

MC34063A

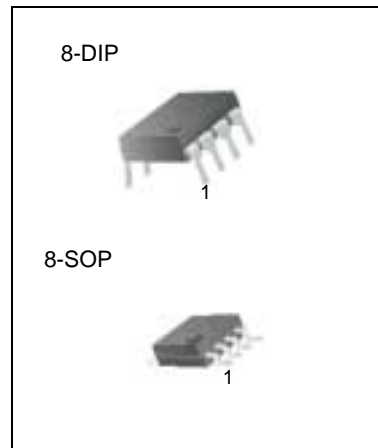
SMPS Controller

Features

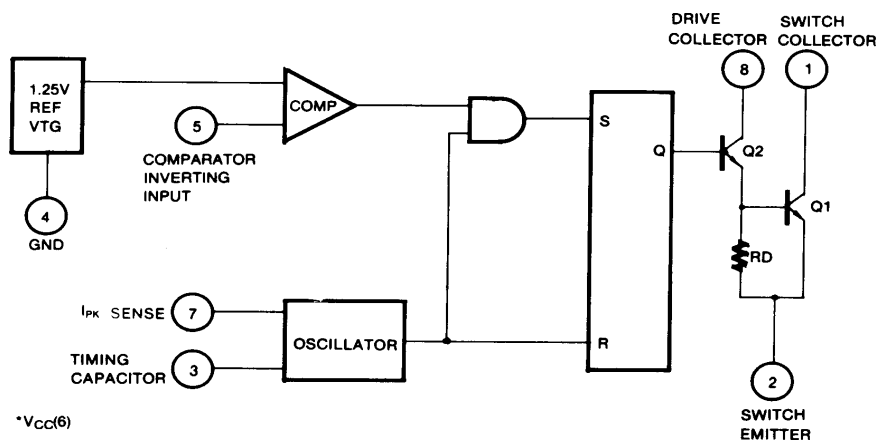
- Operation From 3.0 to 40V Input
- Short Circuit Current Limiting
- Low Standby Current
- Output Switch Current of 1.5A Without External Transistors
- Output Voltage Adjustable
- Frequency Of Operation From 100Hz to 100KHz
- Step-Up, Step-Down or Inverting Switching Regulators

Description

The MC34063A 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	V _{CC}	40	V
Comparator Input Voltage Range	V _I (COMP)	- 0.3 ~ + 40	V
Switch Collector Voltage	V _C (SW)	40	V
Switch Emitter Voltage	V _E (SW)	40	V
Switch Collector To Emitter Voltage	V _{CE} (SW)	40	V
Driver Collector Voltage	V _C (DR)	40	V
Switch Current	I _{SW}	1.5	A

Electrical Characteristics

(V_{CC} = 5.0V, T_A = 0°C to +70°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OSCILLATOR						
Charging Current	I _{CHG}	V _{CC} = 5 to 40V T _A = 25°C	22	31	42	μA
Discharging Current	I _{DISCHG}	V _{CC} = 5 to 40V T _A = 25°C	140	190	260	μA
Oscillator Amplitude	V(OSC)	T _A = 25°C		0.5	-	V
Discharge To Charge Current Ratio	K	V ₇ = V _{CC} , T _A = 25°C	5.2	6.1	7.5	-
Current Limit Sense Voltage	V _{SENSE} (C.L)	I _{CHG} = I _{DISCHG} T _A = 25°C	250	300	350	mV
OUTPUT SWITCH						
Saturation Voltage 1 (Note)	V _{CE} (SAT)1	I _{SW} = 1.0A V _C (driver) = V _C (SW)	-	0.95	1.3	V
Saturation Voltage 2 (Note)	V _{CE} (SAT)2	I _{SW} = 1.0A, V _C (driver) = 50mA	-	0.45	0.7	V
DC Current Gain (Note)	G _I (DC)	I _{SW} = 1.0A, V _{CE} = 5.0V, T _A = 25°C	50	180	-	-
Collector off State Current (Note)	I _C (OFF)	V _{CE} = 40V, T _A = 25°C	-	10	100	nA
COMPARATOR						
Threshold Voltage	V _{TH}	-	1.21	1.24	1.29	V
Threshold Voltage Line Regulation	ΔV _{TH}	V _{CC} = 3 to 40V	-	2.0	5.0	mV
Input Bias Current	I _{BIAS}	V _I = 0V		50	400	nA
TOTAL DEVICE						
Supply Current	I _{CC}	V _{CC} = 5 to 40V C _T = 0.001μF V ₇ = V _{CC} , V ₅ > V _{TH} pin2 = GND	-	2.7	4.0	mA

