

### Features

- 2 $\mu$ A Ground Current at no Load
- $\pm 2\%$  Output Accuracy
- 200mA Output Current
- Wide Operating Input Voltage Range: 3V to 36V
- Support Fixed Output Voltage 1.8V, 2.5V, 3.0V, 3.3V, 3.6V, 4.0V, 4.2V, 5.0V
- SOT-23-5 Package Available

### Applications

- Portable, Battery Powered Equipment
- Low Power Microcontrollers
- Laptop, Palmtops and PDAs
- Wireless Communication Equipment

### Ordering Information

## TP375C33S5

S5: SOT23-5 Package

Output voltage: 12=1.2V  
15=1.5V  
18=1.8V  
30=3.0V  
33=3.3V  
50=5.0V

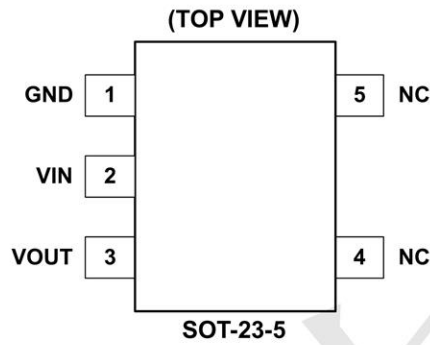
#### Marking Information



**P**: Logo  
XXX: Marking ID

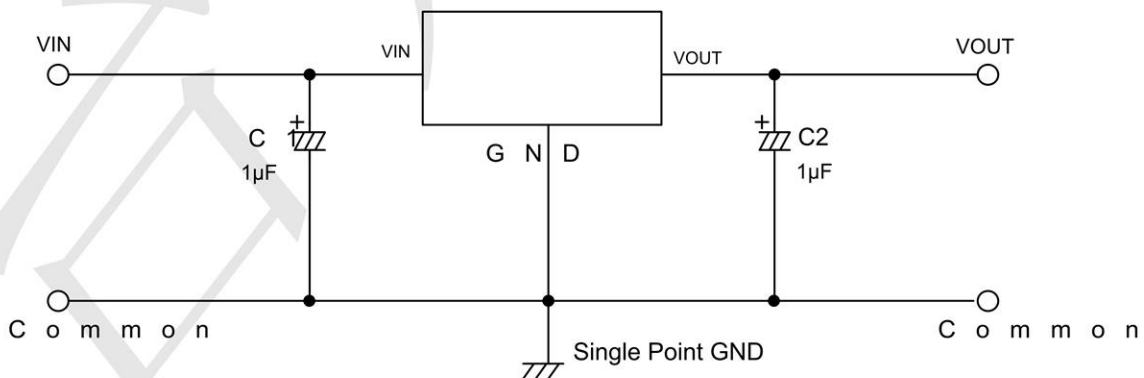
30=3.0V  
33=3.3V  
50=5.0V  
A2=12V

## PIN CONFIGURATION

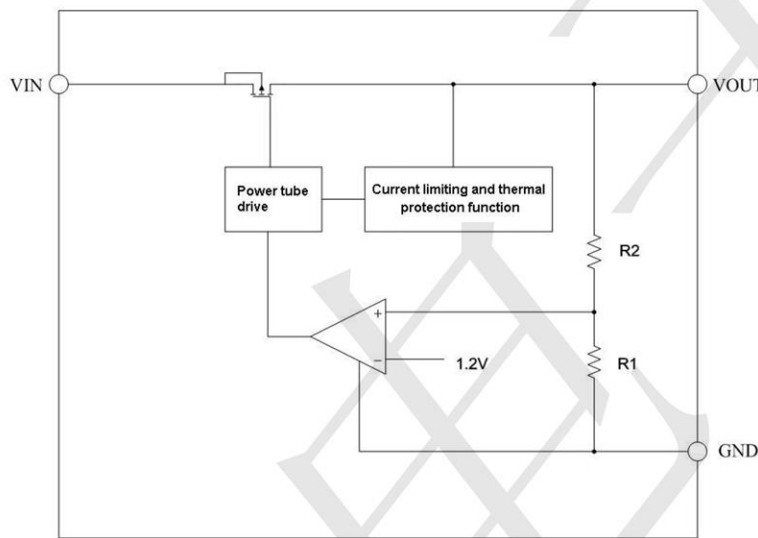


Pin Name	Pin Function
VIN	Power Input Voltage
GND	Ground
OUT	Output Voltage
NC	NO Connected
NC	NO Connected

