

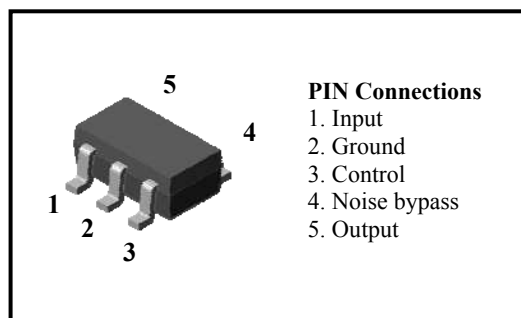
Description

The S52xxM is a u-cap 150mA linear voltage regulator in the SOT-25 package. This regulator has very low dropout voltage and very low ground current. It is designed especially for hand-sets, battery-powered devices and can be controlled by a CMOS or TTL. When the S52xxM is disabled, power consumption drops to nearly zero.

Features

- Output current of 150mA
- Low quiescent current
- Low dropout voltage
- Current limit protection
- Logic-controlled electronic enable

Pin Connections



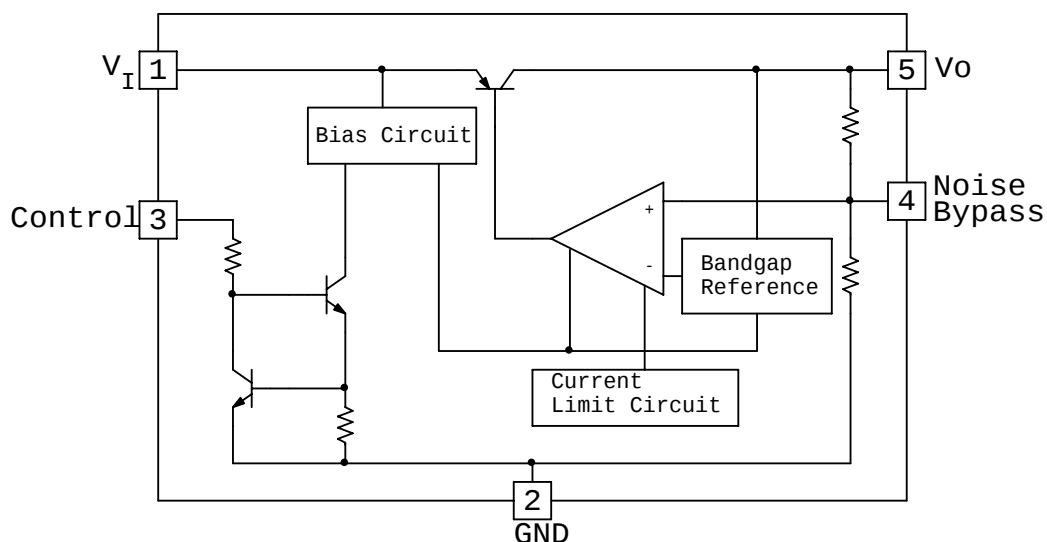
Ordering Information

Type NO.	Marking	Package Code
S52xxM	5□□■	SOT - 25

□□: Voltage Code (15:1.5V, 18:1.8V, 25:2.5V, 28:2.8V, 30:3.0V, 33:3.3V, 50:5.0V)
 ■: YY&WW Code

Outline Dimensions (Unit : mm)

BLOCK DIAGRAM



Absolute Maximum Ratings**Ta=25°C**

Characteristic	Symbol	Rating	Unit
Input Voltage	V _I	16	V
Control Voltage	V _{CT}	16	V
Power Dissipation	P _D (Note1)	500	mW
	P _D (Note2)	150	
Junction Temperature	T _J	150	°C
Operating Temperature Range	T _{opr}	-40~+85	°C
Storage Temperature Range	T _{stg}	-55 ~ +150	°C

Note 1 : Mount on a glass epoxy circuit board of 30x30mm Pad dimension of 50mm²

Note 2 : No Heat sink

Device Selection Guide

Device	Output Voltage
S5215M	1.5V
S5218M	1.8V
S5225M	2.5V
S5228M	2.8V
S5230M	3.0V
S5233M	3.3V
S5250M	5.0V

Electrical Characteristics

(Electrical characteristics at $V_I=V_O+1V$, $I_O=100\mu A$, $V_{CT}\geq 2.0V$, $C_O=47\mu F$, $C_{BYP}=1\mu F$, $T_a=25^\circ C$, unless otherwise specified.)