Note :

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

Typical Performance Characteristics

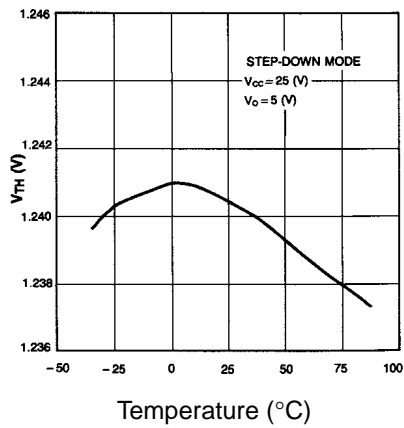


Figure 1. Temperature Drift (V_{TH})

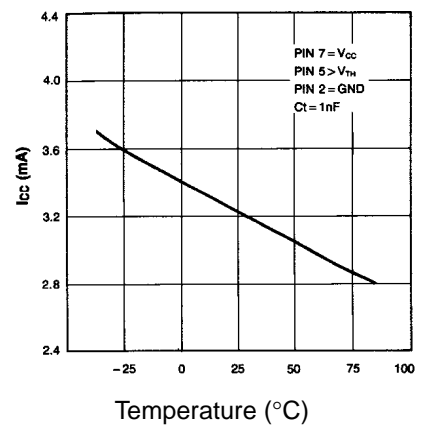
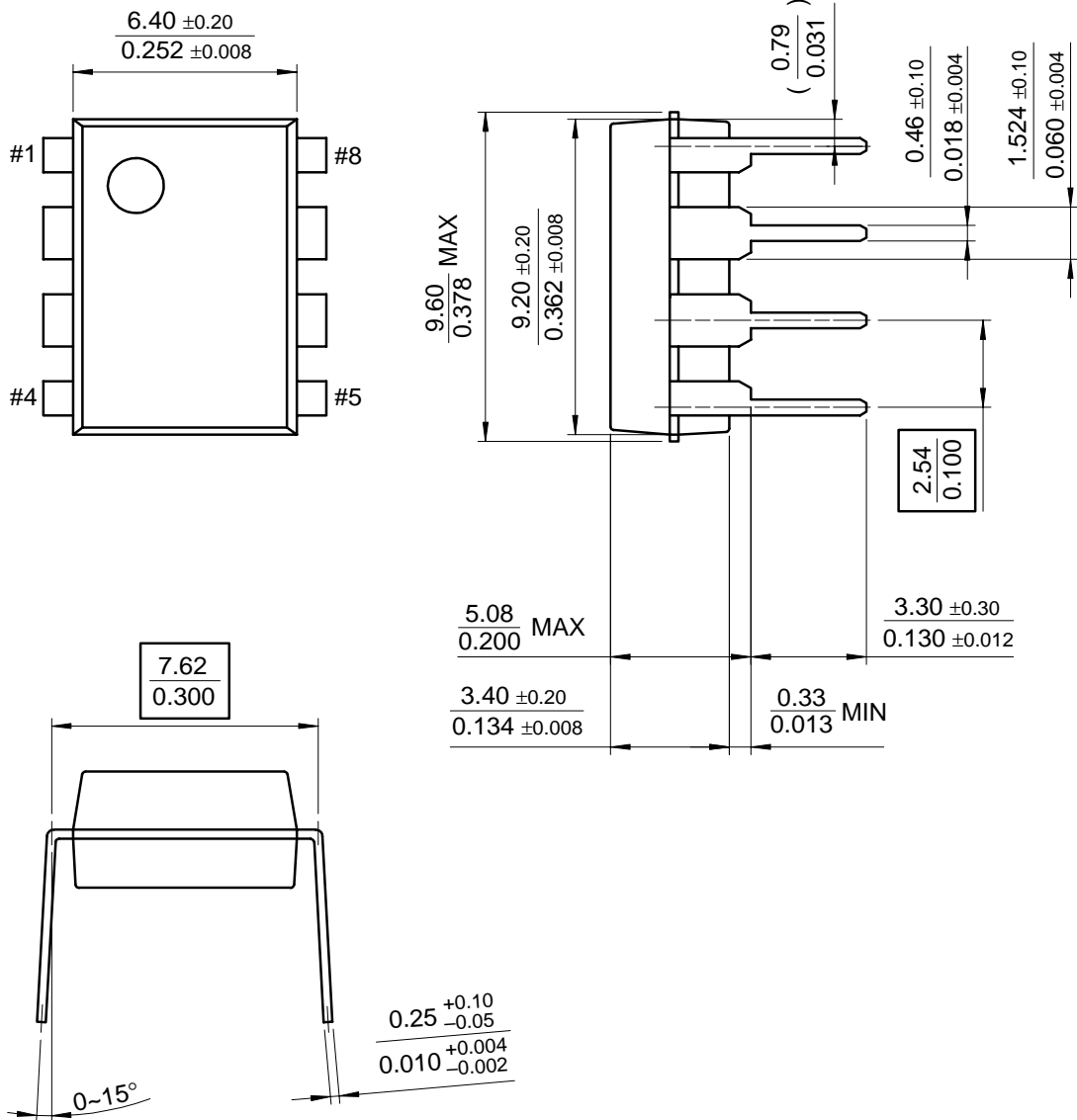


