



概述

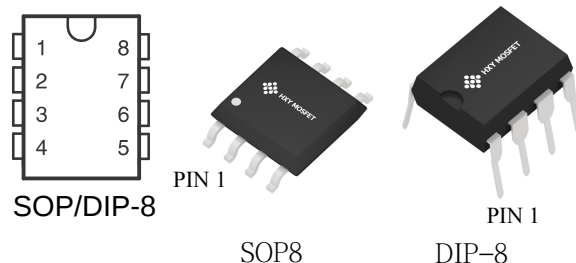
HMC33063ADR为一单片 DC-DC 变换集成电路，内含温度补偿 的参考电压源(1.25V)、比较器、能有效限制电流及控制工作周期的振荡器，驱动器及大电流输出开关管等,外配少量元件，就能组成升压、降压及电压反转型 DC-DC 变换器。

该电路采用 DIP-8和SOP-8封装形式。

主要特点

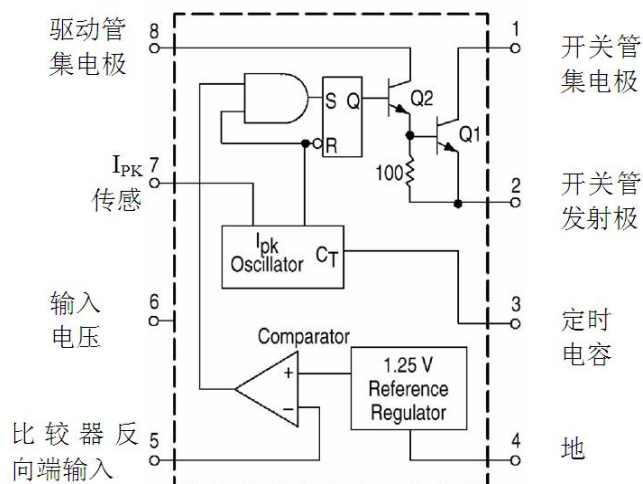
- 工作电压范围宽 3.0V~32V
- 静态电流小
- 管脚排列图
- 具有输出电流限制功能,输出电流保护功能
- 输出开关极限电流达 1.2A
- 输出电压可调
- 工作频率可达 100kHz
- 内部基准参考电压精度 2%

引脚排列



PIN脚位	符号	功能说明
1	SC	开关管集电极
2	SE	开关管发射极
3	CT	定时电容
4	GND	地
5	FB	比较器反向端输入
6	VCC	输入电压
7	I _{PK}	检测
8	V _{OUT}	驱动管集电极

功能框图





极限值

参数名称	符 号	数 值		单 位
		最小	最大	
电源电压	V _{CC}		32	V
比较器输入电压范围	V _{IR}	-0.3	30	V
输出管集电极电压	V _C (switch)		32	V
输出管发射极电压 (V _{PIN1} =32V)	V _E (switch)		32	V
输出管集电极与发射极间的电压	V _{CE} (switch)		32	V
驱动管集电极电压	V _C (driver)		32	V
驱动管集电极电流	I _C (driver)		100	mA
输出电流	I _{SW}		1.2	A
功耗	PD		1.25	W
工作环境温度	T _A	0	+70	
贮存温度	T _{stg}	-65	+150	

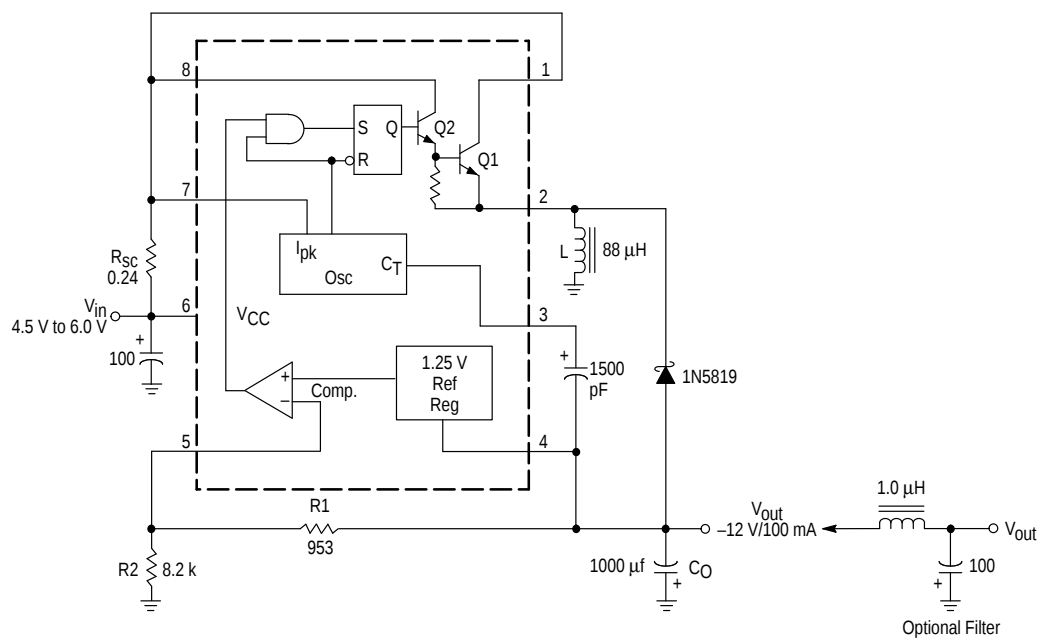
电特性 (V_{CC}=5.0V; T_A=0 ~70 除非另外规定)