## Typical Application Circuit



## BLOCK DIAGRAM



## Absolute Maximum Ratings

Parameter		Value	Unit
Supply Voltage		-0.3 ~ +40	V
	SOT-23-5	400	mW
Operating Junction Temperature	SOT-23-5	380	°C/W
Storage Temperature Range		-40 ~ +125	°C
Lead Temperature (Soldering, 10 sec)		-65 ~ +150	°C
ESD(HBM mode, ESDA/JEDECJS-001-2017)		300	°C
		+2000	V

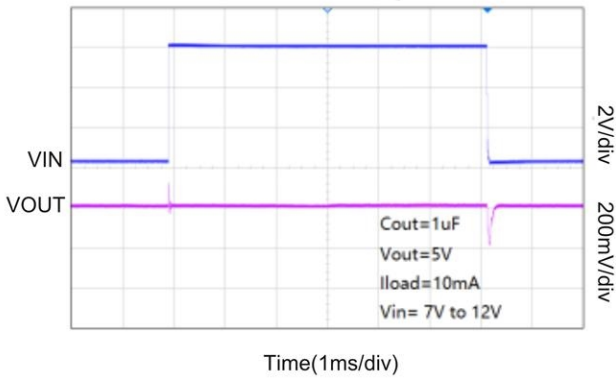
### Electrical Characteristics

( $V_{IN}=V_{OUT}+2$ ,  $C_{IN}=1\mu F$ ,  $C_{OUT}=1\mu F$ ,  $T_A=25^\circ C$ , unless otherwise noted.)

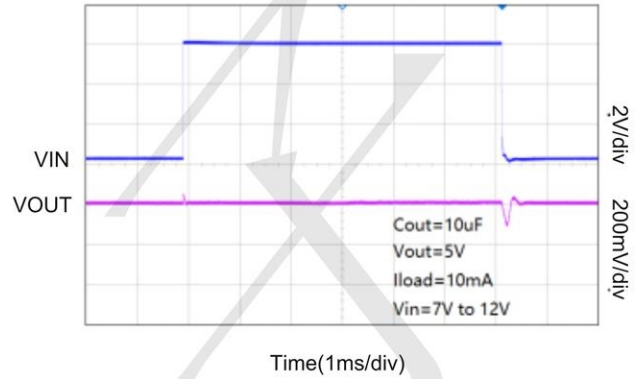
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit	
Input Voltage	$V_{IN}$		3	--	36	V	
Output Voltage Accuracy	$\Delta V_{OUT}$	$I_{OUT}=1mA$	-2	--	+2	%	
Maximum Output Current	$I_{OUT(Max)}$		150	--	--	mA	
Quiescent Current	$I_Q$	$I_{OUT}=0mA$	--	2		$\mu A$	
Dropout Voltage	$V_{DROP}$	$V_{OUT}=1.8V$	$I_{OUT}=150mA$	--	1250	1450	mV
			$I_{OUT}=100mA$	--	880	1050	mV
		$V_{OUT}=2.5V$	$I_{OUT}=150mA$	--	1150	1350	mV
			$I_{OUT}=100mA$	--	800	1000	mV
		$V_{OUT}=3.0V$	$I_{OUT}=150mA$	--	820	960	mV
			$I_{OUT}=100mA$	--	530	700	mV
		$V_{OUT}=3.3V$	$I_{OUT}=150mA$	--	800	950	mV
			$I_{OUT}=100mA$	--	520	680	mV
		$V_{OUT}=3.6V$	$I_{OUT}=150mA$	--	750	930	mV
			$I_{OUT}=100mA$	--	500	660	mV
		$V_{OUT}=5.0V$	$I_{OUT}=150mA$	--	670	900	mV
			$I_{OUT}=100mA$	--	420	600	mV
Line Regulation	$\Delta V_{LINE}$	$V_{IN}=V_{OUT}+2V$ to 30V $I_{OUT}=10mA$	--	--	0.2	%/V	
Load Regulation	$\Delta V_{LOAD}$	$V_{IN}=V_{OUT}+2V$ , $1mA < I_{OUT} < 150mA$	--	25	60	mV	
Short Current Protection	$I_{Short}$	OUT Short to GND	--	80	--	mA	
Output Noise	$e_N$	10Hz to 100KHz $I_{OUT}=30mA$	--	120	--	$\mu V_{RMS}$	
Power Supply Rejection Ratio	PSRR	$V_{IN}=12V$ , $I_{OUT}=1mA$	--	68	--	dB	

