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KA34063A

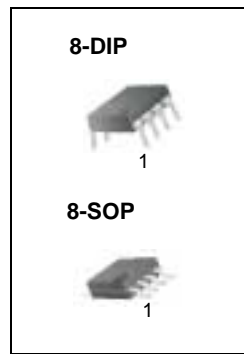
SMPS Controller

Features

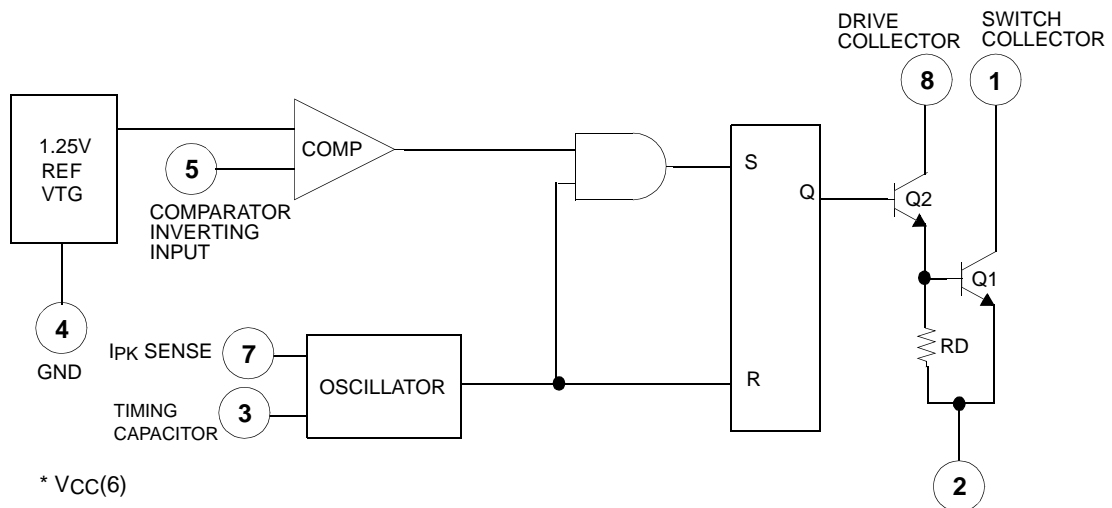
- Operation From 3.0 to 40V Input
- Short Circuit Current Limiting
- Low Stand-by Current
- Output Switch Current of 1.5A Without External Transistors
- Output Voltage Adjustable
- Frequency of Operation From 100Hz to 100kHz
- Step-up, Step-Down or Inverting Switching Regulators

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



* VCC(6)

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Supply Voltage	V _{CC}	40	V
Comparator Input Voltage Range	V _{I(OMP)}	-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
Storage Temperature Range	T _{STG}	-65 ~ +150	°C

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 (Note1)	V _{CE(SAT)1}	I _{SW} = 1.0A V _{C(driver)} = V _{C(SW)}	-	0.95	1.3	V
Saturation Voltage 2 (Note1,2)	V _{CE(SAT)2}	I _{SW} = 1.0A, V _{C(driver)} = 50mA	-	0.45	0.7	V
DC Current Gain (Note1,2)	G _{I(DC)}	I _{SW} = 1.0A, V _{CE} = 5.0V, T _A = 25°C	50	180	-	-
Collector off State Current (Note1)	I _{C(OFF)}	V _{CE} = 40V, T _A = 25°C	-	0.01	100	μA
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.
- These parameters, although guaranteed, are not 100% tested in production.