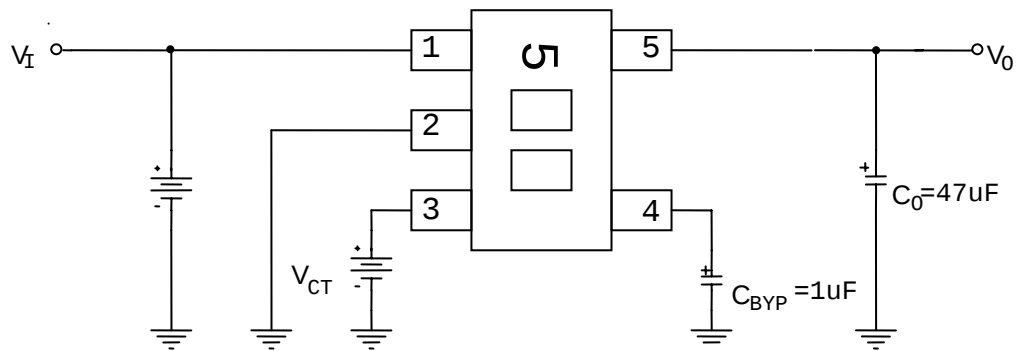
Characteristic	Symbol	Device	Test Condition	Min	Typ	Max	Unit
Output Voltage	V_O	S5215M	-	1.440	1.5	1.560	V
		S5218M	-	1.728	1.8	1.872	V
		S5225M	-	2.400	2.5	2.600	V
		S5228M	-	2.688	2.8	2.912	V
		S5230M	-	2.880	3.0	3.120	V
		S5233M	-	3.168	3.3	3.432	V
		S5250M	-	4.800	5.0	5.200	V
Line Regulation	$\Delta V_{O(\Delta V_I)}$	All	$1V \leq V_I - V_O \leq 10V$, $I_O=100\mu A$	-	0.3	5	mV
Load Regulation (Note3)	$\Delta V_{O(\Delta I_L)}$	All	$V_I=V_O+1V$, $I_O=100\mu A \sim 100mA$	-	8	24	mV
Standby Current	$I_{I(standby)}$	All	$V_{CT} \leq 0.4V$ (V_O shutdown)	-	0.01	1	μA
Quiescent Current (Note4)	I_{QC}	S5215M S5218M	$I_O=50mA$, $V_{CT} \geq 2.0V$	-	1.5	3.0	mA
		S5225M S5228M S5230M S5233M S5250M	$I_O=50mA$, $V_{CT} \geq 2.0V$	-	0.8	1.5	mA
		S5215M	$I_O=100mA$	-	400	500	mV
		S5218M	$I_O=100mA$	-	500	600	mV
		S5225M S5228M S5230M S5233M S5250M	$I_O=100mA$	-	140	250	mV
Dropout Voltage	V_{DROP}						
Control Voltage (ON)	$V_{CT(ON)}$	All	-	1.6	-	V_I	V
Control Voltage (OFF)	$V_{CT(OFF)}$	All	-	-	-	0.4	V
Control Current (ON)	$I_{CT(ON)}$	All	$V_{CT} \geq 2.0V$	2	5	10	μA
Control Current (OFF)	$I_{CT(OFF)}$	All	$V_{CT} \leq 0.4V$	-	0.01	1	μA

Note 3 : Regulation is measured at constant junction temperature using low duty cycle pulse testing.

Note 4 : Quiescent current is the regulator standby current plus pass transistor base current.

The total current drawn from the supply is the sum of the load current plus the quiescent current.

