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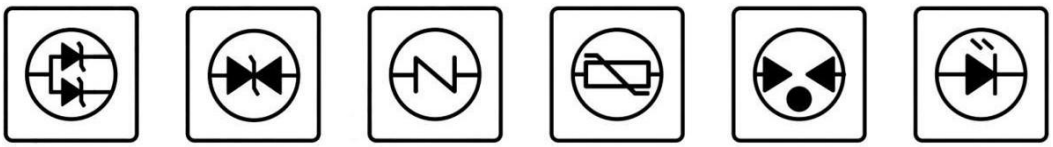
SEMICONDUCTOR



HT73XX-3-MS/HT73XX-3(MS)

Product specification

GENERAL DESCRIPTION

HT73XX-3-MS/HT73XX-3(MS) series are a set of Low Dropout Linear Regulator ICs implemented inCMOS technology.They can withstand voltage 24V.And they are available with lowvoltage drop and low quiescent current,widely used in audio,video and communication appliances.

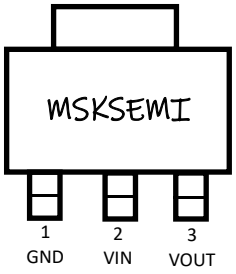
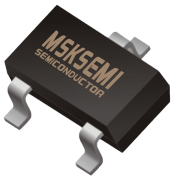
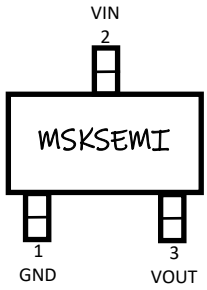
FEATURES

- Low Power Consumption
- Low Voltage Drop
- Low Temperature Coefficient
- Withstanding Voltage 24V
- Quiescent Current 1.5μA
- Output Voltage Accuracy:tolerance±2%
- High output current:300mA

TYPICAL APPLICATIONS

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

Reference News and Marking

SOT-89		SOT-23	
			

HT7328-3-MS	HT7330-3-MS	HT7333-3-MS	HT7336-3-MS	HT7350-3-MS
MSKSEMI HT7328-3	MSKSEMI HT7330-3	MSKSEMI HT7333-3	MSKSEMI HT7336-3	MSKSEMI HT7350-3
HT7328-3(MS)	HT7330-3(MS)	HT7333-3(MS)	HT7336-3(MS)	HT7350-3(MS)
7328-3 MSK	7330-3 MSK	7333-3 MSK	7336-3 MSK	7350-3 MSK

