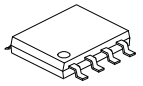
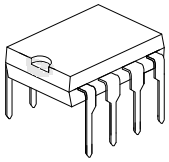
UC34163

LINEAR INTEGRATED CIRCUIT

DC TO DC CONVERTER CONTROLLER



SOP-8



DIP-8

■ DESCRIPTION

The UTC **UC34163** is a monolithic regulator subsystem, intended for use as DC-to-DC converter. This device contains a temperature compensated reference, 2 comparators, a duty-cycle control oscillator, driver and high current output switch.

■ FEATURES

* Maximum input voltage is 35V.
* Low standby current.
* Output switch current to 1.5A.
* Frequency of operation from 100Hz ~ 100kHz.
* Step-down switch regulators.

■ ORDERING INFORMATION

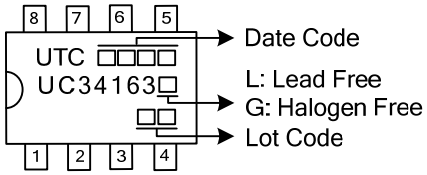
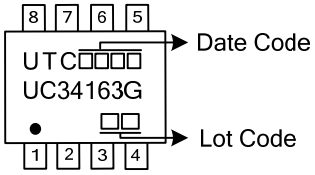
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UC34163L-D08-T	UC34163G-D08-T	DIP-8	Tube
-	UC34163G-S08-R	SOP-8	Tape Reel

UC34163L-D08-T

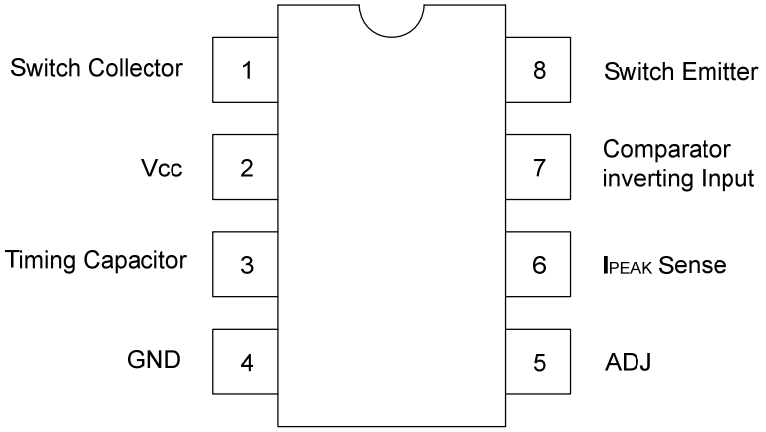
(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel, T: Tube
(2) D08: DIP-8, S08: SOP-8
(3) L: Lead Free, G: Halogen Free and Lead Free

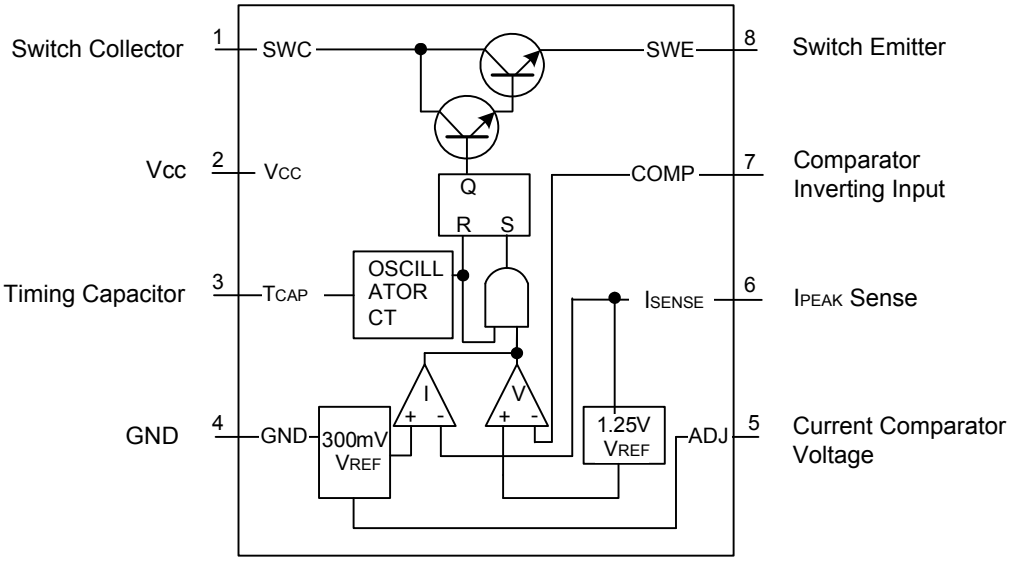
■ MARKING

DIP-8	SOP-8
	

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



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

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V_{CC}	35	V
Comparator Input Voltage Range		$V_{IN(COMP)}$	-0.3 ~ +35	V
Switch Collector Voltage		$V_{C(SW)}$	35	V
Switch Emitter Voltage		$V_{E(SW)}$	35	V
Switch Collector To Emitter Voltage		$V_{CE(SW)}$	35	V
Output Switch Current		I_{OUT}	1.5	A
Power Dissipation (Ta=25°C)	DIP-8	P_D	1250	mW
	SOP-8		625	mW
Operating Junction Temperature		T_J	+125	°C
Operating Temperature		T_{OPR}	-20 ~ +85	°C
Storage Temperature		T_{STG}	-40 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. The device is guaranteed to meet performance specification within 0℃~+70℃ operating temperature range and assured by design from -20°C ~+85°C, characteristic and correlation with static process control.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Case	DIP-8	θ_{JC}	100	°C/W
	SOP-8		160	

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, V_{CC} = 5.0V, T_A=0~70°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Oscillator						
Frequency (C_T=470pF, T_A=25°C)	F_{OSC}		25	35	45	kHz
Charging Current	I_{CHG}	V_{CC}=5 ~ 35V, T_A=25°C	20	30	40	μA
Discharging Current	I_{DISCHG}	V_{CC}=5 ~ 35V, T_A=25°C	140	200	260	μA
Oscillator Amplitude	V_{OSC}	T_A=25°C		0.8		V
Discharge to Charge Current Ratio	K	T_A=25°C	5.2		8.0	
Output Switch						
Saturation Voltage 1(Note)	$V_{CE(SAT)}$	I_{SW}=1.0A			1.4	V
Collector Off State Current (Note)	$I_{C(OFF)}$	V_{CE}=35.0V, T_A=25°C		0.01	100	μA
ADJ						
Current limit Sense Voltage	V_{SENSE}		280	300	360	mV
Comparator						
Threshold Voltage 1	V_{THD1}		1.21	1.24	1.29	V
Threshold Voltage 2	V_{THD2}		280	300	360	mV
Threshold Voltage Line Regulation	$\triangle V_{THD1}$	V_{CC}=5 ~ 35V		2.0	5.0	mV
Input Bias Current	I_{BIAS}	V_{IN}=0V		50	400	nA
Total Device						
Supply Current	I_{CC}	V_{CC}=5 ~ 35V, C_T=470pF V_6=GND, V_7>V_{THD1}		2.5	4.0	mA

Note: Output switch tests are performed under pulsed conditions to minimize power dissipation.

■ TYPICAL APPLICATION CIRCUIT