GENERAL DESCRIPTION

The TPS763 series is a set of low voltage differential (LDO)converters with a wide voltage input range of 3 .0V to 10V, low voltage differential, low power consumption, and miniaturized packaging. The output voltage range is 1.8-5.0V, and the TPS763 has low static current characteristics as low as 8.0uA. The circuit also has a CE enable control port, which can put the circuit into sleep mode. It is particularly suitable for battery powered and long-term standby system equipment applications, helping to reduce standby power consumption of system equipment, effectively extending standby time and battery life.

FEATURES

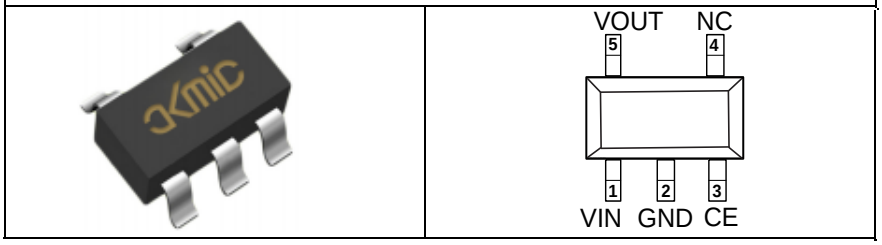
- Low Power Consumption
- Low Voltage Drop
- Low Temperature Coefficient
- Withstanding Voltage 12V
- Quiescent Current 8.0μA
- Output Voltage Accuracy: tolerance ±2%
- High output current: 150mA

TYPICAL APPLICATIONS

- Battery-powered Equipments
- Communication Equipments
- Audio/Video Equipments
- Smart Battery Packs
- Smoke Detectors
- CO2 DETECTORS

PIN CONFIGURATION

SOT23-5



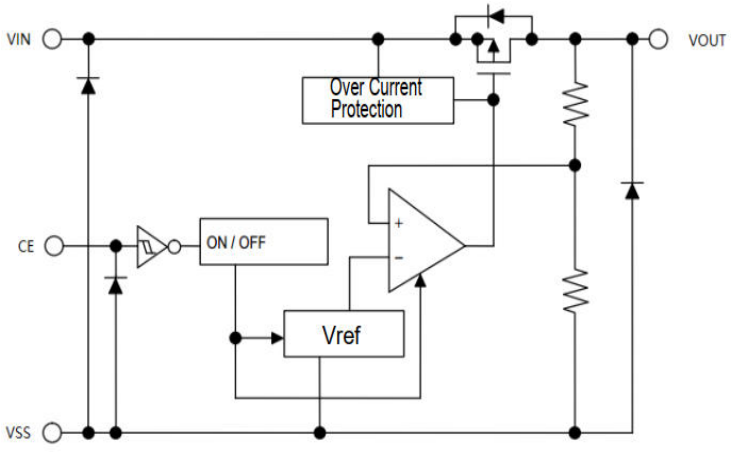
PIN DESCRIPTION

PIN No. SOT23-5	Name	Functions Description
1	V_{IN}	input
2	GND	ground
3	CE	ON / OFF Control
4	NC	No Connect
5	V_{OUT}	output

ORDERING INFORMATION

Orderable Device	Package Type	Marking	Eco Plan	PackageQty
TPS7618DBVRW-AK	SOT23-5	PBII	RoHS & Green	3000
TPS76333DBVRW-AK	SOT23-5	PBEI	RoHS & Green	3000
TPS76325DBVRW-AK	SOT23-5	PBGI	RoHS & Green	3000
TPS76328DBVRW-AK	SOT23-5	PBGI	RoHS & Green	3000
TPS76350DBVRW-AK	SOT23-5	PBGI	RoHS & Green	3000

FUNCTIONAL BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Description	Symbol	Value range	Unit
Limit Power Voltage	V_{IN}	−0.3～+12	V
Storage Temperature Range	T_{STG}	−50～+125	℃
Operating Free-air Temperature Range	T_A	−30～+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}	SOT23-5	500	℃/W
Power dissipation	P_W	SOT23-5	200	mW

DC CHARACTERISTICS (unless otherwise noted T_A =＋25°C)
(V_{IN}= V_{OUT}+2.0V，C_{IN}=C_L=10uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Input Voltage	V_{IN}		3.0		10	V
Output Voltage	V_{OUT}		1.8		5.0	V
Voltage Accuracy		I_{OUT} =1mA	-2		+2	%
Output Current	I_{OUT}	V_{IN}=V_{OUT}+2.0V	—	150	—	mA
Load Regulation	△V_{OUT}	V_{IN}=V_{OUT}+2.0V 1mA≤I_{OUT}≤150mA	—	25	—	mV
Line Regulation	△V_{OUT}/ V_{OUT}* △V_{IN}	V_{OUT}+1.0V≤V_{IN}≤18V 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}	—	8.0	10	μA
Standby Current	$I_{STANDBY}$	V_{CE}=V_{SS}			0.1	μA
--	V_{CEH}	V_{IN}=V_{OUT}+2.0V	1.7		18	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	—	ppm/°C
Discharge Resistor	R_{DIS}②	VCE<0.5V		300		Ω