NOTE:HT73XX-3-MS is SOT-89, HT73XX-3 (MS) is SOT-23

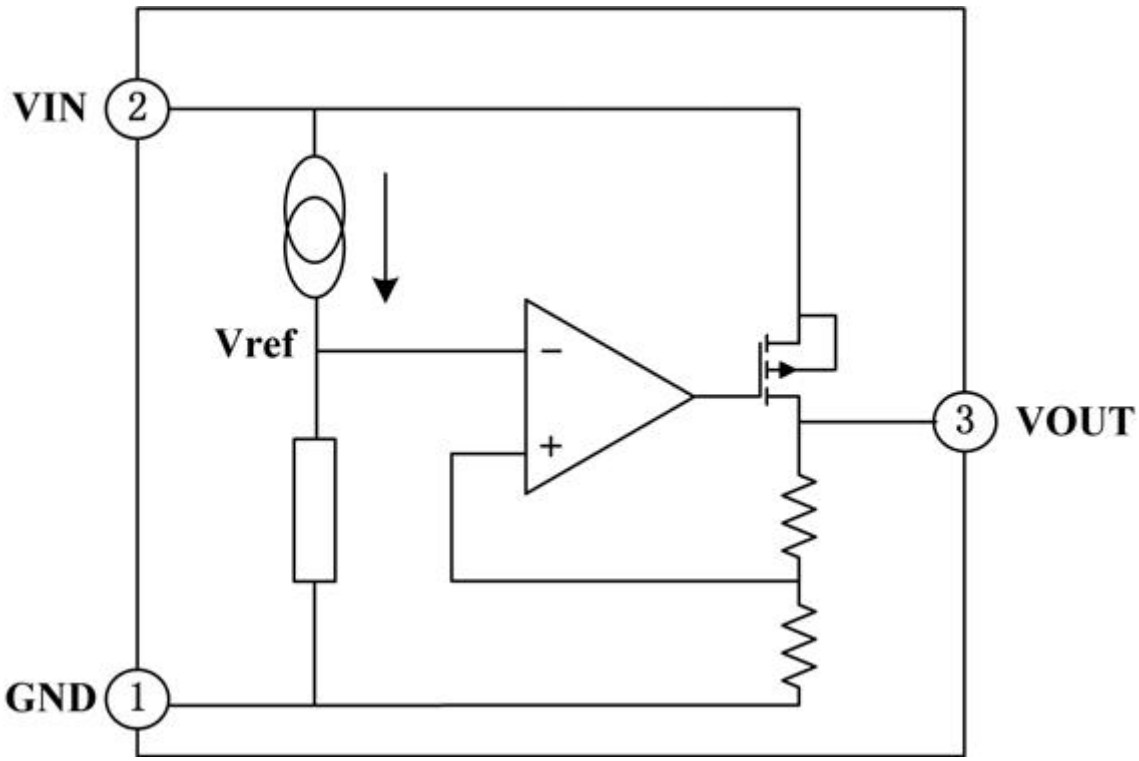
PIN DESCRIPTION

No.	Name	Functions Description
1	GND	ground
2	VIN	input
3	VOUT	output

Order information

Series	Output	Package	QTY	Series	Output	Package	QTY
HT7328-3-MS	2.8V	SOT-89-3	1000	HT7328-3(MS)	2.8V	SOT-23	3000
HT7330-3-MS	3.0V			HT7330-3(MS)	3.0V		
HT7333-3-MS	3.3V			HT7333-3(MS)	3.3V		
HT7336-3-MS	3.6V			HT7336-3(MS)	3.6V		
HT7350-3-MS	5.0V			HT7350-3(MS)	5.0V		

FUNCTIONAL BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Description	Symbol	Value range	Unit
Limit Power Voltage	V_{IN}	-0.3～+30	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.

HEATDISSIPATION

Description	Symbol	Package	Value range	Unit
Thermal resistance	θ_{JA}	SOT89-3	200	℃/W
		SOT23	500	℃/W
Power dissipation	Pw	SOT89-3	500	mW
		SOT23	200	mW

DC CHARACTERISTICS(unless otherwise noted TA=+25°℃)

Series HT7328-3-MS/HT7328-3(MS)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	V_{IN}=V_{OUT}+2.0V, I_{OUT}=10mA	2.744	2.80	2.856	V
Output Current	I_{OUT}	V_{IN}=V_{OUT}+2.0V	70	100	-	mA
Load Regulation	△V_{OUT}	V_{IN}=V_{OUT}+2.0V 1mA≤I_{OUT}≤300mA	-	25	60	mV
Voltage Drop	V_{DIF}	I_{OUT}=10mA,△V_{OUT}=2%	-	30	100	mV
Quiescent Current	Iss	No Load	-	1.5	2.5	μA
Line Regulation	△V_{OUT}/V_{OUT}* △V_{IN}	V_{OUT}+1.0V≤V_{IN}≤22V, I_{OUT}=1mA	-	-	0.2	%/V
Input Voltage	V_{IN}	-	-	-	30	V
Temperature Coefficient	△V_{OUT} △T_A*V_{OUT}	V_{OUT}+2.0V,I_{OUT}=10mA, -40C≤T_A≤85℃	-	100	-	ppm/℃
Overcurent Protection	Ilim	V_{OUT}=0V	-	400	-	mA

