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# KA34063A

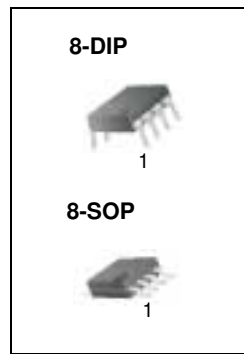
## SMPS Controller

### Features

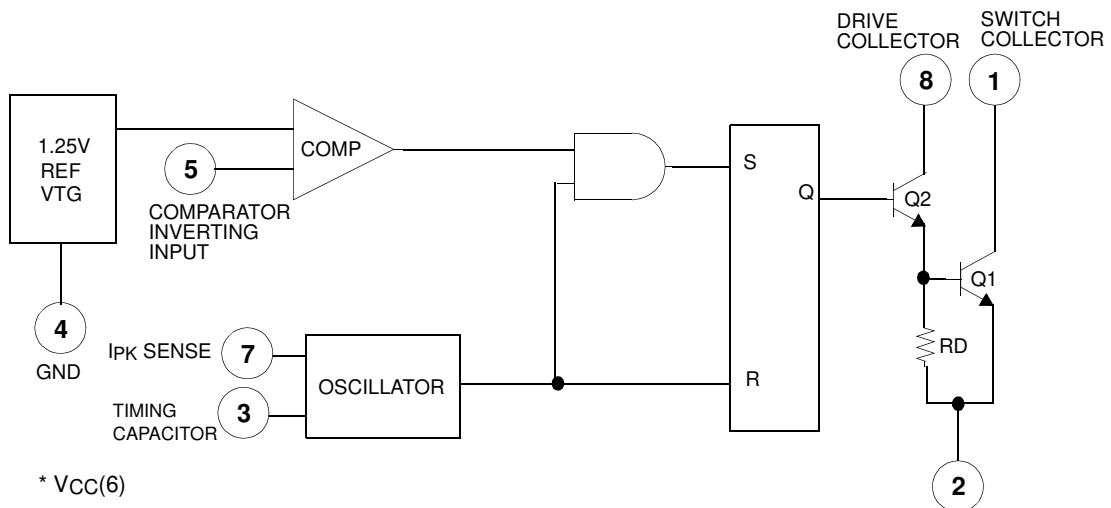
- Operation From 3.0 to 40V Input
- Short Circuit Current Limiting
- Low Stand-by Current
- Output Switch Current of 1.5A Without External Transistors
- Output Voltage Adjustable
- Frequency of Operation From 100Hz to 100kHz
- Step-up, Step-Down or Inverting Switching Regulators

### 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	V <sub>CC</sub>	40	V
Comparator Input Voltage Range	V <sub>I(OMP)</sub>	-0.3 ~ +40	V
Switch Collector Voltage	V <sub>C(SW)</sub>	40	V
Switch Emitter Voltage	V <sub>E(SW)</sub>	40	V
Switch Collector To Emitter Voltage	V <sub>CE(SW)</sub>	40	V
Driver Collector Voltage	V <sub>C(DR)</sub>	40	V
Switch Current	I <sub>SW</sub>	1.5	A
Storage Temperature Range	T <sub>STG</sub>	-65 ~ +150	°C

