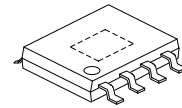


**P34563****LINEAR INTEGRATED CIRCUIT****PWM CONTROL 3A
STEP-DOWN CONVERTER****DESCRIPTION**

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.

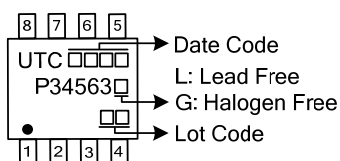
**HSOP-8****FEATURES**

- * 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.

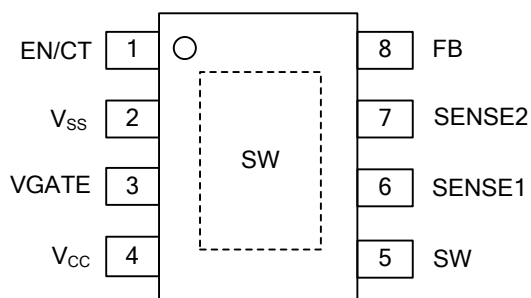
ORDERING INFORMATION

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

P34563G-SH2-R (1) Packing Type (2) Package Type (3) Green Package	(1) R: Tape Reel (2) SH2: HSOP-8 (3) G: Halogen Free and Lead Free
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MARKING

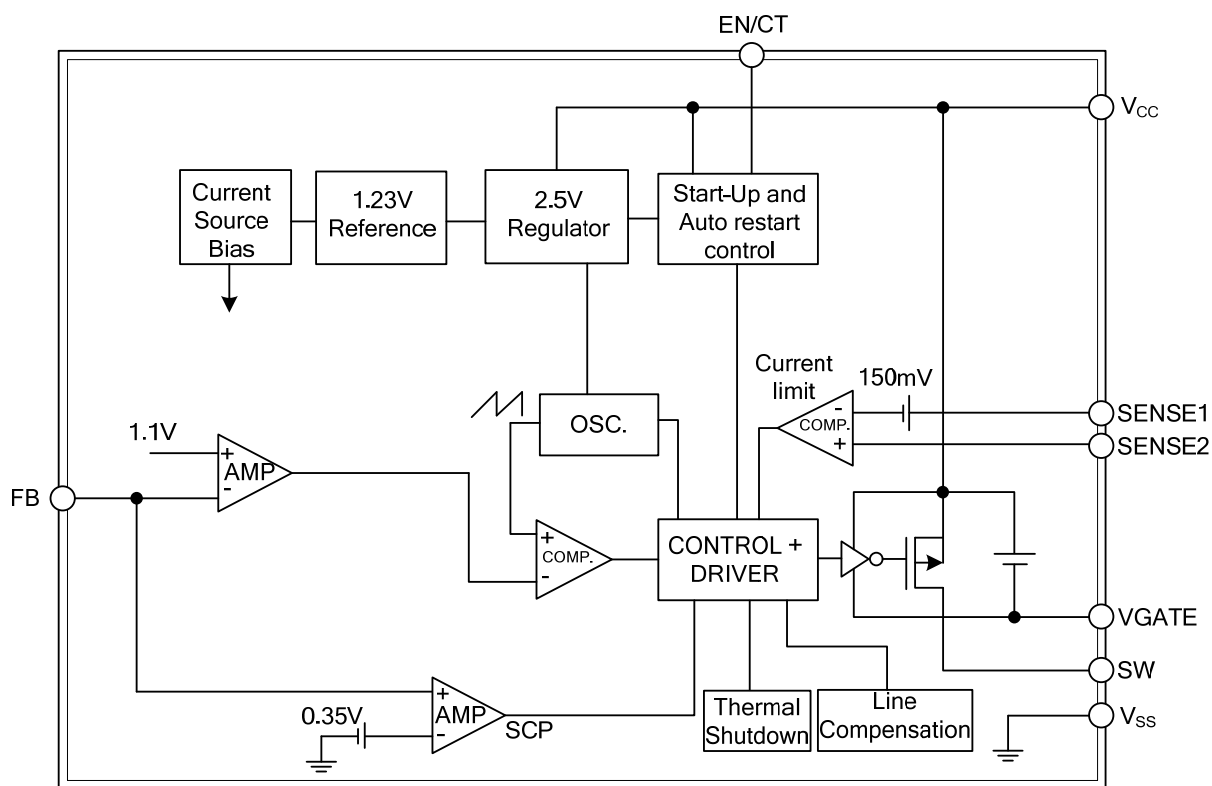
PIN CONFIGURATION



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** ($T_A=25^{\circ}\text{C}$, 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	$(T_J - T_A) / \theta_{JA}$	W
Operating Supply Voltage	V_{OP}	+8 ~ +40	V
Output Current	I_{OUT}	0 ~ 3	A
Operating Temperature	T_{OPR}	-20 ~ +125	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-40 ~ +165	$^{\circ}\text{C}$

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.

■ **THERMAL CHARACTERISTICS**

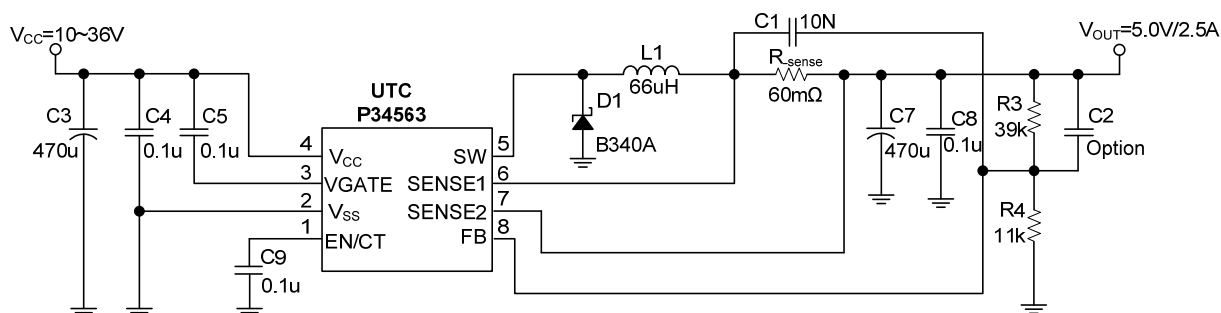
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	143	$^{\circ}\text{C/W}$