特性条件	符号	规范值			单 位
		最小	典型	最大	
振荡器部分					
振荡频率(VPIN5=0V,CT=1.0F,TA=25)	fosc	24	33	42	KHz
充电电流(VCC=5.0V~32V,TA=25)	Ichg	24	33	42	uA
放电电流(VCC=5.0V~32V,TA=25)	Idischg	140	200	260	uA
放电与充电电流之比(VPIN7=VCC,TA=25)	Idischg/Ic	5.2	6.2	7.5	--
电流限制器电压灵敏度(Ichg=Idischg,TA=25)	V IPK	250	300	350	m V
输出部分:					
饱和压降(ISW=1.0A,PIN1,链接)	V CE (sat)	--	1.0	1.3	V
饱和压降(ISW=1.0A,RPIN8=82到VCC)	V CE (sat)	--	0.45	0.7	V
直流放大倍数(ISW=1A,VCE=5V,TA=25)	hfe	50	120	--	--
集电极漏电流(VCE=30V)	Ic(off)	--	0.01	100	uA
比较器部分:					
阈值电压(TA=25) (TA=0~70)	Vth	1.23 1.21	1.25 --	1.27 1.29	V
输入偏置电流(VIN=0V)	IIB	--	-40	-400	nA
阈值电压线性调整率(VCC=3.0~30V)	RegIine	--	1.4	5.0	m V
整体部分:					
电源电流(VCC=5.0V~30V,CT=1.0nF, VPIN7=Vcc,VPIN5>Vth ,VPIN2=GND,其余悬空)	ICC	----	2.5	4.0	mA



