

DC TO DC CONVERTER CONTROLLER—YD34063

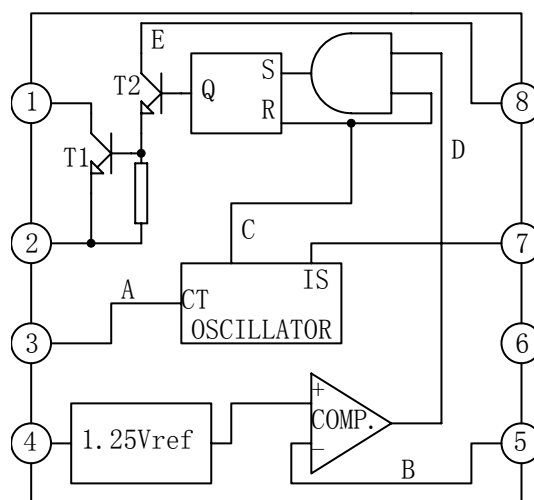
DESCRIPTION

The YD34063 is a monolithic regulator subsystem intended for use as DC to DC converter: This device contains a temperature compensated band-gap reference, a duty-cycle control oscillator, driver and high current output switch.

FEATURES

- *Operation From 3.0V to 40V
- *Short Circuit Current Limiting
- *Low Standby Current
- *Output Switch Current Of 1.5A Without External Transistors
- *Frequency Of Operation From 100Hz to 100kHz
- *Step-up, Step-down or Inverting Switch Regulators

BLOCK DIAGRAM



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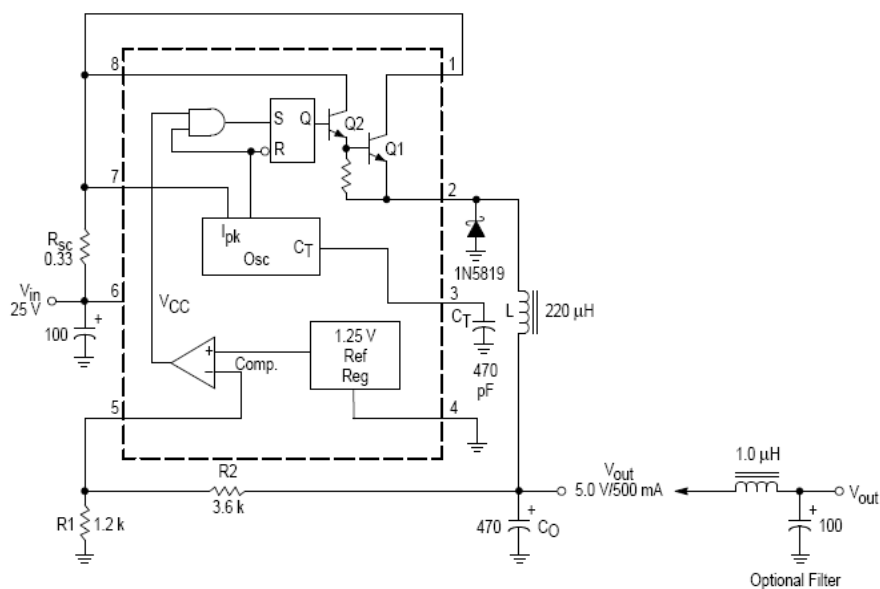
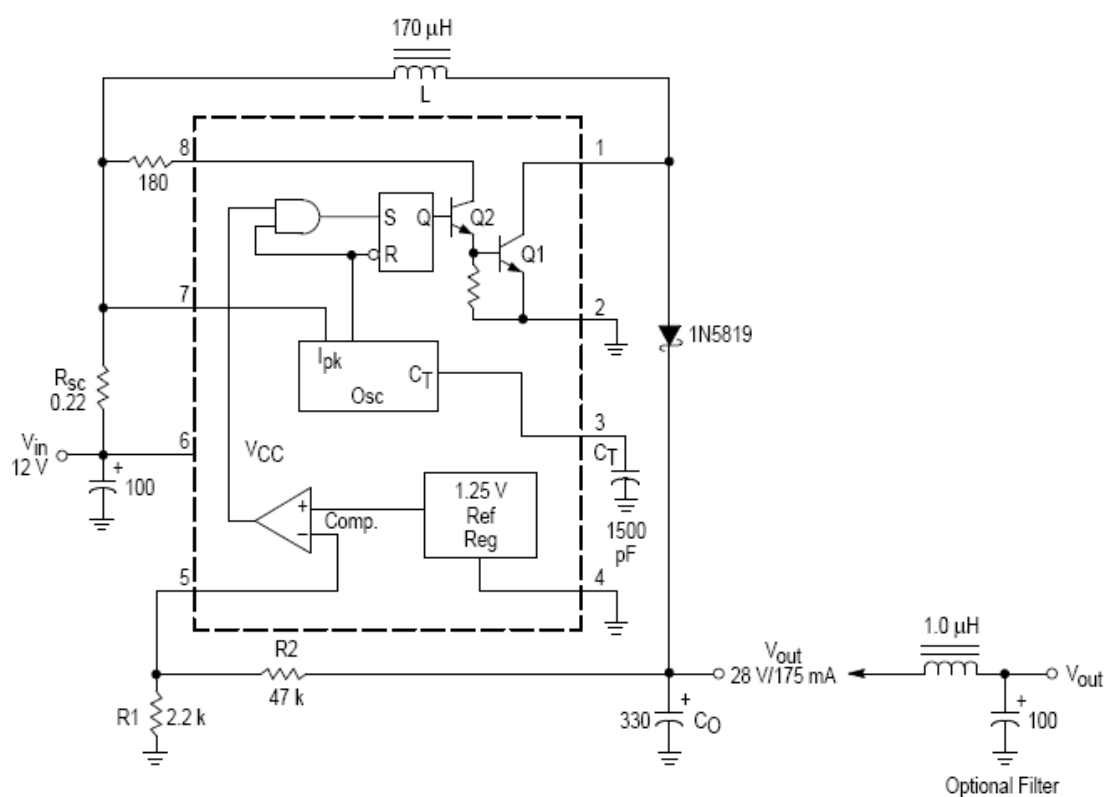
ABSOLUTE MAXIMUM RATINGS (Tamb=25℃)

