

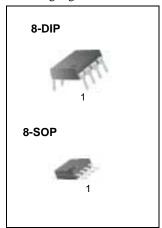
MC34063A/MC33063A SMPS Controller

Features

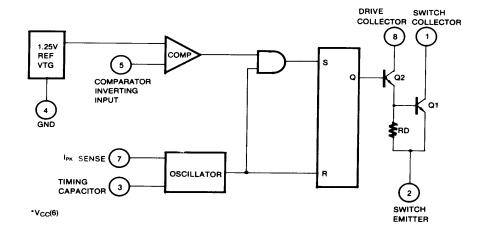
- Operation from 3.0 to 40V input
- · Short circuit current limiting
- Low standby current
- Output switch current of 1.5A without external transistors
- Output voltage adjustable
- Frequency of operation from 100Hz to 100KHz
- Step up, Step down or inverting switching regulators

Description

The MC34063A/MC33063A is a monolithic regulator sub system intended for use as DC to DC converter. This device contains a temperature compensated bandgap reference, a duty cycle control oscillator, driver and high current output switch. It can be used for step down, step up or inverting switching regulators as well as for series pass regulators.



Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Supply Voltage	Vcc	40	V
Comparator Input Voltage Range	VI(COMP)	- 0.3 ~ + 40	V
Switch Collector Voltage	Vc(SW)	40	V
Switch Emitter Voltage	VE(SW)	40	V
Switch Collector To Emitter Voltage	VCE(SW)	40	V
Driver Collector Voltage	VC(DR)	40	V
Switch Current	Isw	1.5	А
Storage Temperature Range	T _{STG}	- 65 ~ + 150	°C

Electrical Characteristics

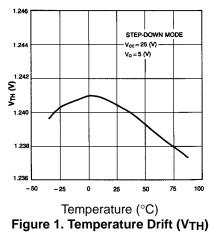
(VCC = 5.0V, TA = 0° C to +70°C for the MC34063, TA= -40°C to the +85°C for the MC33063, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
OSCILLATOR						
Charging Current	ICHG	VCC = 5 to 40V T _A = 25°C	22	31	42	μΑ
Discharging Current	IDISCHG	V _{CC} = 5 to 40V T _A = 25°C	140	190	260	μΑ
Oscillator Amplitude	V(OSC)	T _A = 25°C	-	0.5	-	V
Discharge To Charge Current Ratio	K	V7 = VCC , TA = 25°C	5.2	6.1	7.5	-
Current Limit Sense Voltage	VSENSE(C.L)	ICHG = IDISCHG T _A = 25°C	250	300	350	mV
OUTPUT SWITCH						
Saturation Voltage 1 (Note)	VCE(SAT)1	ISW = 1.0A VC(driver) = VC(SW)	-	0.95	1.3	V
Saturation Voltage 2 (Note)	VCE(SAT)2	Isw = 1.0A, Vc(driver) = 50mA	-	0.45	0.7	V
DC Current Gain (Note)	GI(DC)	ISW = 1.0A, VCE = 5.0V, TA = 25°C	50	180	-	-
Collector off State Current (Note)	IC(OFF)	VCE = 40V, T _A = 25°C	-	0.01	100	μΑ
COMPARATOR						
Threshold Voltage	VTH	-	1.21	1.24	1.29	V
Threshold Voltage Line Regulation	ΔVTH	VCC = 3 to 40V	-	2.0	5.0	mV
Input Bias Current	IBIAS	V _I = 0V	-	50	400	nA
TOTAL DEVICE						
Supply Current MC34063	Icc	V _{CC} = 5 to 40V C _T = 0.001uF V ₇ = V _{CC} , V ₅ >V _{TH}	-	-	4.0	mA
MC33063]	pin2 = GND	-	-	5.0	

Note :

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

Typical Performance Characteristics



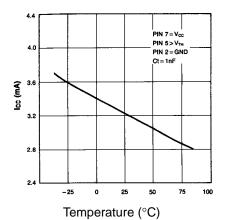
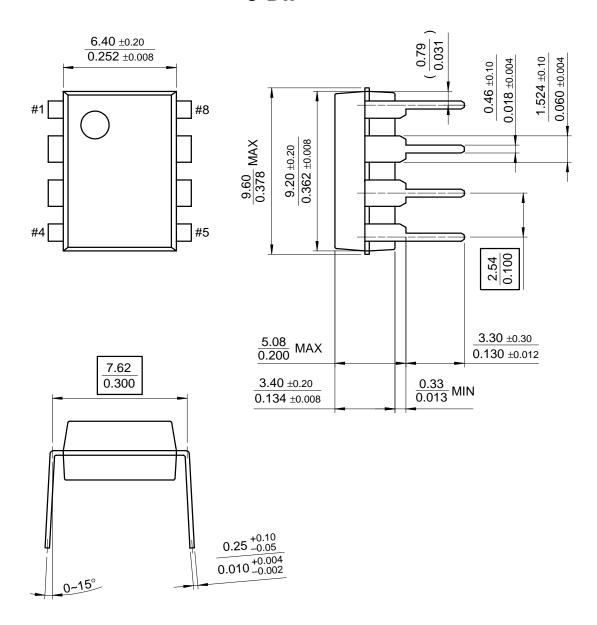


Figure 2. Temperature Drift (IOC)

Mechanical Dimensions

Package

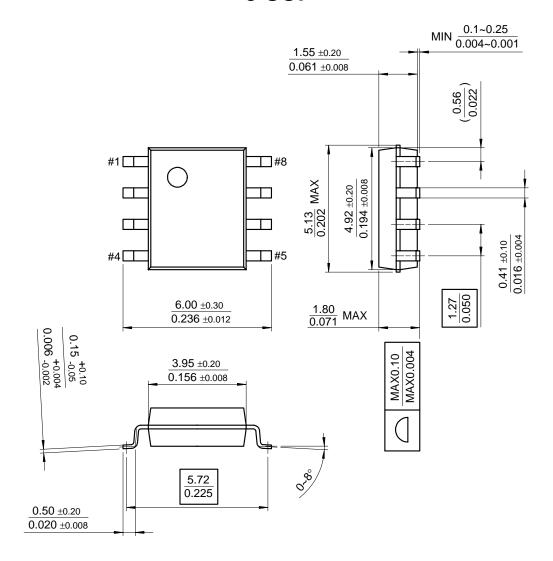
8-DIP



Mechanical Dimensions (Continued)

Package

8-SOP



Ordering Informatio

Product Number	Package	Operating Temperature	
MC34063AP	8-DIP	0 ~ + 70°C	
MC34063AD	8-SOP	0~+700	
MC33063AP	8-DIP	-40 ~ + 85°C	
MC33063AD	8-SOP		

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