

# KA34063A

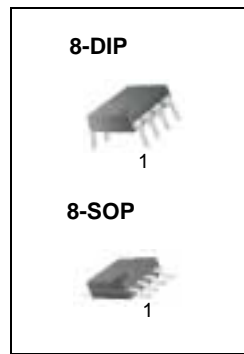
## SMPS Controller

### Features

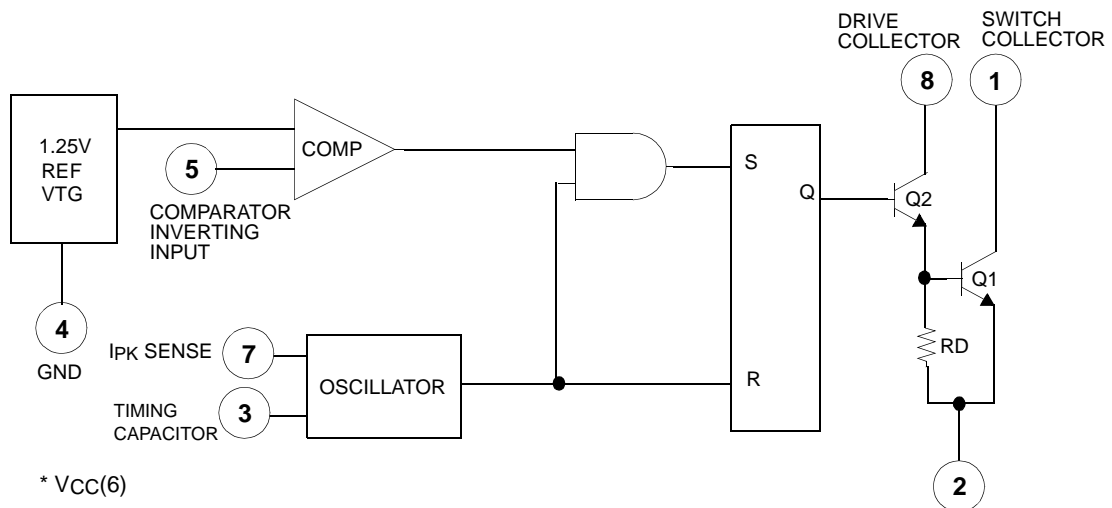
- Operation From 3.0 to 40V Input
- Short Circuit Current Limiting
- Low Stand-by Current
- Output Switch Current of 1.5A Without External Transistors
- Output Voltage Adjustable
- Frequency of Operation From 100Hz to 100kHz
- Step-up, Step-Down or Inverting Switching Regulators

### Description

The KA34063A 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, a driver, and a 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	A
Storage Temperature Range	TSTG	-65 ~ +150	°C

## Electrical Characteristics

(VCC = 5.0V, TA = 0°C to +70°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>OSCILLATOR</b>						
Charging Current	ICHG	VCC = 5 to 40V, TA = 25°C	22	31	42	μA
Discharging Current	IDISCHG	VCC = 5 to 40V, TA = 25°C	140	190	260	μA
Oscillator Amplitude	V(OSC)	TA = 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 TA = 25°C	250	300	350	mV
<b>OUTPUT SWITCH</b>						
Saturation Voltage 1 (Note1)	VCE(SAT)1	ISW = 1.0A VC(driver) = VC(SW)	-	0.95	1.3	V
Saturation Voltage 2 (Note1,2)	VCE(SAT)2	ISW = 1.0A, VC(driver) = 50mA	-	0.45	0.7	V
DC Current Gain (Note1,2)	GI(DC)	ISW = 1.0A, VCE = 5.0V, TA = 25°C	50	180	-	-
Collector off State Current (Note1)	IC(OFF)	VCE = 40V, TA = 25°C	-	0.01	100	μA
<b>COMPARATOR</b>						
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	VI = 0V	-	50	400	nA
<b>TOTAL DEVICE</b>						
Supply Current	ICC	VCC = 5 to 40V, CT = 0.001μF V7 = VCC, V5 > VTH pin2 = GND	-	2.7	4.0	mA

### Note :

- Output switch tests are performed under pulsed conditions to minimize power dissipation.
- These parameters, although guaranteed, are not 100% tested in production.

