

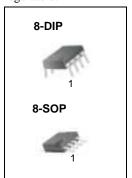
# KA34063A SMPS Controller

#### **Features**

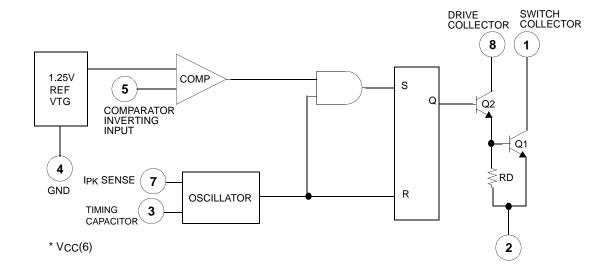
- Operation From 3.0 to 40V Input
- Short Circuit Current Limiting
- Low Stand-by Current
- Output Switch Current of 1.5A Without External Transistors
- Output Voltage Adjustable
- Frequency of Operation From 100Hz to 100kHz
- Step-up, Step-Down or Inverting Switching Regulators

## **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	А
Storage Temperature Range	TSTG	-65 ~ +150	°C

## **Electrical Characteristics**

(VCC = 5.0V,  $TA = 0^{\circ}C$  to +70°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit	
OSCILLATOR							
Charging Current	ICHG	VCC = 5 to 40V, TA = 25°C	22	31	42	μΑ	
Discharging Current	IDISCHG	VCC = 5 to 40V, T <sub>A</sub> = 25°C	140	190	260	μΑ	
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 T <sub>A</sub> = 25°C	250	300	350	mV	
OUTPUT SWITCH							
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)	G <sub>I(DC)</sub>	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	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 <sub>I</sub> = 0V	-	50	400	nA	
TOTAL DEVICE							
Supply Current	Icc	VCC = 5 to 40V, CT = 0.001uF V7 = VCC, V5>VTH pin2 = GND	-	2.7	4.0	mA	

#### Note:

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

# **Typical Performance Characteristics**

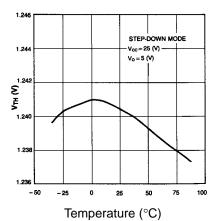
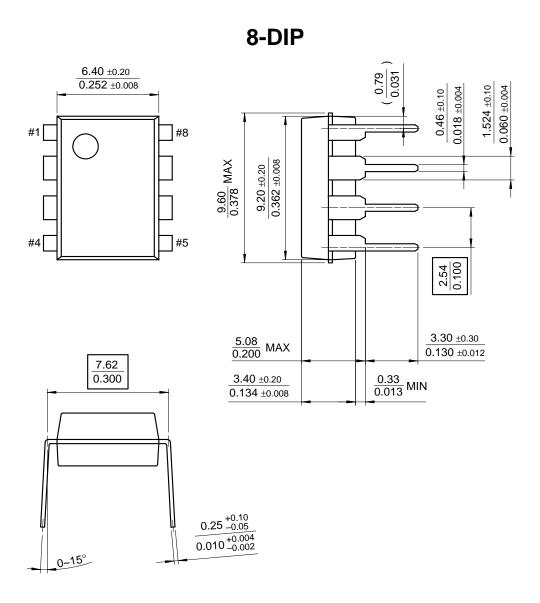


Figure 1. Temperature Drift (VTH)

## **Mechanical Dimensions**

## **Package**

#### **Dimensions in millimeters**

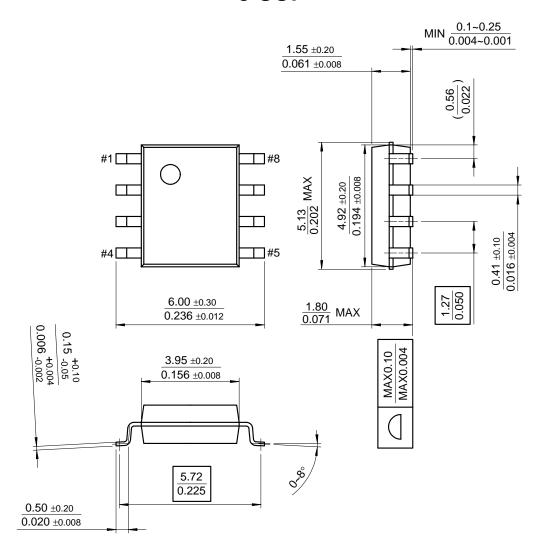


## **Mechanical Dimensions** (Continued)

## **Package**

#### **Dimensions in millimeters**

## 8-SOP



## **Ordering Information**

Product Number	Package	Operating Temperature	
KA34063A	8-DIP	0 ~ +70°C	
KA34063AD	8-SOP	0~+70 6	

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