## Electrical Characteristics

(V<sub>CC</sub> = 5.0V, T<sub>A</sub> = 0°C to +70°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>OSCILLATOR</b>						
Charging Current	I <sub>CHG</sub>	V <sub>CC</sub> = 5 to 40V, T <sub>A</sub> = 25°C	22	31	42	μA
Discharging Current	I <sub>DISCHG</sub>	V <sub>CC</sub> = 5 to 40V, T <sub>A</sub> = 25°C	140	190	260	μA
Oscillator Amplitude	V <sub>(OSC)</sub>	T <sub>A</sub> = 25°C		0.5	-	V
Discharge to Charge Current Ratio	K	V <sub>7</sub> = V <sub>CC</sub> , T <sub>A</sub> = 25°C	5.2	6.1	7.5	-
Current Limit Sense Voltage	V <sub>SENSE(C.L)</sub>	I <sub>CHG</sub> = I <sub>DISCHG</sub> T <sub>A</sub> = 25°C	250	300	350	mV
<b>OUTPUT SWITCH</b>						
Saturation Voltage 1 (Note1)	V <sub>CE(SAT)1</sub>	I <sub>SW</sub> = 1.0A V <sub>C(driver)</sub> = V <sub>C(SW)</sub>	-	0.95	1.3	V
Saturation Voltage 2 (Note1,2)	V <sub>CE(SAT)2</sub>	I <sub>SW</sub> = 1.0A, V <sub>C(driver)</sub> = 50mA	-	0.45	0.7	V
DC Current Gain (Note1,2)	G <sub>I(DC)</sub>	I <sub>SW</sub> = 1.0A, V <sub>CE</sub> = 5.0V, T <sub>A</sub> = 25°C	50	180	-	-
Collector off State Current (Note1)	I <sub>C(OFF)</sub>	V <sub>CE</sub> = 40V, T <sub>A</sub> = 25°C	-	0.01	100	μA
<b>COMPARATOR</b>						
Threshold Voltage	V <sub>TH</sub>	-	1.21	1.24	1.29	V
Threshold Voltage Line Regulation	ΔV <sub>TH</sub>	V <sub>CC</sub> = 3 to 40V	-	2.0	5.0	mV
Input Bias Current	I <sub>BIAS</sub>	V <sub>I</sub> = 0V	-	50	400	nA
<b>TOTAL DEVICE</b>						
Supply Current	I <sub>CC</sub>	V <sub>CC</sub> = 5 to 40V, C <sub>T</sub> = 0.001μF V <sub>7</sub> = V <sub>CC</sub> , V <sub>5</sub> > V <sub>TH</sub> 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

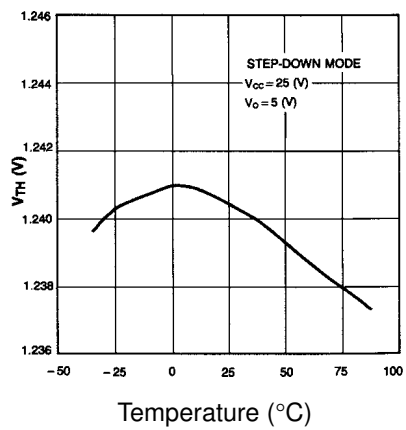


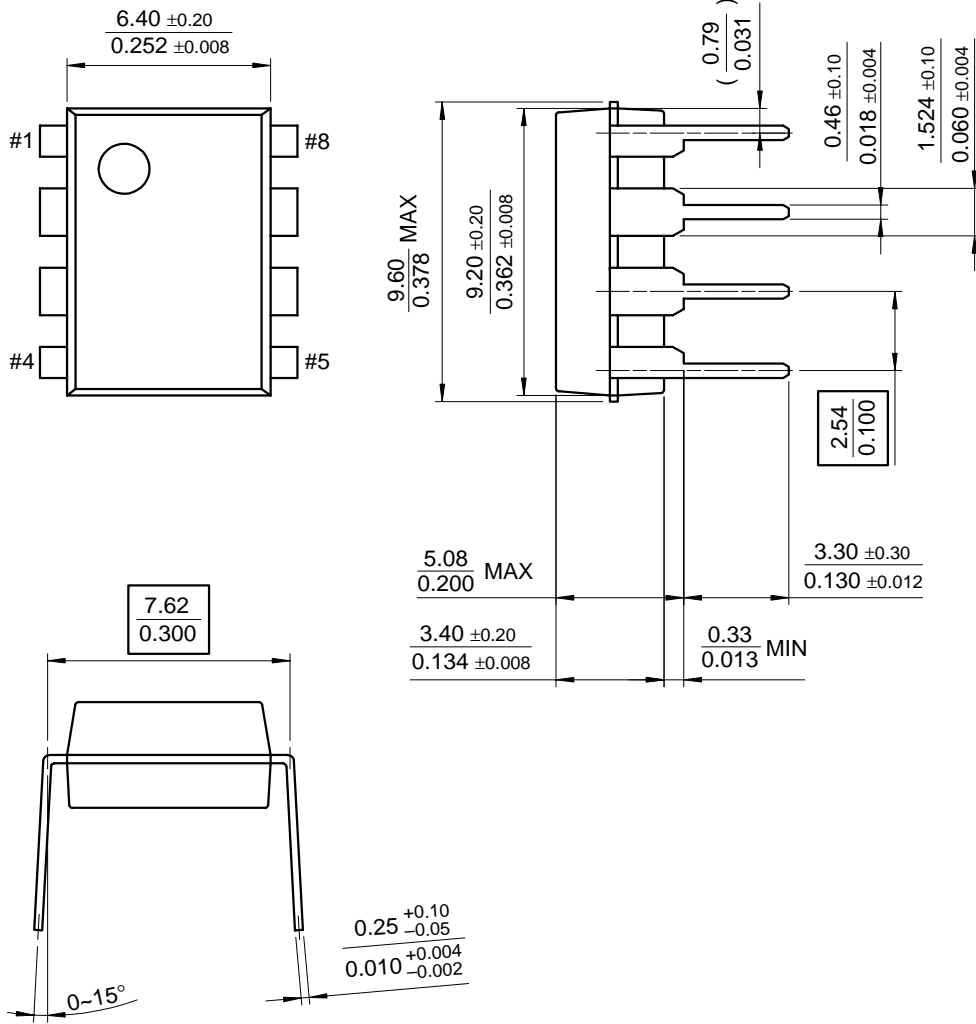
Figure 1. Temperature Drift ( $V_{TH}$ )

