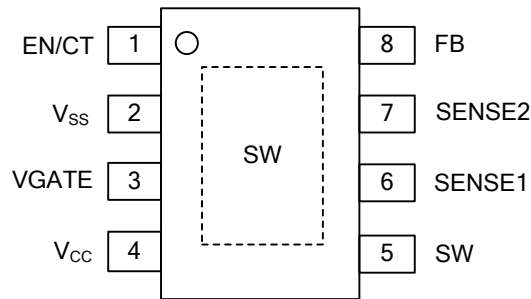
Ordering Number		Package	Packing
Lead Free	Halogen Free		
P34563L-SH2-R	P34563G-SH2-R	HSOP-8	Tape Reel

<p>P34563G-SH2-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) SH2: HSOP-8 (3) G: Halogen Free and Lead Free
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MARKING



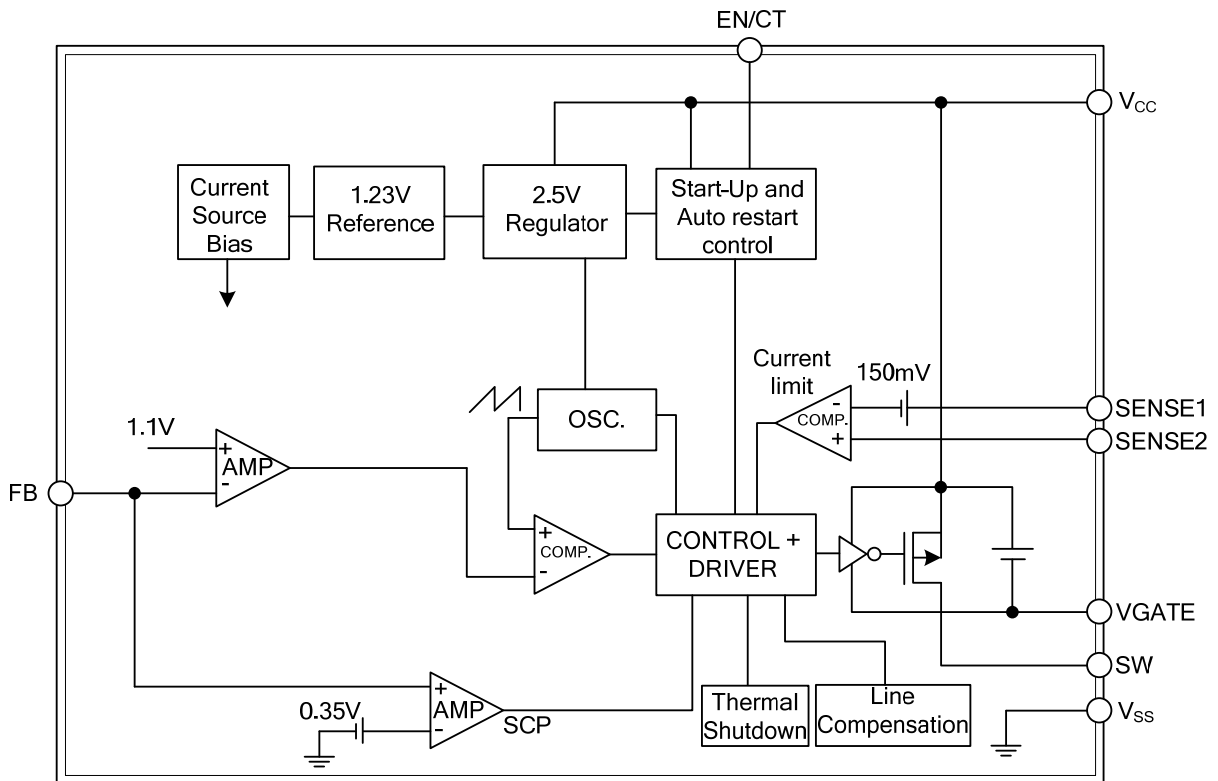
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	EN/CT	ON/OFF and auto restart control
2	V _{SS}	GND pin
3	VGATE	Driver gate clamping pin.
4	V _{CC}	Operating voltage input
5	SW	Switch pin.
6	SENSE1	Current sense input1
7	SENSE2	Current sense input2
8	FB	Feedback pin