**Typical Operating Characteristics**

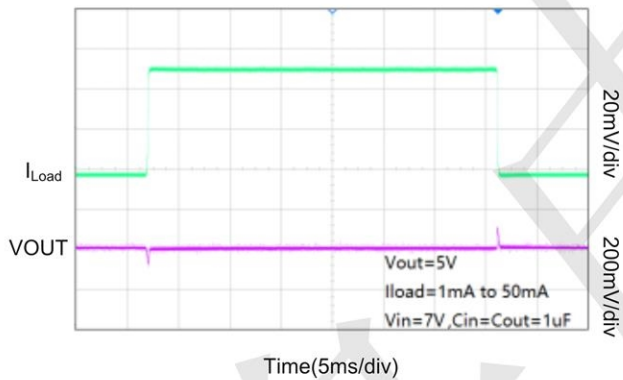
Line-Transient Response



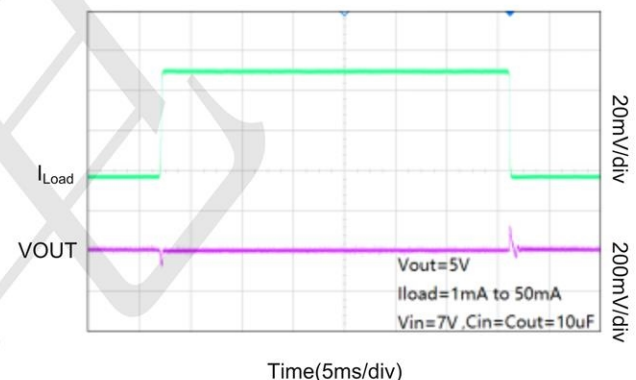
Line-Transient Response



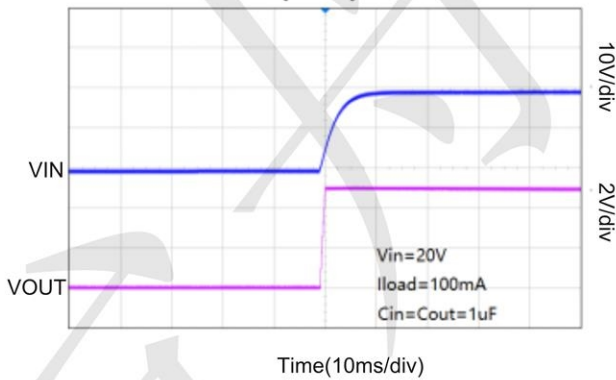
Load-Transient Response



