

Io=200mA bipolar LDO regulator IC
Io=200mA双极型低压降稳压IC



TK11100CS
(SOT23-6)



TK111xxCS
(SOT23-5)

DESCRIPTION / 说明

The TK11100CS type, the TK111xxCS type are bipolar LDO regulator ICs. The packages are SOT23-6 and SOT23-5. They can supply 200mA output current. They are designed for portable applications with space requirements, battery powered system and any electronic equipment. They offer low dropout voltage. The output voltage of the TK11100CS can be set from 1.3 to 13.0V by external resistor. That of the TK111xxCS is internally fixed from 1.5 to 10.0V.

TK11100CS型, TK111xxCS型为双极型低压降稳压IC。其封装为SOT23-6和 SOT23-5。可以提供200mA的输出电流。设计用于有空间限制的便携式设备, 电池供电系统和电子设备。提供低压降。可以通过外部电阻将TK11100CS的输出电压设为1.3至13.0V。TK111xxCS的内部固定输出电压为1.5至9.0V。

FEATURES / 特性

- High accuracy
- 高精度
- Low dropout voltage
- 低压降
- Thermal and over current protection
- 过热及过流保护
- High maximum load current
- 最大负载电流
- Active high on/off control
- 高电平开/关控制
- Packages: SOT23-5, SOT23-6
- 封装: SOT23-5, SOT23-6

ABSOLUTE MAXIMUM RATINGS / 绝对最大额定值

Parameter	参数	Symbol 符号	Rating	额定值	Unit 单位	Remarks	备注
Operating voltage range	工作电压范围	V _{OP}	2.1 to 14		V		
Operating temperature range	工作温度范围	T _{OP}	-40 to +85		°C		
Power dissipation	功耗	P _D	360		mW	*Board mounted	基板安装

ELECTRICAL CHARACTERISTICS / 电气特性

[TK11100CS]

V_{in}=4.0V, R₁=51kΩ, R₂=68kΩ, V_{cont}=1.8V, T_A=T_J=25°C

Parameter	参数	Symbol 符号	Value/值			Unit 单位	Conditions	备注
			MIN. 最小	TYP. 典型	MAX. 最大			
Fb pin voltage	Fb端子电压	V _{fb}	1.250	1.270	1.290	V	I _{out} = 5mA	
Line regulation	线性调整率	LinReg		0.0	5.0	mV	ΔV _{in} = 5V	
Load regulation	负载调整率	LoaReg		11	27	mV	I _{out} = 5mA ~ 100mA	
				26	61	mV	I _{out} = 5mA ~ 200mA	
Dropout voltage	电压降	V _{drop}		80	140	mV	I _{out} = 50mA	
				120	210	mV	I _{out} = 100mA	
				200	350	mV	I _{out} = 200mA	
Maximum output current	最大负载电流	I _{outPEAK}	240	320		mA	When V _{out} drops 0.3V 当V输出降到0.3V时	
Supply current	供应电流	I _{cc}		78	125	A	I _{out} = 0mA	
Standby current	待机电流	I _{standby}		0.0	0.1	A	V _{cont} = 0V	
Quiescent current	静态电流	I _q		1.0	1.8	mA	I _{out} = 50mA	
Control Terminal	控制端子							
Control current	控制电流	I _{cont}		5.0	15.0	A	V _{cont} = 1.8V	
Control voltage	控制电压	V _{cont}	1.8			V	V _{out} ON state/V _{out} 开启状态	
					0.35	V	V _{out} OFF state/V _{out} 关闭状态	

[TK111xxCS]