BLOCK DIAGRAM



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

PARAMETER	SYMBOL	RATINGS	UNIT
VCC Pin Voltage	V _{CC}	40	V
EN/CT Voltage		6	V
SENSE1,SENSE2 Pin Voltage		38	V
Switch Pin Voltage	V _{SW}	V _{CC}	V
Power Dissipation	P _D	(T _J -T _A)/θ _{JA}	W
Operating Supply Voltage	V _{OP}	+8 ~ +40	V
Output Current	I _{OUT}	0 ~ 3	A
Operating Temperature	T _{OPR}	-20 ~ +125	°C
Storage Temperature	T _{STG}	-40 ~ +165	°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 CHARACTERISTICS

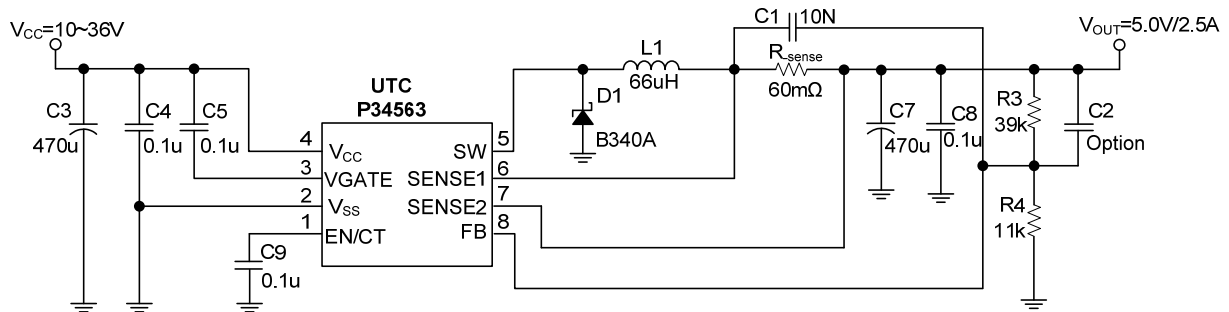
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	143	°C/W
Junction to Case	θ _{JC}	15	°C/W

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
FB	V _{FB}	I _{OUT} =10mA	1.08	1.10	1.12	V
Under Voltage Lockout	U _{VLO}	Falling		6		V
UVLO Hysteresis				0.8		V
Line Regulation	ΔV _{OUT}	V _{CC} =10~40V		0.5	1	%
Load Regulation	ΔV _{OUT}	I _{OUT} =0~1A, R _{SENSE} =140mΩ		10		mV
Quiescent Current	I _{CCQ}	V _{FB} >1.2V		3	7	mA
Oscillator Frequency	F _{OSC}		80	100	120	KHz
Max. Duty Cycle (ON)	DC	Force Driver On V _{FB} =0.7V		100		%
Min. Duty Cycle (OFF)		Force Driver Off V _{FB} =1.2V		0		%
Internal MOSFET R _{DS(ON)}	R _{DS(ON)}	V _{CC} =12V, V _{FB} = 0.7V		110	170	mΩ
Sense Voltage	V _{SENSE}	V _{SENSE1} -V _{SENSE2}	135	150	165	mV
EN/CT Pin Logic Input Threshold Voltage	V _{EN}	Shutdown Mode			0.3	V
	V _{CT}	Auto Restart, V _{FB} <0.4V	0.5		1.5	V
EN/CT Pin Current	I _{EN/CT-C}	Charge Current		-32		μA
EN/CT Pin Current	I _{EN/CT-D}	Discharge Current		1.5		μA
Thermal Shutdown Temp	T _{SD}			160		°C
Thermal Shutdown Hysteresis	T _{SH}			40		°C

■ TYPICAL APPLICATION CIRCUIT

AL CAPACITOR



$$\text{Current Limit (A)} = \frac{150\text{mV}}{R_{\text{sense}}}$$

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