## Typical Performance Characteristics

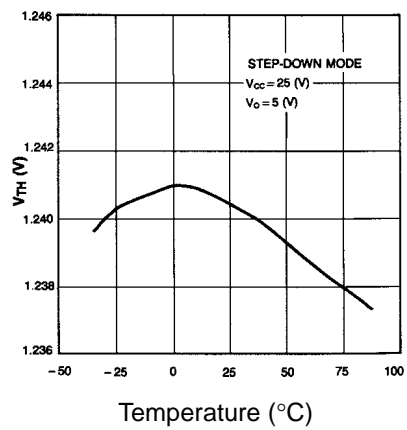


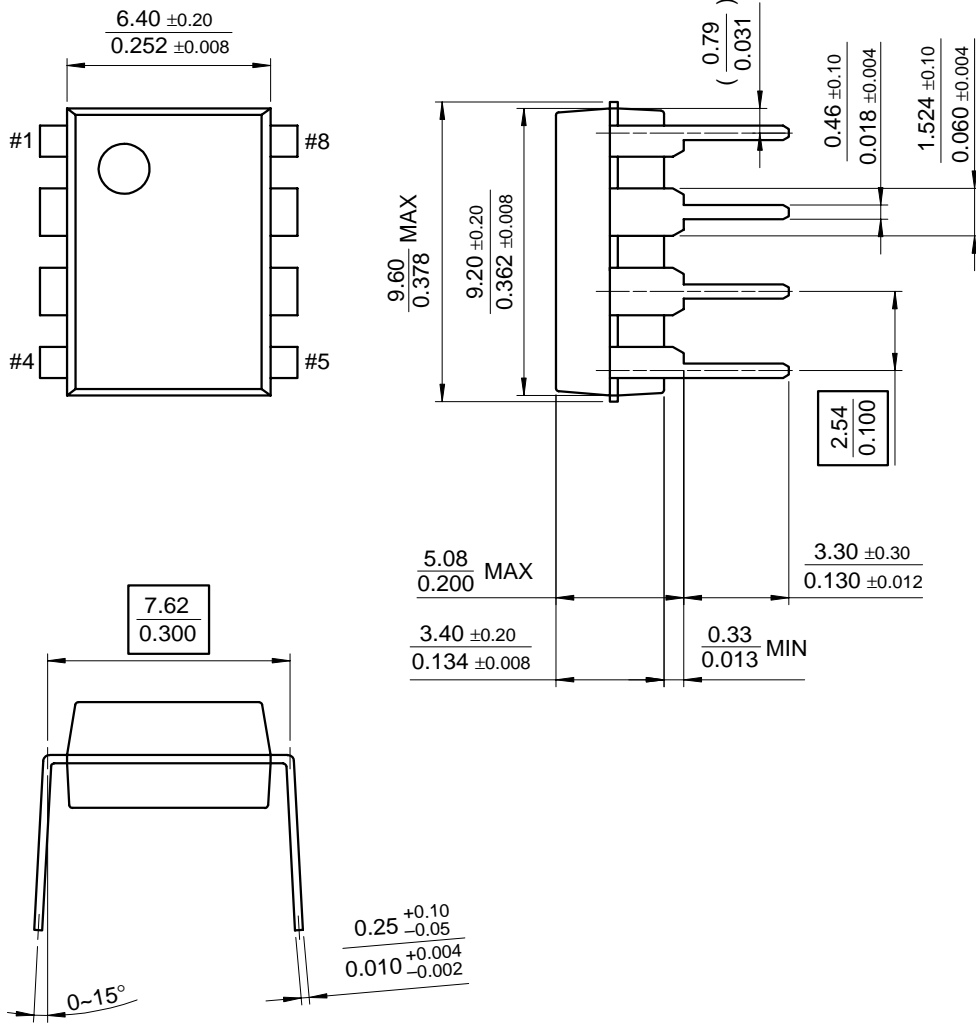
Figure 1. Temperature Drift ( $V_{TH}$ )