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

Series HT7330-3-MS/HT7330-3(MS)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	VOUT	VIN=VouT+2.0V, IOUT=10mA	2.94	3.0	3.06	V
Output Current	IOUT	VIN=VOUT+2.0V	300	-	-	mA
Load Regulation	△VOUT	VIN=VOUT+2.0V ImA≤IOUT≤300mA	-	37	100	mV
Voltage Drop	VDIF	IOUT=10mA,△VOUT=2%	-	210	300	mV
Quiescent Current	Iss	No Load	-	1.5	2.5	μA
Line Regulation	△VOUT/VOUT* △VIN	VOUT+1.0V≤VIN≤22V, IOUT=1mA	-	-	0.2	%/V
Input Voltage	VIN	-	-	-	24	V
Temperature Coefficient	△VOUT △TA*VOUT	VOUT+2.0V,IOUT=10mA, -40C≤TA≤85℃	-	±100	-	ppm/℃
Overcurent Protection	Ilim	VOUT=0V	-	400	-	mA

Note: WhenVIN=VOUT+2.0V,as the output voltage declined 2%,the VDIF=VIN-VOUT

Series HT7333-3-MS/HT7333-3(MS)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	VOUT	VIN=VouT+2.0V, IOUT=10mA	3.234	3.3	3.366	V
Output Current	IOUT	VIN=VOUT+2.0V	300	-	-	mA
Load Regulation	△VOUT	VIN=VOUT+2.0V ImA≤IOUT≤300mA	-	37	100	mV
Voltage Drop	VDIF	IOUT=10mA,△VOUT=2%	-	195	300	mV
Quiescent Current	Iss	No Load	-	1.5	2.5	μA
Line Regulation	△VOUT/VOUT* △VIN	VOUT+1.0V≤VIN≤22V, IOUT=1mA	-	-	0.2	%/V
Input Voltage	VIN	-	-	-	24	V
Temperature Coefficient	△VOUT △TA*VOUT	VOUT+2.0V,IOUT=10mA, -40C≤TA≤85℃	-	±100	-	ppm/℃
Overcurent Protection	Ilim	VOUT=0V	-	400	-	mA

Note: WhenVIN=VOUT+2.0V,as the output voltage declined 2%,the VDIF=VIN-VOUT

Series HT7336-3-MS/HT7336-3(MS)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	V_{IN}=V_{OUT}+2.0V, I_{OUT}=10mA	3.528	3.6	3.672	V
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}≤300mA	-	37	100	mV
Voltage Drop	V_{DIF}	I_{OUT}=10mA,△V_{OUT}=2%	-	180	300	mV
Quiescent Current	Iss	No Load	-	1.5	2.5	μA
Line Regulation	△V_{OUT}/V_{OUT}* △V_{IN}	V_{OUT}+1.0V≤V_{IN}≤22V, I_{OUT}=1mA	-	-	0.2	%/V
Input Voltage	V_{IN}	-	-	-	24	V
Temperature Coefficient	△V_{OUT} △T_A*V_{OUT}	V_{OUT}+2.0V,I_{OUT}=10mA, -40C≤T_A≤85℃	-	±100	-	ppm/℃
Overcurent Protection	Ilim	V_{OUT}=0V	-	400	-	mA

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

Series HT7350-3-MS/HT7350-3(MS)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	V_{IN}=V_{OUT}+2.0V, I_{OUT}=10mA	4.9	5.0	5.1	V
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}≤300mA	-	37	100	mV
Voltage Drop	V_{DIF}	I_{OUT}=10mA,△V_{OUT}=2%	-	150	300	mV
Quiescent Current	Iss	No Load	-	1.5	2.5	μA
Line Regulation	△V_{OUT}/V_{OUT}* △V_{IN}	V_{OUT}+1.0V≤V_{IN}≤22V, I_{OUT}=1mA	-	-	0.2	%/V
Input Voltage	V_{IN}	-	-	-	24	V
Temperature Coefficient	△V_{OUT} △T_A*V_{OUT}	V_{OUT}+2.0V,I_{OUT}=10mA, -40C≤T_A≤85℃	-	±100	-	ppm/℃
Overcurent Protection	Ilim	V_{OUT}=0V	-	400	-	mA

