



MC3063

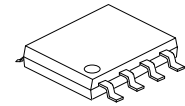
Preliminary

CMOS IC

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

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.



SOP-8

FEATURES

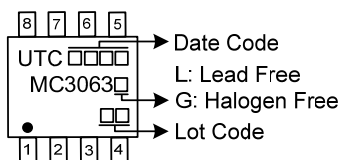
- * MAX. 40V Input
- * Output Switch Current to 1.5A
- * Output Voltage Adjustable
- * Frequency Operation of 150kHz
- * Precision 1.5% Reference

ORDERING INFORMATION

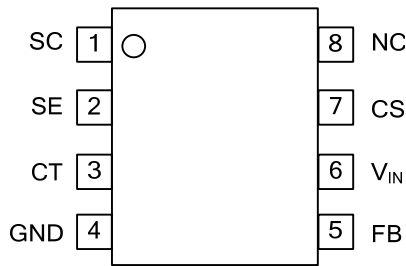
Ordering Number		Package	Packing
Lead Free	Halogen Free		
MC3063L-S08-R	MC3063G-S08-R	SOP-8	Tape Reel

<p>MC3063G-S08-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) S08: SOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



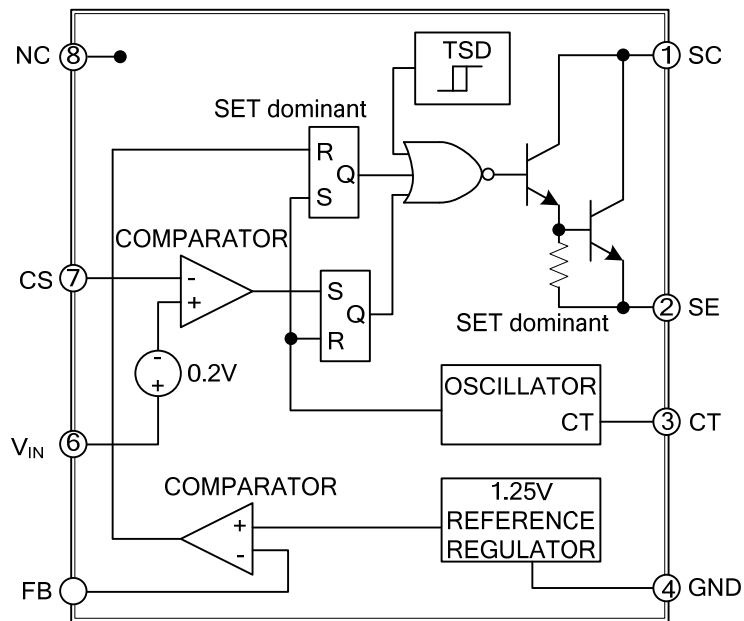
■ PIN CONFIGURATION



■ 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 _{CH}	-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
Operating Junction Temperature Range	T _J	0 ~ +70	°C
Maximum Junction Temperature	T _{J MAX}	+150	°C
Storage Temperature Range	T _{STG}	-65 ~ +150	°C

■ THERMAL DATA

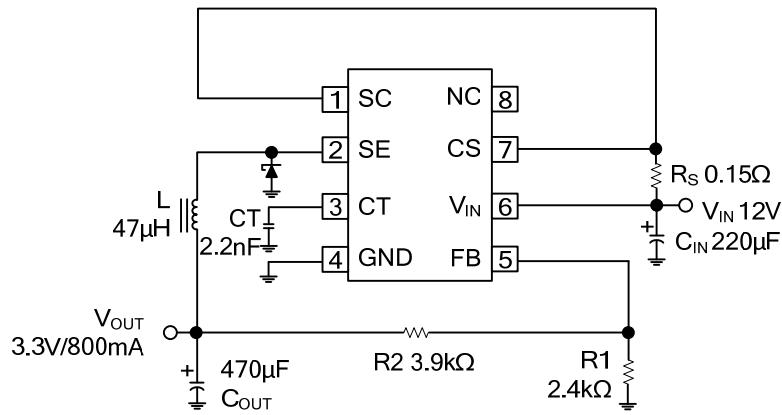
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	180	°C/W
Junction to Case	θ _{JC}	45	°C/W

■ 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



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