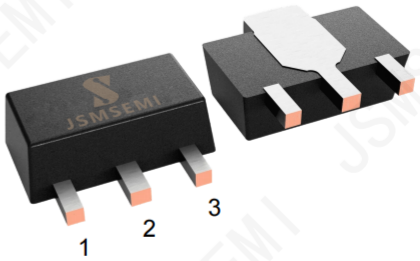
General Description

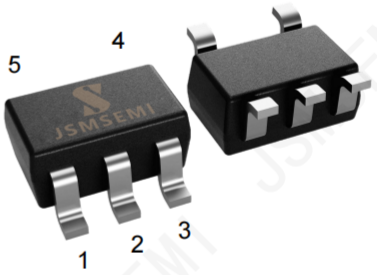
AP2205 Series are a set of Low Dropout Linear Regulator ICs implemented in CMOS technology. They can withstand voltage 24V.And they are available with lowvoltage drop and low quiescent current widely used in audio,video and communi -cation appliances.



SOT-89-3L

Features

- Low Power Consumption
- Low Voltage Drop
- Low Temperature Coefficient
- Withstanding Voltage 24V
- Quiescent Current 3.0μA
- Output Voltage Accuracy:tolerance ± 2%
- High output current:300mA



SOT-23-5L

Applications

- Battery-powered Equipments
- Communication Equipments
- Audio/Video Equipments

Absolute Maximum Ratings

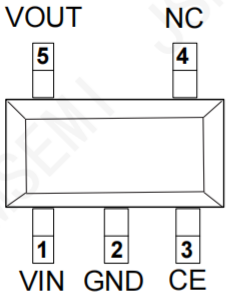
Description	Symbol	Value range	Unit
Limit Power Voltage	V_{IN}	−0.3～+26	V
Storage Temperature Range	T_{STG}	−50～+125	℃
Operating Free-air Temperature Range	T_A	−40～+85	℃

Note: Stresses greater than 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 Ratings" for extended periods may affect device reliability.

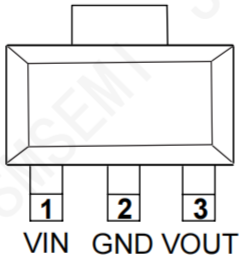
Heat Dissipation

Description	Symbol	Package	Value range	Unit
Thermal resistance	θ_{JA}	SOT-89-3L	200	℃/W
		SOT-23-5L	500	℃/W
Power dissipation	P_W	SOT-89-3L	500	mW
		SOT-23-5L	200	mW

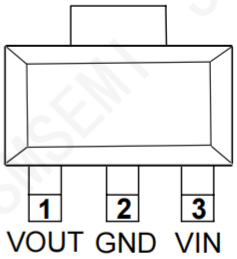
PIN Description



SOT-23-5L



SOT-89-3L（Y）



SOT-89-3L（YR）

PIN No.			Name	Functions Description
SOT-23-5L	SOT-89-3L（Y）	SOT-89-3L（YR）		
2	2	2	GND	ground
1	1	3	VIN	input
5	3	1	VOUT	output
3			CE	ON/OFF Control
4			NC	NoConnect

Ordering Information

Order number	Package	Marking	Operation Temperature Range	MSL Grade	Ship, Quantity	Green
AP2205-33W5-7-JSM	SOT-23-5L	5G**	-40 to 85°C	3	T&R,3000	Rohs
AP2205-50W5-7-JSM	SOT-23-5L	5H**	-40 to 85°C	3	T&R,3000	Rohs
AP2205-30YR-13-JSM	SOT-89-3L	6F**	-40 to 85°C	3	TUBE,1000	Rohs
AP2205-33Y-13-JSM	SOT-89-3L	5G**	-40 to 85°C	3	TUBE,1000	Rohs
AP2205-33YR-13-JSM	SOT-89-3L	6G**	-40 to 85°C	3	TUBE,1000	Rohs
AP2205-50Y-13-JSM	SOT-89-3L	5H**	-40 to 85°C	3	TUBE,1000	Rohs
AP2205-50YR-13-JSM	SOT-89-3L	6H**	-40 to 85°C	3	TUBE,1000	Rohs

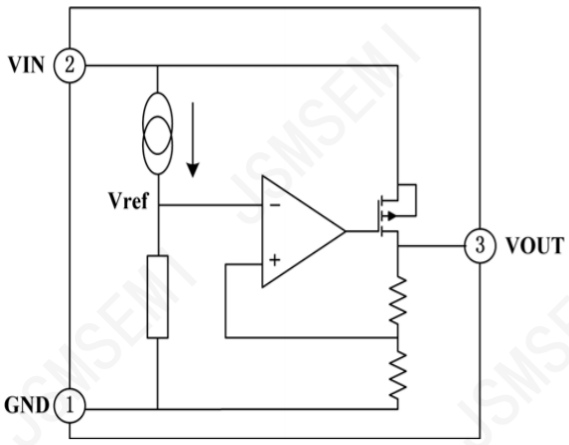
DC Characteristics(unless otherwise noted T_A=＋25°C)