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

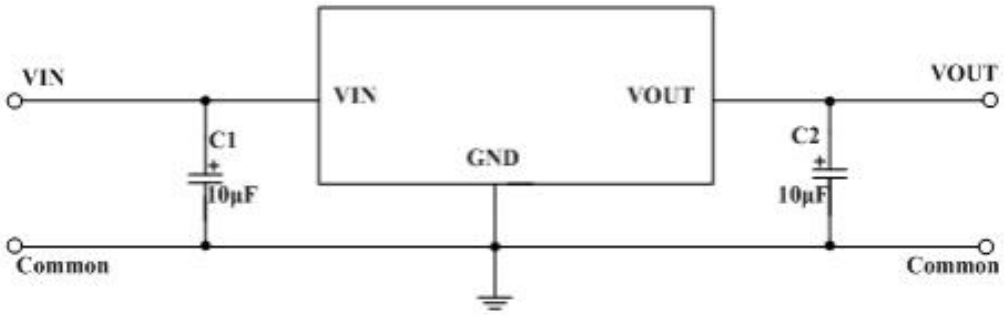
FUNCTIONAL DESCRIPTION

HT73XX-3-MS/HT73XX-3(MS) series are linear voltage regulator ICs withstanding 24V voltage. The series ICconsists of a voltage reference,an error amplifier,a current limiter and a phase compensation circuit 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.