Typical Performance Characteristics

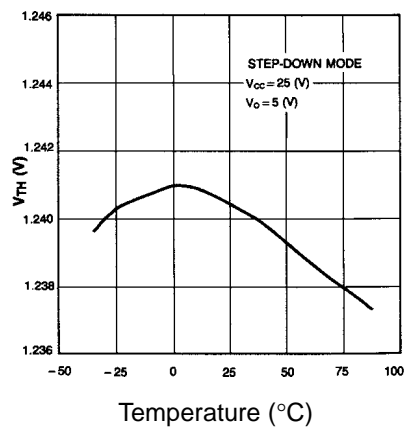


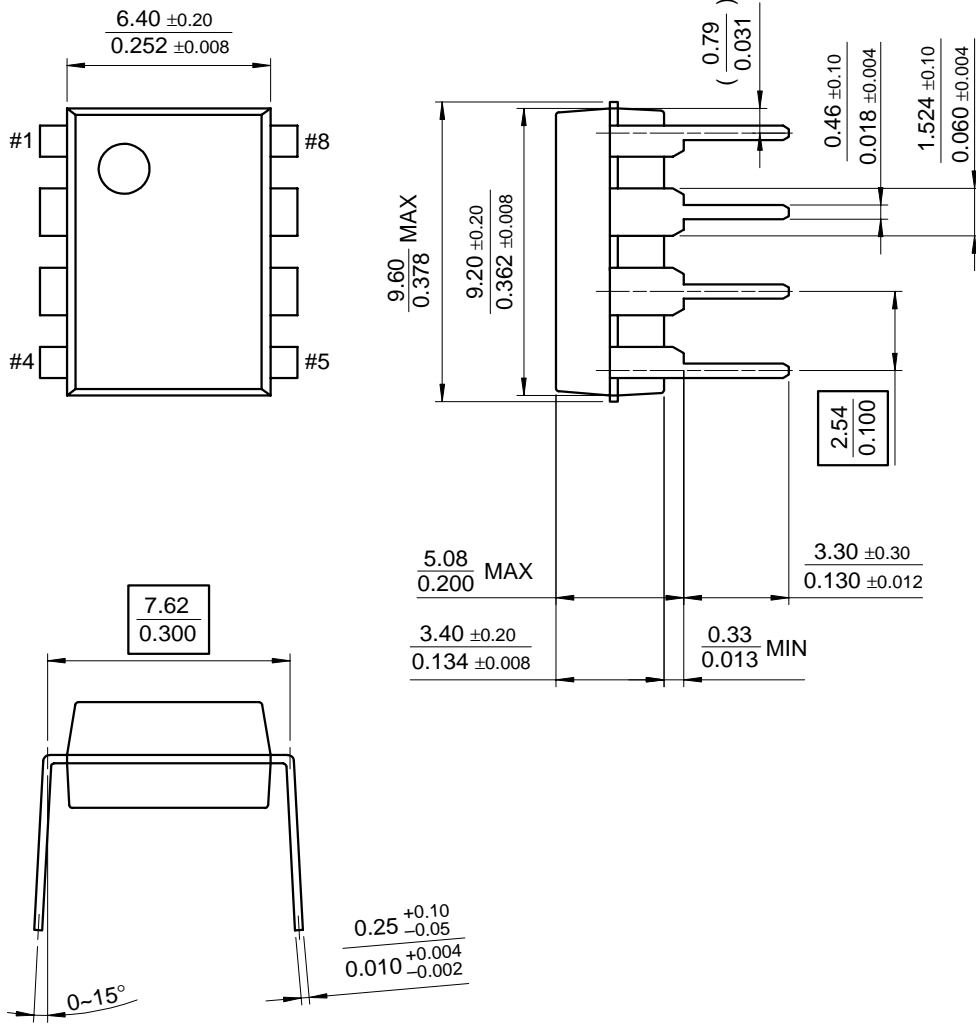
Figure 1. Temperature Drift (V_{TH})

Mechanical Dimensions

Package

Dimensions in millimeters

8-DIP

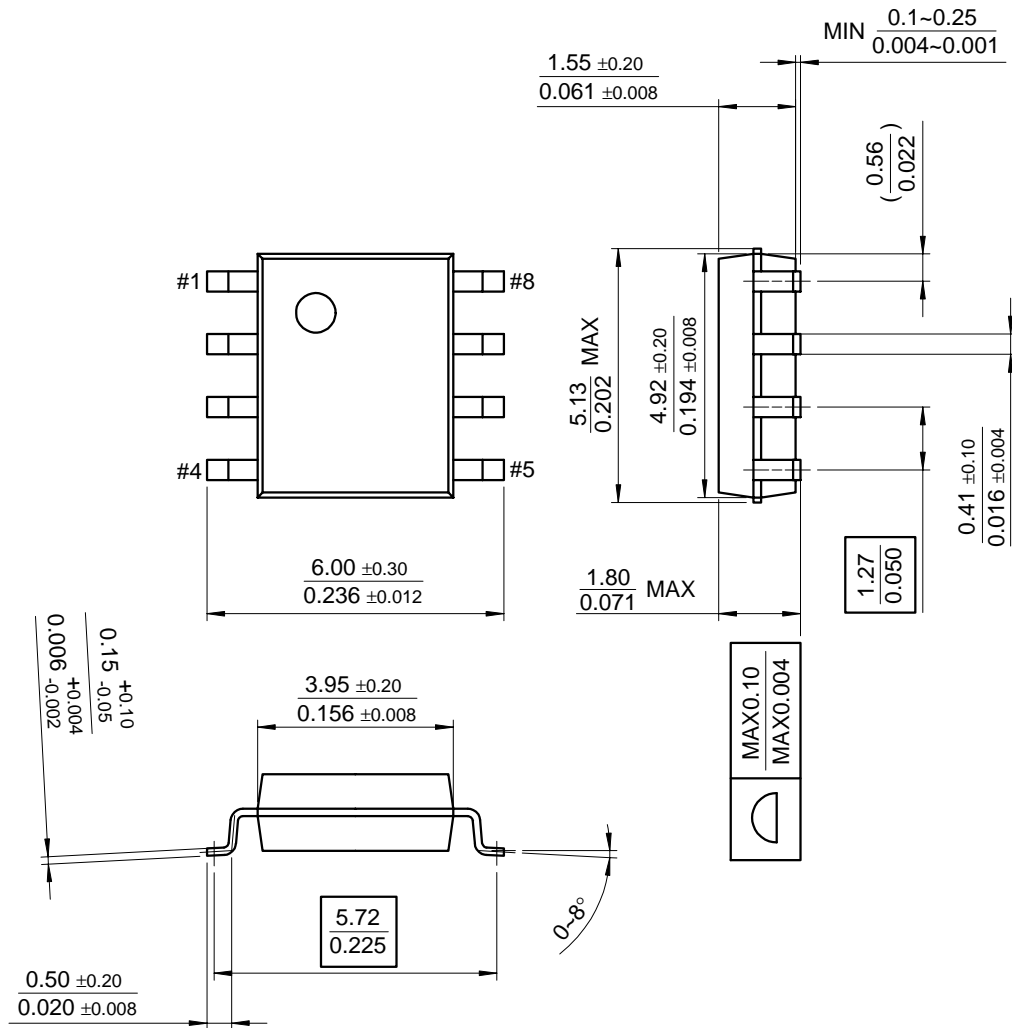


Mechanical Dimensions (Continued)

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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