应用电路图

HMC33063ADR 作反转式DC -DC 变换器

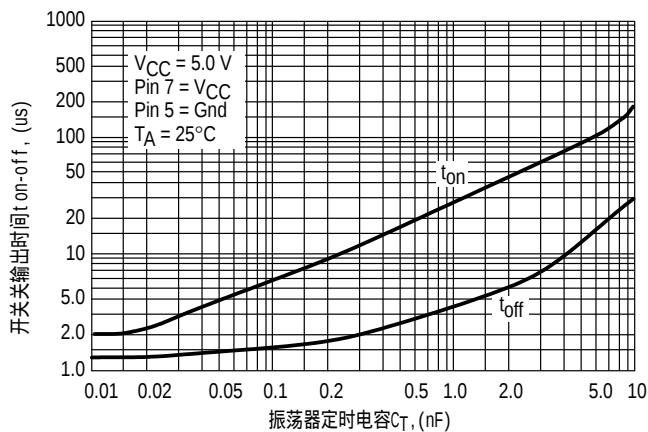


当加接LC 滤波器后,能进一步减小电压纹波及噪声,特性见下表

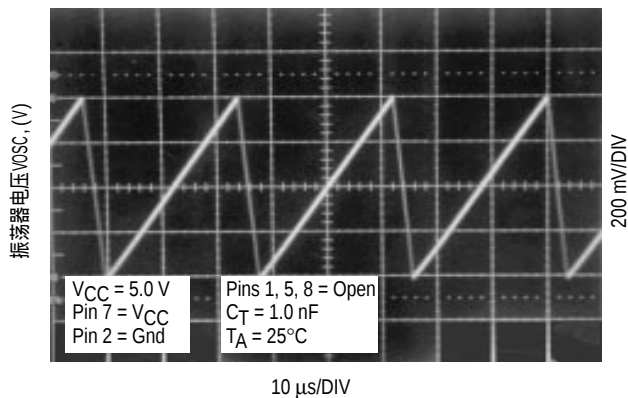
参数	测试条件	结果
线性调整率	V IN=4.5~6.0V,Io=100m A	3.0mV=0.012%
负载调整率	V IN=5.0V, Io=10~100m A	0.022V=+0.09%
输出纹波	V IN=5.0V, Io=100m A	500mVpp
电路限制电流	V IN=5.0V,RL=0.1	910mA
效率	V IN=5.0V, Io=100m A	64.5%
输出纹波	V IN=5.0V, Io=100m A	70mVpp