# Mechanical Dimensions

## Package

Dimensions in millimeters

### 8-DIP

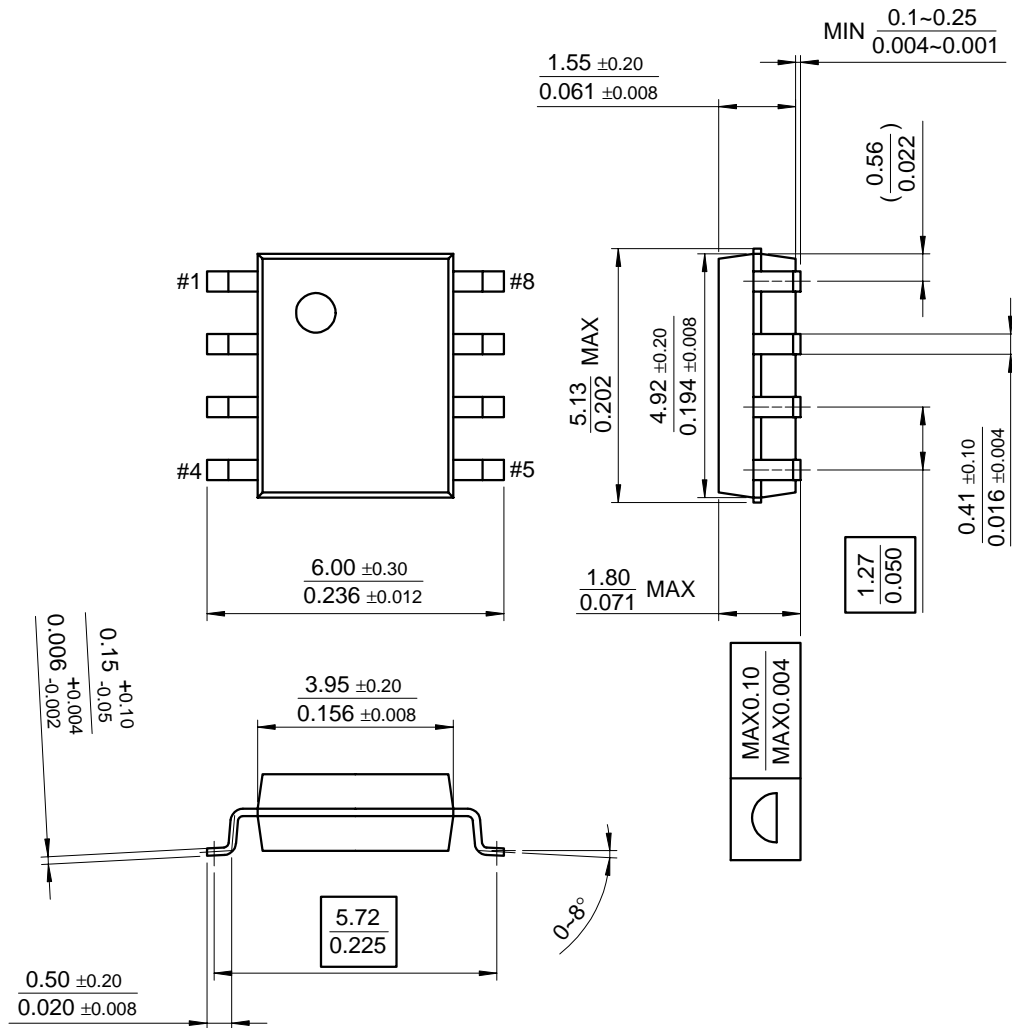


# Mechanical Dimensions (Continued)

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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