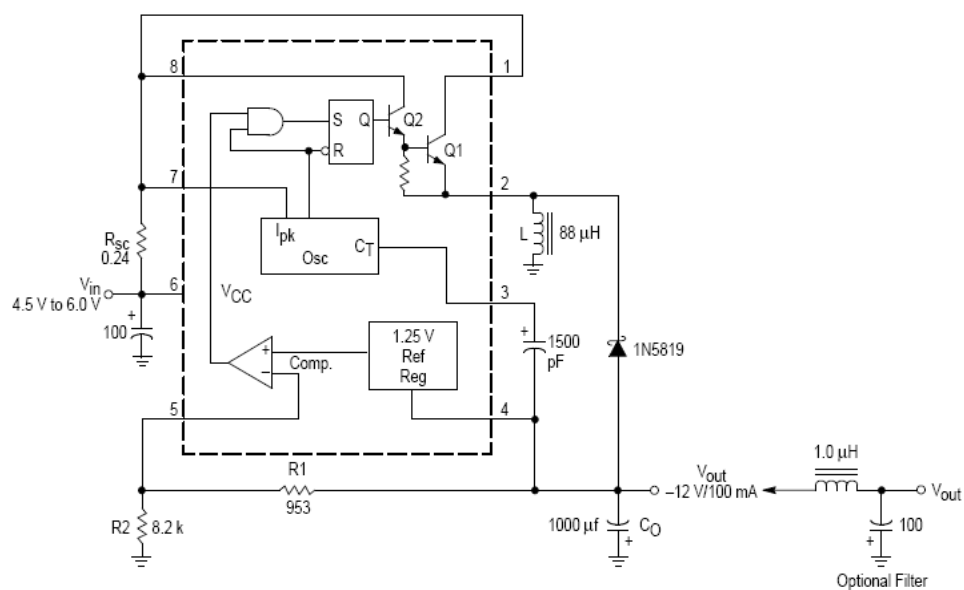
PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V _{cc}	40	V
Comparator Input Voltage Range	V _{i(comp)}	-0.3 ~ +40	V
Switch Collector Voltage	V _{c(sw)}	40	V
Switch Emitter Voltage	V _{e(sw)}	40	V
Switch Collector to Emitter Voltage	V _{ce(sw)}	40	V
Driver Collector Voltage	V _{c(dr)}	40	V
Driver Collector Current	I _c	-55~100	mA
Switch Current	I _{sw}	1.5	A
Power Dissipation	P _D	1.25	W
Operating Junction Temperature	T _j	150	℃
Operating Temperature	T _{amb}	0~70	℃
Storage Temperature	T _{stg}	-65~150	℃

ELECTRICAL CHARACTERISTICS (Tamb=0~70℃, V_{cc}=5.0V, Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Oscillator						
Frequency	f _{OSC}	V _{pin} =0V, C _T =1.0	24	33	42	kHz
Charging Current	I _{chq}	V _{pin} =5 to 40V	24	35	42	μ A
Discharging Current	I _{dischg}	V _{pin} =5 to 40V	140	190	260	μ A
Discharge to Charge Current Ratio	K	V ₇ =V _{cc}	5.2	6.1	7.5	
Current Limit Sense Voltage	V _{IPK}		250	300	350	mV
Output Switch						
Saturation Voltage	V _{ce(sat)}	I _{sw} =1.0A V _{c(driver)} =V _{c(sw)}		1.0	1.3	V
Saturation Voltage	V _{ce(sat)}	I _{sw} =1.0A V _{c(driver)} =50mA		0.45	0.7	V
DC Current Gain	h _{FE}	I _{sw} =1.0A, V _{ce} =5.0V	50	120		
Collector OFF Current	I _{c(off)}	V _{ce} =40.0V		0.01	100	μ A
Threshold Voltage	V _{th}	T _{amb} =25℃	1.225	1.25	1.275	V
		T _{amb} =0℃~70℃	1.21		1.29	
Threshold Voltage Line Regulation	Reg	V _{cc} =3.0~40V		1.4	5.0	mV
Input Bias Current	I _{IB}	V _{in} =0V		-40	-400	nA

APPLICATION CIRCUIT





OUTLINE DRAWING

DIP-8

unit:mm