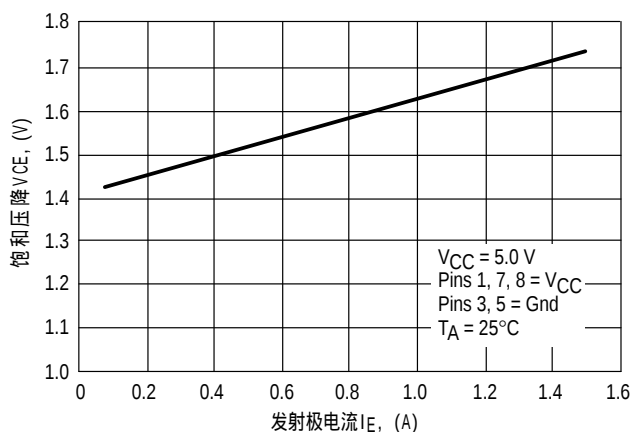
特性曲线



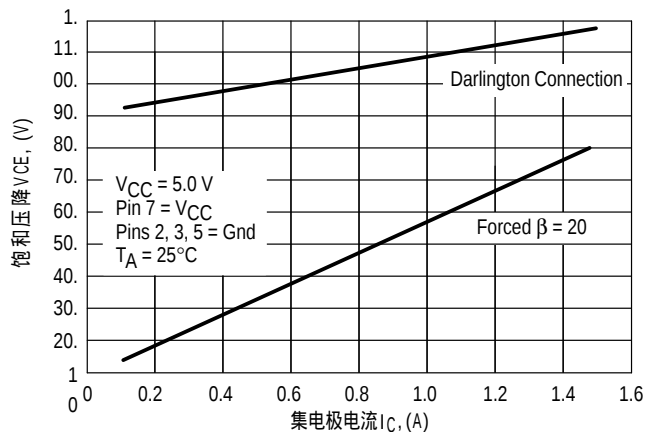
振荡器定时电容开关特性曲线



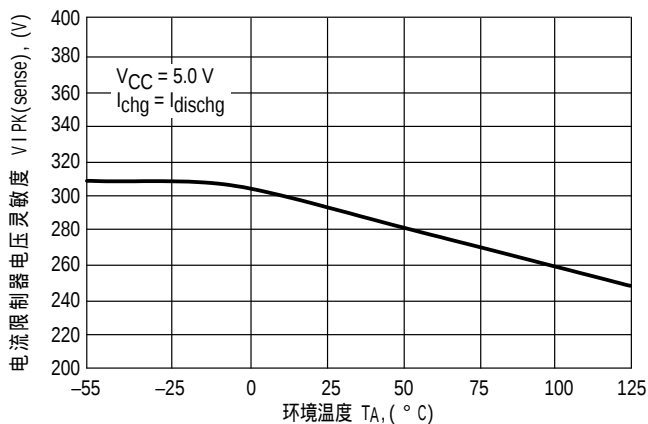
振荡器定时电容开关特性曲线



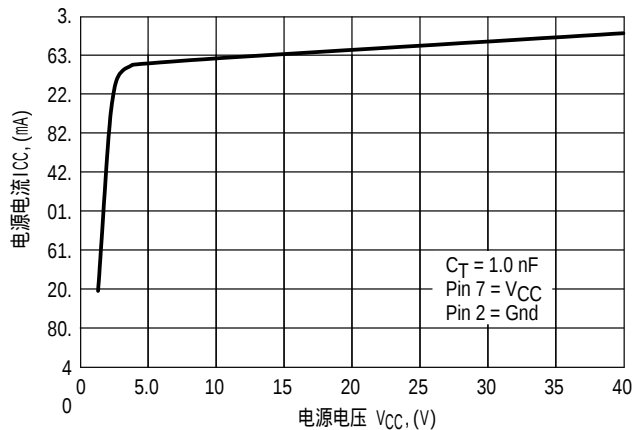
发射极输出饱和压降-发射极
电流特性曲线



共发射极开关输出饱和压降-
集电极电流特性曲线



静态工作电流-工作电压特性曲线

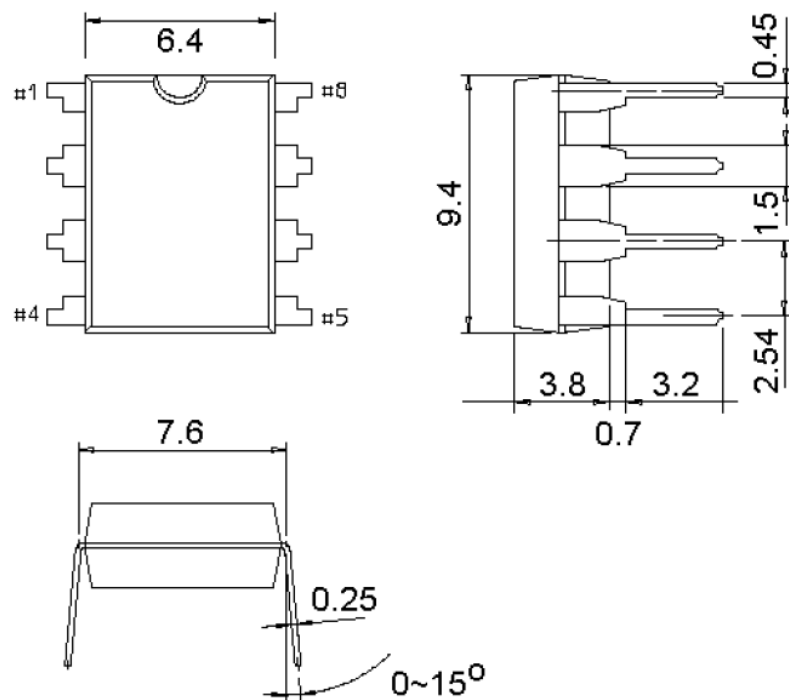


静态工作电流-工作电压特性曲线

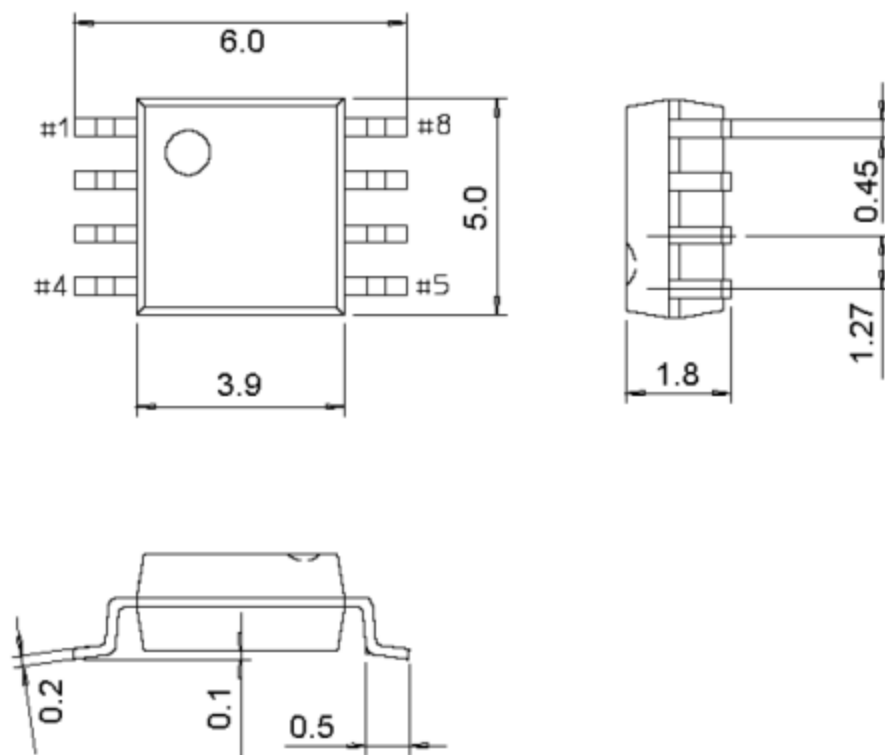


封装信息

DIP-8



SOP-8





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