

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

The SRSS6376B33M are a group of positive voltage regulators manufactured by CMOS technologies with low power consumption and low dropout voltage, which provide large output currents even when the difference of the input-output voltage is small.

The SRSS6376B33M can deliver 300mA output current and allow an input voltage as high as 28V.

It's very suitable for the battery powered equipment, such as RF applications and other systems requiring a quiet voltage source.

FEATURES

- Low Quiescent Current: 2 μ A
- Operating Voltage Range: 2.5V~28V
- Output Current: 300mA
- Low Dropout Voltage: 200mV@100mA($V_{OUT}=3.3V$)
- Output Voltage: 1.2~12V
- High Power Supply Rejection Ratio: 70dB@1kHz
- Low Output Noise: 27x V_{OUT} μ V_{RMS} (10Hz~100kHz)
- Excellent Line and Load Transient Response
- Built-in Current Limiter, Short-Circuit Protection
- Over-Temperature Protection

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-235	3K	7 inch

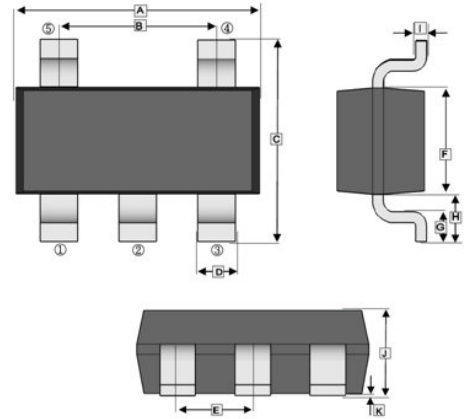
ORDER INFORMATION

Part Number	Type
SRSS6376B33M	Lead (Pb)-free
SRSS6376B33M-C	Lead (Pb)-free and Halogen-free

PIN DESCRIPTION

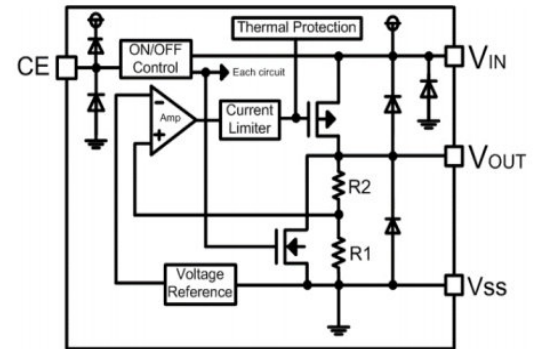
Pin No.	Name	Description
1	V_{IN}	Power Input Pin
2	V_{SS}	Ground
3	CE	Chip Enable Pin
4	NC	No Connection
5	V_{OUT}	Output Pin

SOT-235

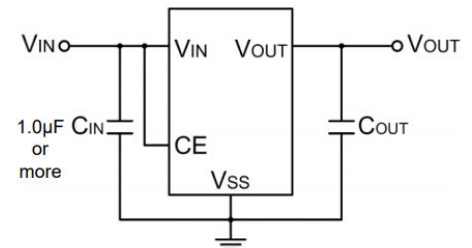


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.02	G	0.30	0.60
B	1.90 TYP.		H	0.60 TYP.	
C	1.50	3.00	I	0.08	0.20
D	0.30	0.50	J	0.95	1.45
E	0.95 TYP.		K	0	0.15
F	1.50	2.95			

Block Diagram



Typical Applications



ABSOLUTE MAXIMUM RATINGS ¹ ($T_A=25^{\circ}\text{C}$, unless otherwise noted.)