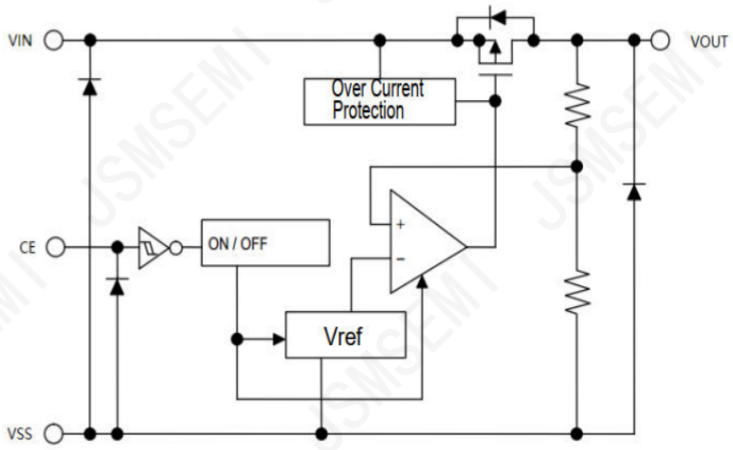
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Input Voltage	V_{IN}		3.0		24	V
Output Voltage	V_{OUT}		3.0		5.0	V
Voltage Accuracy		I_{OUT}=1mA	-2		+2	%
Output Current	I_{OUT}	V_{IN}=V_{OUT}+2.0V	—	300	—	mA
Load Regulation	△V_{OUT}	V_{IN}=V_{OUT}+2.0V 1mA≤I_{OUT}≤150mA	—	1 5	—	mV
Line Regulation	△V_{OUT}/ V_{OUT}*△V_{IN}	V_{OUT}+1.0V≤V_{IN}≤20V I_{OUT}=10mA	—	0.015	0.2	%/V
Voltage Drop	V_{DIF} ①	I_{OUT}=100mA,V_{OUT}=3.3V	—	200	—	mV
Quiescent Current	I_{SS}	V_{CE}=V_{IN}	—	3.0	5.0	μA
Standby Current	$I_{STANDBY}$	V_{CE}=V_{SS}			0.2	μA
--	V_{CEH}	V_{IN}=V_{OUT}+2.0V	1.7		24	V
--	V_{CEL}	V_{IN}=V_{OUT}+2.0V	0		0.3	V
short-circuit current	I_{SHORT}	V_{IN}=V_{OUT}+2.0V	—	400	—	mA
Temperature Coefficient	△V_{OUT}/ △T_A*V_{OUT}	V_{IN}=V_{OUT}+2.0V I_{OUT}=10mA -40°C≤T_A≤125°C	—	±100	—	p p m / ℃
Discharge Resistor	R_{DIS}②	VCE<0.5V		300		Ω

Note:When V_{IN}=V_{OUT}+2.0V,as the output voltage declined 2%,the V_{DIF}=V_{IN}-V_{OUT}.

Output active discharge resistor R_{DIS}, As the input voltage increases, it decreases.