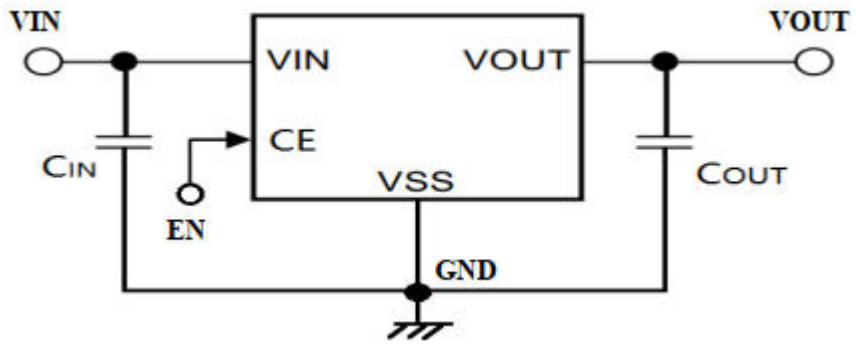
Note : When V_{IN}=V_{OUT}+2.0V, as the output voltage declined 2%, the V_{DIF}=V_{IN}-V_{OUT}.
Output active discharge resistor R_{DIS} , As the input voltage increases, it decreases.

FUNCTIONAL DESCRIPTION

TPS763series are linear voltage regulator ICs withstanding 10V voltage. The series ICconsists of a voltage reference, an error amplifier, a 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.

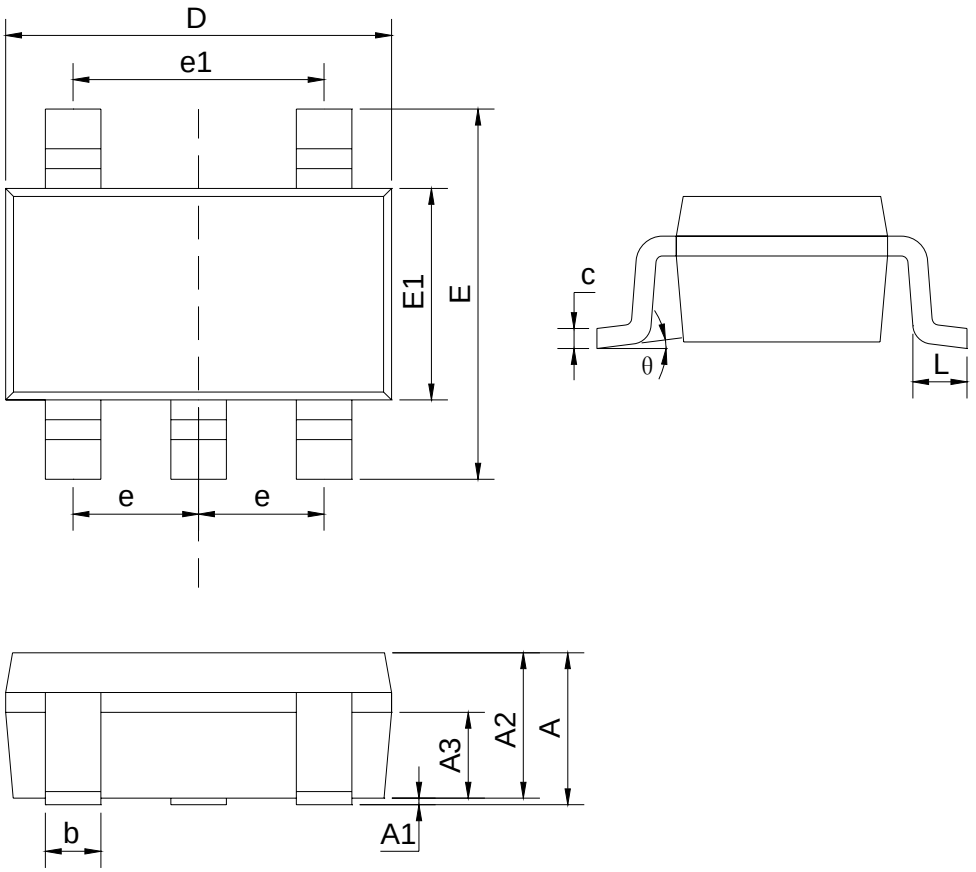
TYPICAL APPLICATION CIRCUIT

Basic Circuit



1. C_{IN} is used to stabilize the input capacitor
2. C_{IN} eramic capacitors greater than or equal to 1pF can be used for COUT.

SOT23-5



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	1.40	1.80
e	0.95BSC	
e1	1.90BSC	
L	0.30	0.60
θ	0	8°