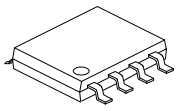
1.5A, STEP-UP/DOWN/INVERTING SWITCHING REGULATORS



SOP-8

■ DESCRIPTION

The UTC **MC3063** Series is a higher frequency DC−DC converters. These devices consist of an internal temperature compensated reference, comparator, a controlled duty cycle oscillator with an active current limit circuit, a driver and a high current output switch. This series was specifically designed to be incorporated in Step−Down, Step−Up and Voltage−Inverting applications with a minimum number of external components.

■ FEATURES

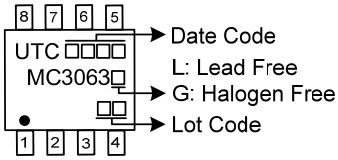
* MAX. 40V Input
* MAX. load to 1.5A
* Output Voltage Adjustable
* Frequency Operation of 150kHz
* Precision 1.5% Reference

■ ORDERING INFORMATION

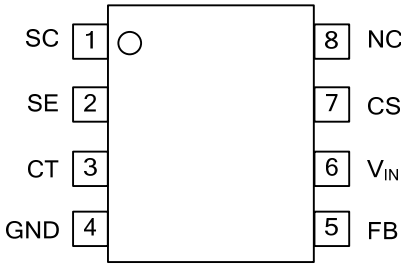
Ordering Number		Package	Packing
Lead Free	Halogen Free		
MC3063L-S08-R	MC3063G-S08-R	SOP-8	Tape Reel

MC3063G-S08-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



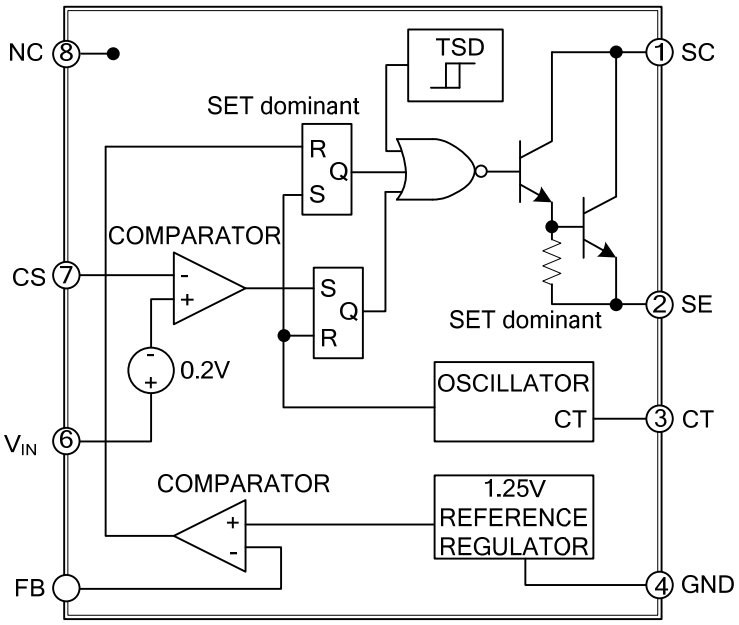
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	SC	Internal Darlington switch collector
2	SE	Internal Darlington switch emitter
3	CT	Timing Capacitor
4	GND	Ground
5	FB	Feedback Voltage
6	V_{IN}	Voltage Supply
7	CS	Peak Current Sense
8	N.C.	Pin Not Connected

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
V_{IN} Pin 6	V_{CC}	0 ~ +40	V
FB Pin 5	V_{CII}	-0.2 ~ +V_{CC}	V
Darlington SC Pin 1	V_{SWC}	0 ~ +40	V
Darlington SE Pin 2 (Transistor OFF)	V_{SWE}	-0.6 ~ +V_{CC}	V
Darlington SC to SE Pin 1~2	V_{SWCE}	0 ~ +40	V
Darlington Switch Current	I_{SW}	1.5	A
CS Pin 7	V_{IPK}	-0.2 ~ V_{CC}+0.2	V
CT Pin 3	V_{TCAP}	-0.2 ~ +1.4	V

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.

■ POWER DISSIPATION AND THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance, Junction−to−Air	$R_{\theta JA}$	180	°C/W
Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	45	
Storage Temperature Range	T_{STG}	-65 ~ +150	°C
Maximum Junction Temperature	$T_{J\ MAX}$	+150	°C
Operating Junction Temperature Range	T_J	0 ~ +70	°C

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OSCILLATOR						
Frequency	f_{OSC}	V_{Pin} 5=0V, CT=2.2nF, T_J=25°C	110	150	190	kHz
Capacitor Discharging Current	I_{DISCHG}	Pin 7 to V_{IN}, T_J=25°C		1600		μA
Capacitor Charging Current	I_{CHG}	Pin 7 to V_{IN}, T_J=25°C		270		μA
Current Limit Sense Voltage	$V_{IPK\ (Sense)}$	T_J=25°C	165	200	235	mV
OUTPUT SWITCH						
Darlington Switch Collector to Emitter Voltage Drop	$V_{SWCE\ (DROP)}$	I_{SW}=1.0A, Pin 2 to GND, T_J=25°C		1.0	1.3	V
Collector Off−State Current	$I_{C\ (OFF)}$	V_{CE}=40V		0.01	100	μA
COMPARATOR						
Feedback Voltage	V_{FB}	T_J=25°C		1.250		V
			-1.5		+1.5	%
Threshold Voltage Line Regulation	REG_{LINE}	V_{IN}=5.0V~40V	-6.0	2.0	6.0	mV
TOTAL DEVICE						
Supply Current	I_{IN}	V_{IN}=5.0V~40V, CT=2.2nF, Pin 7=V_{IN}, V_{Pin} 5>V_{th}, Pin 2=GND, remaining pins open			7.0	mA
Thermal Shutdown Threshold				160		°C
Hysteresis				10		°C

Note: T_{LOW}=0°C, T_{high}=+70°C.

■ TYPICAL APPLICATION CIRCUIT