Functional Block Diagram



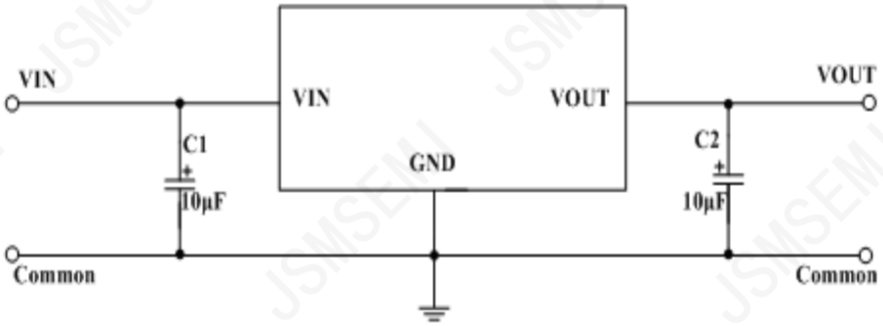


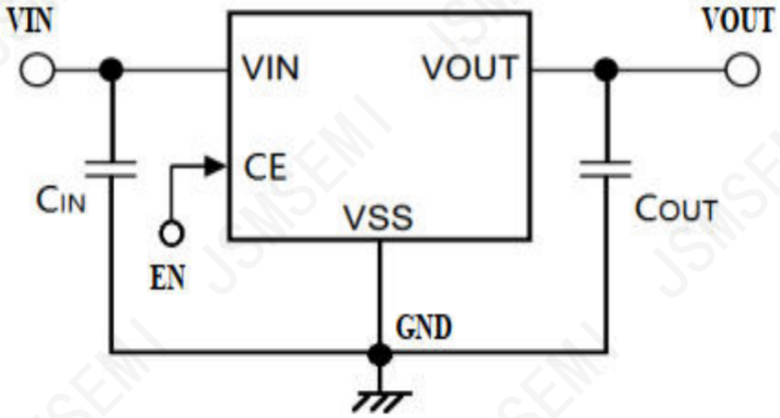
Functional Description

AP2205 series are linear voltage regulator ICs withstanding 24V voltage.
The series ICconsists of a voltage reference, an error amplifiera current limiter and a phase compensationcircuit plus a driver transistor.
The output stabilization capacitor is also compatible with low ESR ceramic capacitors.
The over current protection circuit and the over voltage protection circuit are built-in. The protection circuit will operate when the output current or input voltage reaches limit level.

Typical Application Circuit

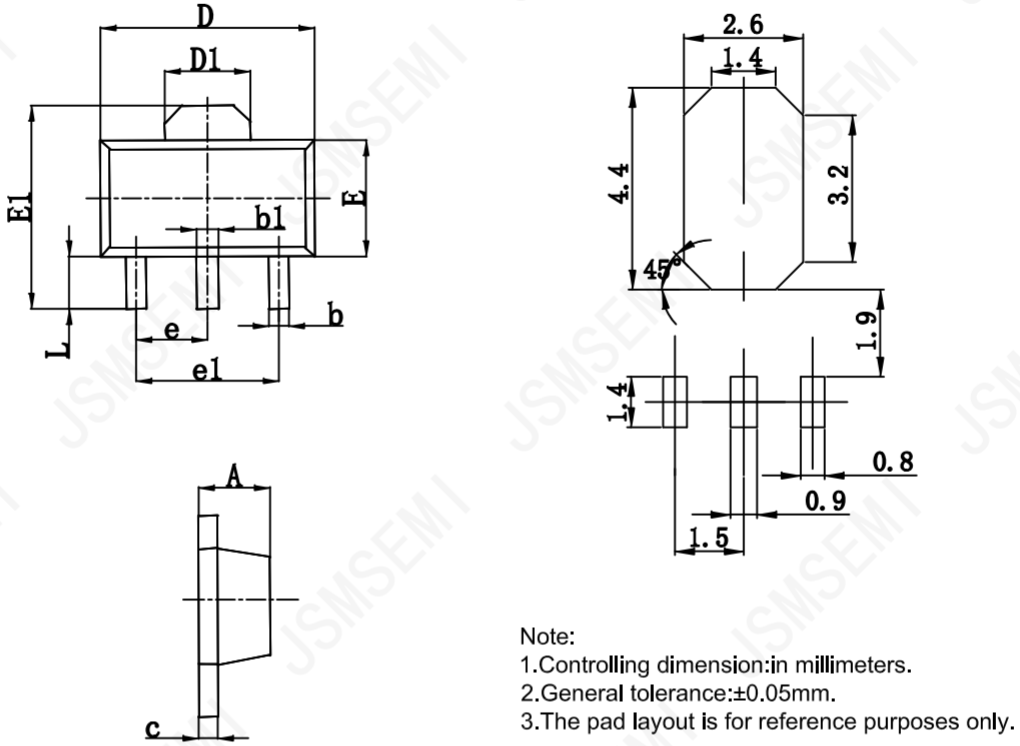
Basic Circuit





Package Information

SOT-89-3L

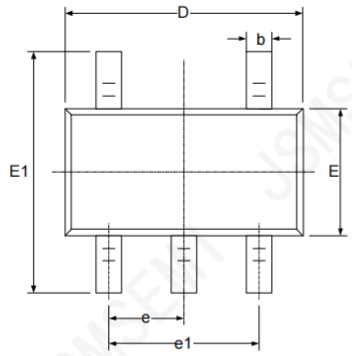


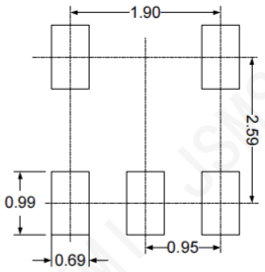
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.197
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L	0.900	1.200	0.035	0.047

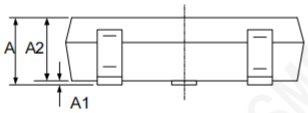
Package Information

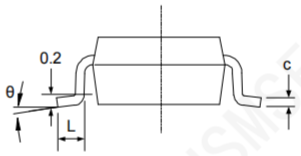
SOT-23-5L





RECOMMENDED LAND PATTERN (Unit: mm)





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°