■ Typical Application



Low- Noise Operation: $C_{BYP} = 470\text{pF}$, $C_O \geq 47\mu F$

Basic Operation: C_{BYP} = not used, $C_O \geq 1\mu F$

Fig. 1 Fixed Voltage Regulator

Electrical Characteristic Curves

Fig.1 V_{DROD} vs. I_O

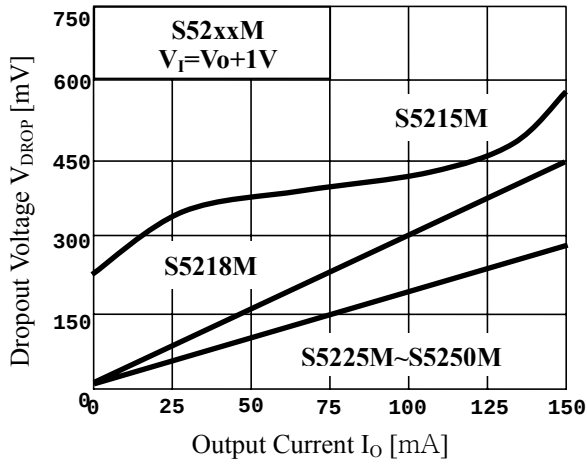


Fig.2 V_O vs. I_O

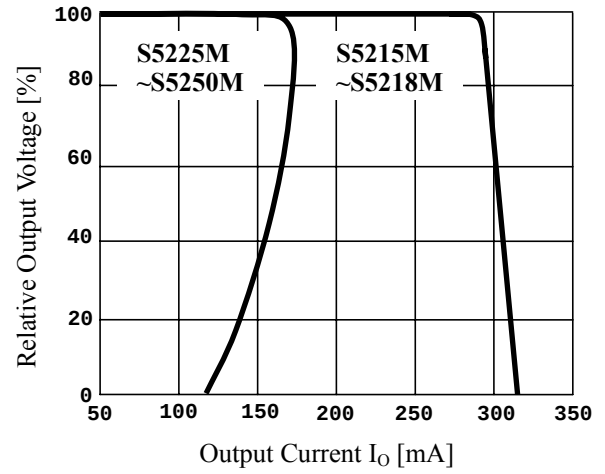


Fig.3 V_O vs. V_{CT}

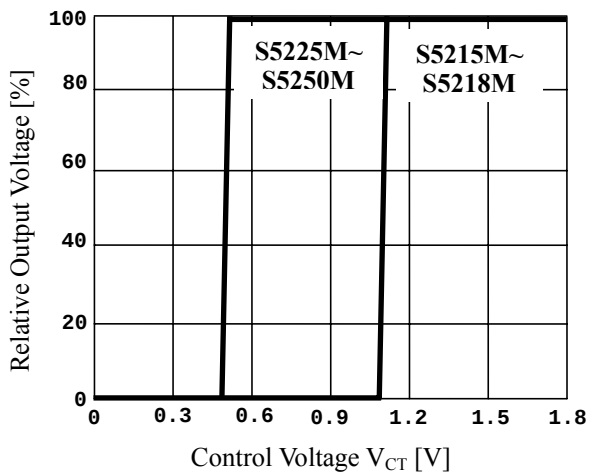


Fig.4 C_{BYP} vs. Turn On Time

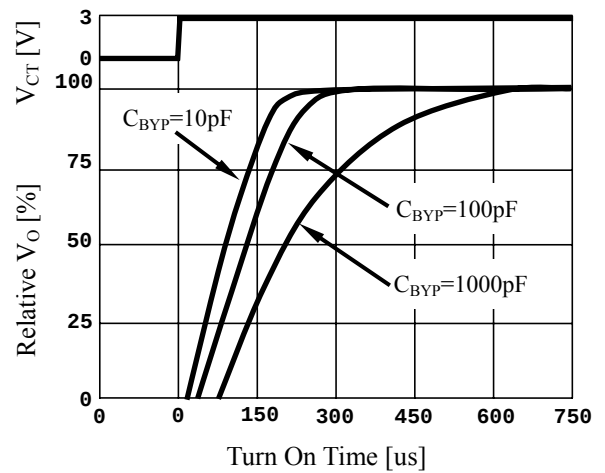
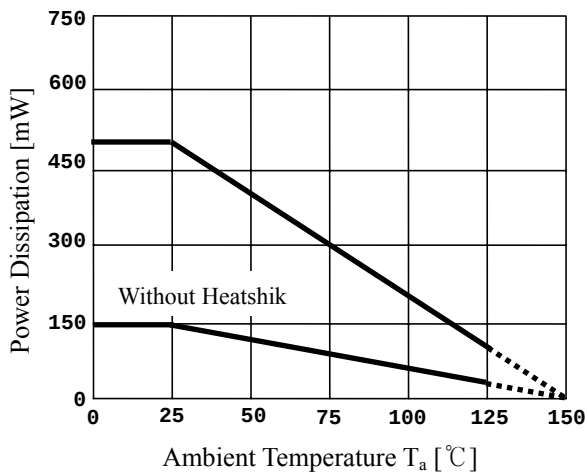


Fig.5 P_D vs. T_a



The AUK Corp. products are intended for the use as components in general electronic equipment (Office and communication equipment, measuring equipment, home appliance, etc.).

Please make sure that you consult with us before you use these AUK Corp. products in equipments which require high quality and / or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, transportation, combustion control, all types of safety device, etc.). AUK Corp. cannot accept liability to any damage which may occur in case these AUK Corp. products were used in the mentioned equipments without prior consultation with AUK Corp..

Specifications mentioned in this publication are subject to change without notice.