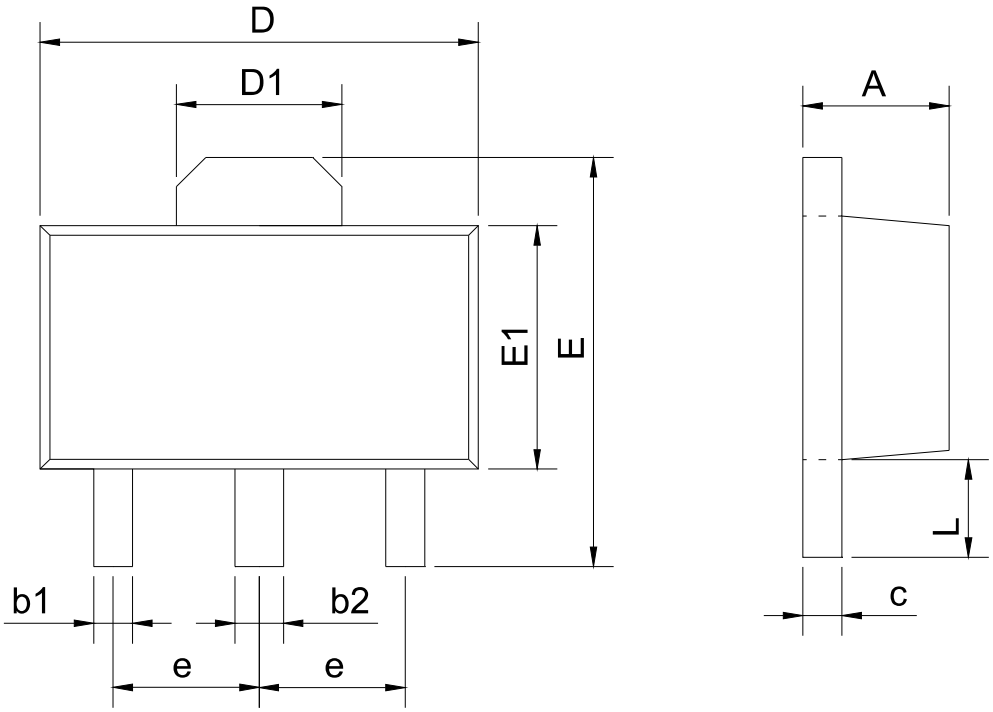
TYPICALAPPLICATION CIRCUIT

Basic Circuit



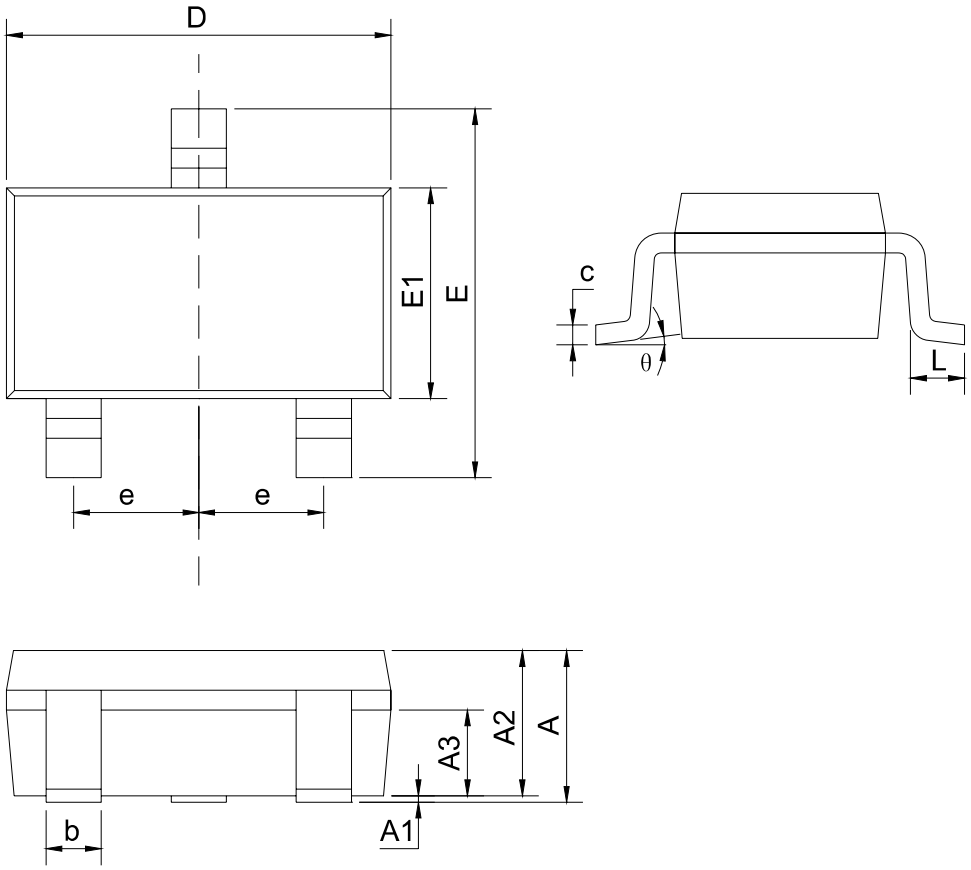
PACKAGE INFORMATION

SOT89



SYMBOL	mm	
	min	max
A	1.40	1.60
b1	0.35	0.50
b2	0.45	0.60
c	0.36	0.46
D	4.30	4.70
D1	1.40	1.80
E	4.00	4.40
E1	2.30	2.70
e	1.50BSC	
L	0.80	1.20

SOT23-3



SYMBOL	mm	
	min	max
A		1.35
A1	0.04	0.15
A2	1.00	1.20
A3	0.55	0.75
b	0.38	0.48
c	0.10	0.25
D	2.72	3.12
E	2.60	3.00
E1	1.20	1.80
e	0.95BSC	
L	0.30	0.60
θ	0	8°

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