Parameter	Symbol	Value	Units
Input Voltage ²	V_{IN}	-0.3~33	V
Output Voltage ²	V_{OUT}	0.3~13	V
Output Current	I_{OUT}	300	mA
Power Dissipation	P_D	400	mW
Soldering Temperature & Time	T_{SOLDER}	260°C, 10s	°C
Operating Ambient Temperature	T_A	-40~85	°C
Junction & Storage Temperature Range ³	T_J, T_{STG}	-40~125, -65~150	°C

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Value	Units
Supply Voltage at V_{IN}	V_{IN}	2.5~28	V
Operating Junction Temperature Range, T_J	T_J	-40~125	°C
Operating Free Air Temperature Range, T_A	T_A	-40~85	°C

ELECTRICAL CHARACTERISTICS ($V_{IN}=V_{OUT}+1\text{V}$, $C_{IN}=C_{OUT}=1\mu\text{F}$, $T_A=25^{\circ}\text{C}$, unless otherwise noted.)

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Input Voltage	V_{IN}	2.5	-	28	V	
Output Voltage Range	V_{OUT}	1.2	-	12		
DC Output Accuracy		-2	-	2	%	$I_{OUT}=10\text{mA}$
Dropout Voltage ⁴	V_{dif}	-	200	-	mV	$I_{OUT}=100\text{mA}, V_{OUT}=3.3\text{V}$
Supply Current	I_{SS}	-	2	5	μA	$I_{OUT}=0\text{A}, 1.2\text{V}<V_{OUT}\leq 7\text{V}$
		-	3	6		$I_{OUT}=0\text{A}, 7.0\text{V}<V_{OUT}\leq 12\text{V}$
CE "High" Voltage	V_{CEH}	1.5	-	V_{IN}	V	
CE "Low" Voltage	V_{CEL}	-	-	0.3		
Line Regulation	$\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta V_{IN}}$	-	0.01	0.3	%/V	$I_{OUT}=10\text{mA}, V_{OUT}+1\text{V}\leq V_{IN}\leq 28\text{V}$
Load Regulation	ΔV_{OUT}	-	10	-	mV	$V_{IN}=V_{OUT}+1\text{V}, 1\text{mA}\leq I_{OUT}\leq 100\text{mA}$
Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T \times V_{OUT}}$	-	50	-	ppm	$I_{OUT}=40\text{mA}, -40\leq T\leq 85^{\circ}\text{C}$
Output Current Limit	I_{LMT}	-	260	-	mA	$V_{OUT}=0.5 \times V_{OUT}(\text{Normal}), V_{IN}=5\text{V}$
Short Current	I_{SHORT}	-	100	-	mA	$V_{OUT}=V_{SS}$
Power Supply Rejection Ratio	PSRR	-	75	-	dB	$f=100\text{Hz}, I_{OUT}=50\text{mA}$
		-	70	-		$f=1\text{kHz}, I_{OUT}=50\text{mA}$
		-	55	-		$f=10\text{kHz}, I_{OUT}=50\text{mA}$
		-	40	-		$f=100\text{kHz}, I_{OUT}=50\text{mA}$
Output Noise Voltage	V_{ON}	-	$27 \times V_{OUT}$	-	μVRMS	$\text{BW}=10\text{Hz}\sim 100\text{kHz}$,
Thermal Shutdown Temperature	T_{SD}	-	160	-	°C	
Thermal Shutdown Hysteresis	ΔT_{SD}	-	20	-	°C	
Standby Current	I_{STBY}	-	-	0.5	μA	$\text{CE}=V_{SS}$
C_{OUT} Auto-Discharge Resistance	$R_{DISCHRG}$	-	150	-	Ω	$V_{IN}=5\text{V}, V_{OUT}=3\text{V}, V_{CE}=V_{SS}$

Notes:

- Stresses beyond those listed under absolute maximum ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under recommended operating conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
- All voltages are with respect to network ground terminal.
- This IC includes over temperature protection that is intended to protect the device during momentary overload. Junction temperature will exceed 125°C when over temperature protection is active. Continuous operation above the specified maximum operating junction temperature may impair device reliability.
- V_{dif} : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of V_{OUT} (E).

TYPICAL CHARACTERISTICS