# Mechanical Dimensions

## Package

Dimensions in millimeters

### 8-DIP

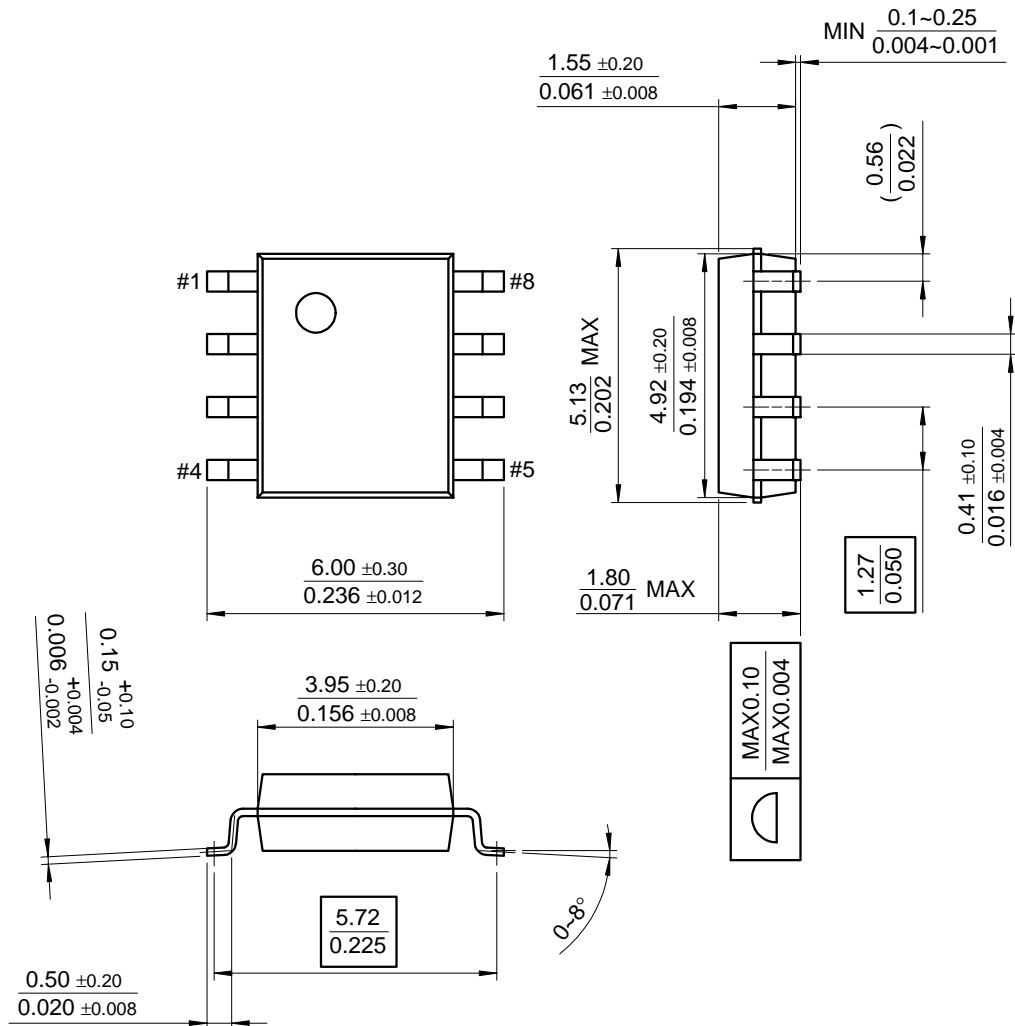


# Mechanical Dimensions (Continued)

Package

Dimensions in millimeters

## 8-SOP



## Ordering Information

Product Number	Package	Operating Temperature
KA34063A	8-DIP	0 ~ +70°C
KA34063AD	8-SOP	

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