Figure 2. Temperature Drift (I_{OC})

Mechanical Dimensions

Package

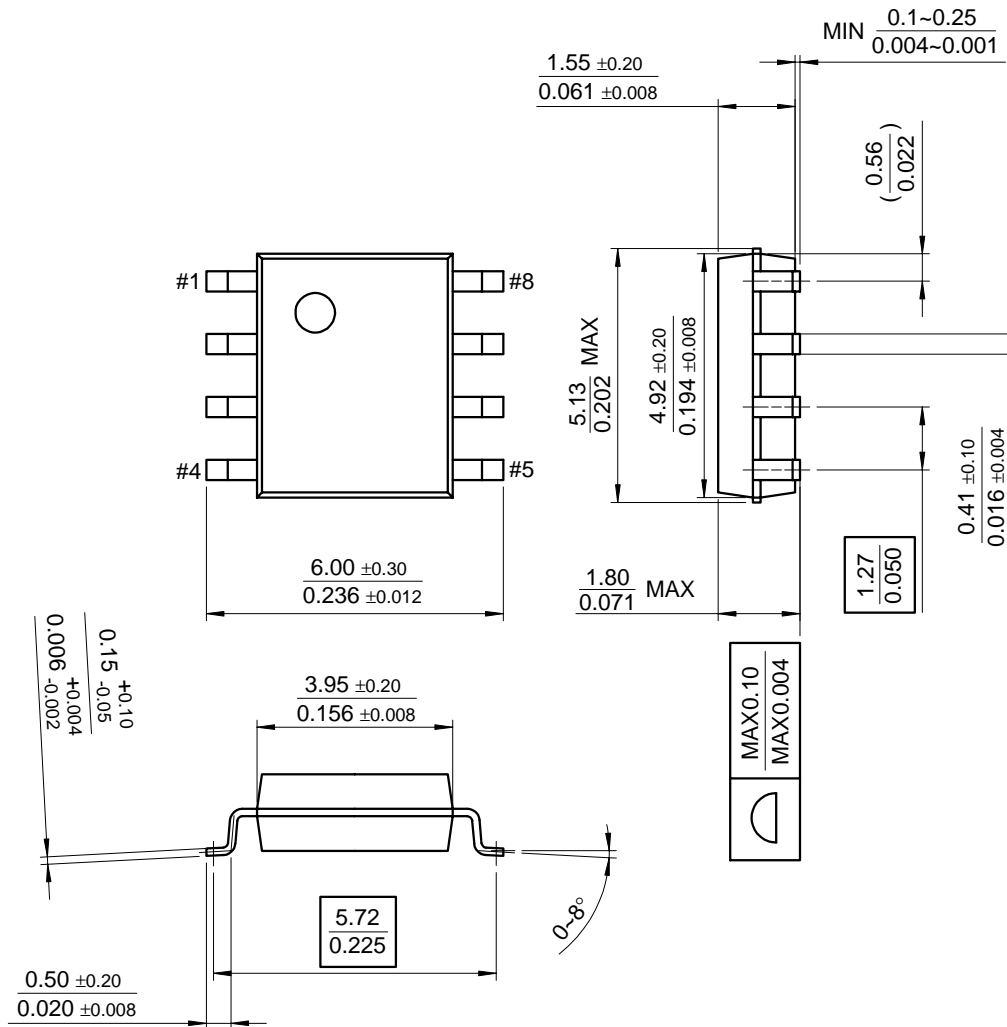
8-DIP



Mechanical Dimensions (Continued)

Package

8-SOP



Ordering Informatio

Product Number	Package	Operating Temperature
MC34063AP	8-DIP	0 ~ + 70°C
MC34063AD	8-SOP	

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