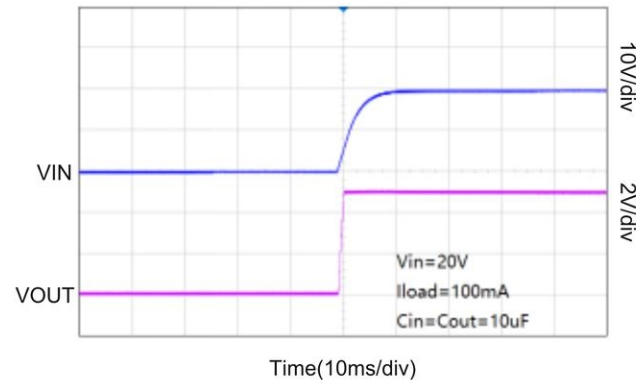
Load-Transient Response



Start up Response

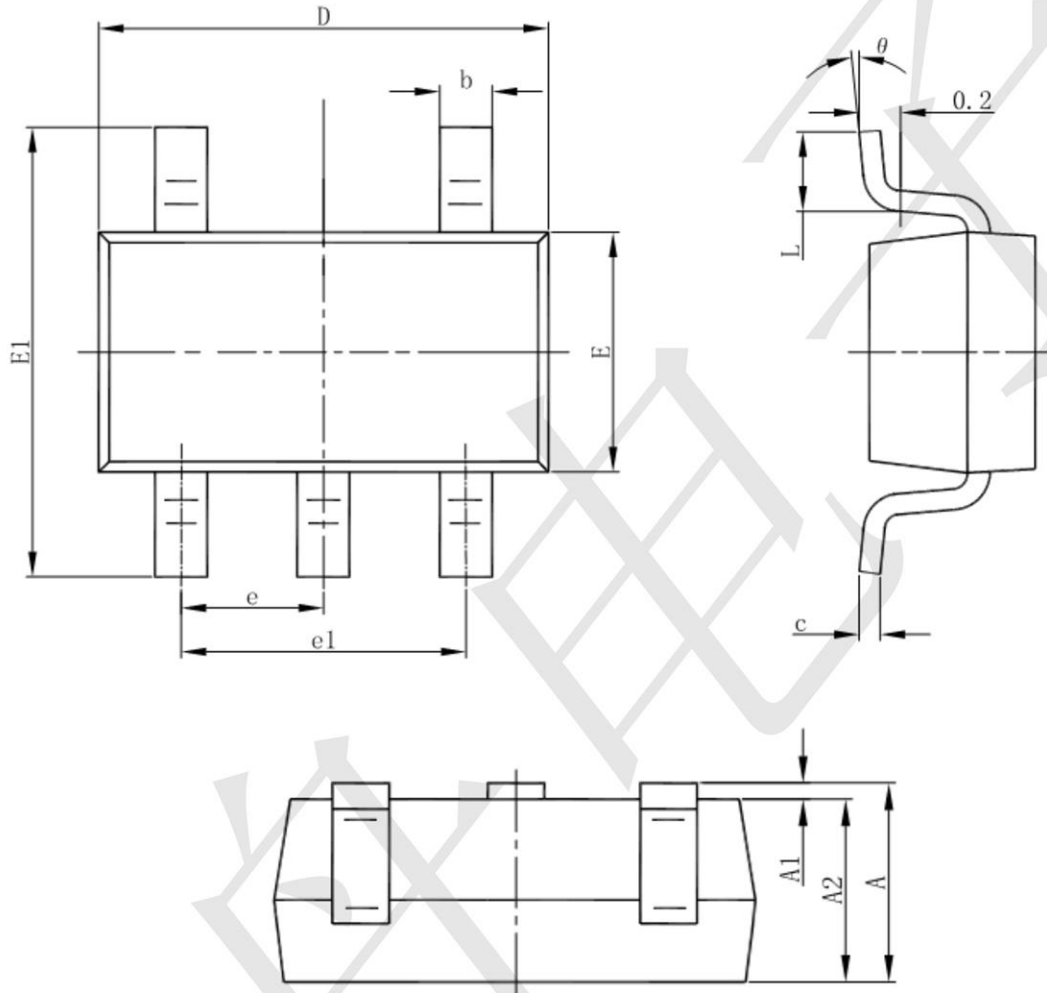


Start up Response





**Package information**  
SOT23-5



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
theta	0°	8°	0°	8°