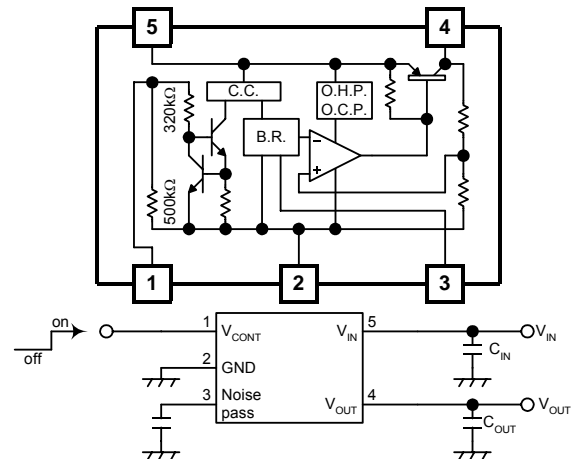
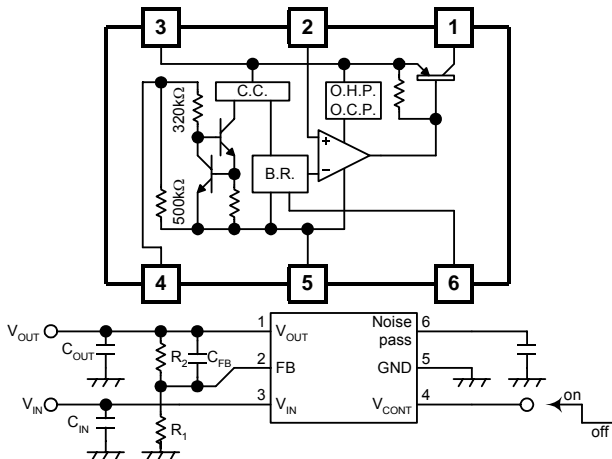
$V_{IN}=V_{OUT,TYP}+1V, V_{CONT}=1.8V, T_A=25^{\circ}C$

Parameter	参数	Symbol符号	Value			Unit 单位	Conditions	备注
			MIN. 最小	TYP. 典型	MAX. 最大			
Output voltage	输出电压	V_{OUT}	$\pm 1.5\%$ or $\pm 50mV$					
Line regulation	线性调整率	L_{INREG}		0.0	5	mV	$V_{IN}=V_{OUT,TYP}+1V \text{ ---- } V_{OUT,TYP}+6V \Delta V=5V$	
Load regulation	负载调整率	$LOAREG$		(11)	(28)	mV	$5mA < I_{OUT} < 100mA$	
				(27)	(64)	mV	$5mA < I_{OUT} < 200mA$	
Drop-out voltage	电压降	V_{DROP}		80	140	mV	$I_{OUT}=50mA$	
				120	210	mV	$I_{OUT}=100mA$	
				200	350	mV	$I_{OUT}=200mA (2.4V \leq V_{OUT})$	
				230	350	mV	$I_{OUT}=180mA (2.1V \leq V_{OUT} < 2.4V)$	
						1.5V $\leq V_{OUT} \leq 2.0V$: No regulation		Because of $V_{opMin}=1.8V$
Maximum output current	最大输出电流	$I_{OUT,MAX}$	240	320		mA	When $(V_{OUT,TYP} \times 0.9)$	
Consumption current	电流功耗	I_{CC}		63	100	μA	$I_{OUT}=0mA$ Except I_{CONT}	
Standing by current	待机电流	$I_{STANDBY}$		0.0	0.1	μA	$V_{CONT}=0V$ off state	
Quiescent current	静态电流	I_Q		1.0	1.8	mA	$I_{OUT}=50mA$	
Control terminal Specification (Pull down resistor =500k) 控制端子规格 (下拉电阻=500k)								
Control current	控制电流	I_{CONT}	5	15		μA	$V_{CONT}=1.8V$ on state	
Control voltage	控制电压	V_{CONT}	1.8			V	on state	
					0.35	V	off state	

BLOCK DIAGRAM / 框图

■ TK11100CS

■ TK111xxCS



$V_{OUT}=V_{FB} \times \{(R_1+R_2)/R_1\}$
 $V_{FB,TYP}=1.27V$

* C.C....Control Circuit, O.H.P...Over Heat Protection, O.C.P...Over Current Protection, B.G....Band gap Reference
 * C.C....控制电流, O.H.P...过热保护, O.C.P...过电流保护, B.G....波段间隙参考