ET-34063A

DC to DC Converter Control Circuits

DESCRIPTION

The MC34063A Series is a monolithic control circuit containing the primary functions required for DC-to-DC converters. These devices consist of an internal temperature compensated reference, comparator, controlled duty cycle oscillator with an active current limit circuit, driver and high current output switch. This series was specifically designed to be incorporated in Step-Down and Step-Up and Voltage-Inverting applications with a minimum number of external components.

FEATURES

- Operation from 3.0 V to 40 V Input
- Low Standby Current
- Current Limiting
- Output Switch Current to 1.5 A
- Output Voltage Adjustable
- Frequency Operation to 100 kHz
- Precision 2% Reference

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Power Supply Voltage	V_{CC}	40	Vdc
Comparator Input Voltage Range	V_{IR}	-0.3 to +40	Vdc
Switch Collector Voltage	$V_{C(switch)}$	40	Vdc
Switch Emitter Voltage ($V_{PIN\ 1}$=40V)	$V_{E(switch)}$	40	Vdc
Switch Collector to Emitter Voltage	$V_{CE(switch)}$	40	Vdc
Driver Collector Voltage	$V_{C(driver)}$	40	Vdc
Driver Collect Current (Note 1)	$I_{C(driver)}$	100	mA
Switch Current	I_{SW}	1.5	A
Operating Junction Temperature	T_J	+150	℃
Operating Ambient Temperature Range	T_A	0 to +70	℃
Storage Temperature Range	Tstg	-65 to +150	℃

ELECTRICAL CHARACTERISTICS

(Vcc=5.0 V, Ta=T_{low} to T_{high}, unless otherwise specified.)

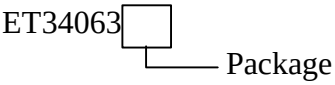
Characteristics	Symbol	Min	Type	Max	Unit
OSCILLATOR					
Frequency (V_{pin5}=0V, C_T=1.0nF, T_A=25℃)	f_{OSC}	24	33	42	kHz
Charge Current (V_{CC}=5.0V to 40V, T_A=25℃)	I_{chg}	24	35	42	μA
Discharge Current (V_{CC}=5.0V to 40V, T_A=25℃)	I_{dischg}	140	220	260	μA
Discharge to Charge Current Ratio (Pin 7 to V_{CC}, T_A=25℃)	I_{dischg}/I_{chg}	5.2	6.5	7.5	---
Current Limit Sense Voltage (I_{cha}=I_{discha}; T_A=25℃)	$V_{ipk(sence)}$	250	300	350	mV
OUTPUT SWITCH (NOTE 2)					
Saturation Voltage, Darlington Connection (I_{SW}=1.0A, Pins 1, 8 connected)	$V_{CE(sat)}$	---	1.0	1.3	V
Saturation Voltage, Darlington Connection (I_{SW}=1.0A, R_{pin8}=82Ω to V_{CC}, Forced β≈**20**)	$V_{CE(sat)}$	---	0.45	0.7	V
DC Current Gain (I_{SW}=1.0A, V_{CE}=5.0V, T_A=25℃)	h_{FE}	50	75	---	---
Collector Off-State Current (V_{CE}=40V)	$I_{C(off)}$	---	40	100	μA
COMPARATOR					
Threshold Voltage (T_A=25℃) (T_A=T_{low} to T_{high})	Vth	1.225 1.21	1.25 ---	1.275 1.29	V
Threshold Voltage Line Regulation (Vcc=3.0V to 40V)	Reg_{line}	---	1.4	5.0	mV
Input Bias Current (Vin=0V)	I_{IB}	---	-20	-400	nA
TOTAL DEVICE					
Supply Current (VCC=5.0V to 40V, C_T=1.0nF, Pin 7= V_{CC} , Vpin5>Vth, Pin2=Gnd, remaining pins open)	I_{CC}	---	---	4.0	mA

NOTES:

1. Maximum package power dissipation limits must be observed.
2. Low duty cycle pulse techniques are used during test to maintain junction temperature as close to ambient temperature as possible.

Ordering Info

Package	Type	Packing type
DIP-8	ET34063D	TB
SOP-8	ET34063E	TB



Package:
D: DIP-8
E: SOP-8

Packing type：
TB