Junction to Case	θ_{JC}	15	$^{\circ}\text{C/W}$

■ **ELECTRICAL CHARACTERISTICS**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
FB	V_{FB}	$I_{OUT}=10\text{mA}$	1.08	1.10	1.12	V
Under Voltage Lockout	U_{VLO}	Falling		6		V
UVLO Hysteresis				0.8		V
Line Regulation	ΔV_{OUT}	$V_{CC}=10\sim 40\text{V}$		0.5	1	%
Load Regulation	ΔV_{OUT}	$I_{OUT}=0\sim 1\text{A}$, $R_{SENSE}=140\text{m}\Omega$		10		mV
Quiescent Current	I_{CCQ}	$V_{FB}>1.2\text{V}$		3	7	mA
Oscillator Frequency	F_{OSC}		80	100	120	KHz
Max. Duty Cycle (ON)	DC	Force Driver On $V_{FB}=0.7\text{V}$		100		%
Min. Duty Cycle (OFF)		Force Driver Off $V_{FB}=1.2\text{V}$		0		%
Internal MOSFET $R_{DS(ON)}$	$R_{DS(ON)}$	$V_{CC}=12\text{V}$, $V_{FB}=0.7\text{V}$		110	170	$\text{m}\Omega$
Sense Voltage	V_{SENSE}	$V_{SENSE1}-V_{SENSE2}$	135	150	165	mV
EN/CT Pin Logic Input Threshold	V_{EN}	Shutdown Mode			0.3	V
Voltage	V_{CT}	Auto Restart, $V_{FB}<0.4\text{V}$	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		$^{\circ}\text{C}$
Thermal Shutdown Hysteresis	T_{SH}			40		$^{\circ}\text{C}$

■ TYPICAL APPLICATION CIRCUIT

AL CAPACITOR



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

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