TECH PUBLIC
台舟电子

XC6204B332MR

24V ,300mA,2uA, Higt PSRR Voltage Reaulator

www.sot23.com.tw

Features

- 2μA Ground Current at no Load
- ±2% Output Accuracy
- 300mA Output Current
- Wide Operating Input Voltage Range: 2V to 24V
- Dropout Voltage: 0.53V at 150mA (V_{OUT}=5V)
- Support Fixed Output Voltage
  1.8V, 2.5V, 2.8V, 3.0V, 3.3V, 3.6V, 5.0V
- Stable with Ceramic or Tantalum Capacitor
- Current Limit Protection
- Over-Temperature Protection
- SOT-23-5 Package Available

Applications

- Portable, Battery Powered Equipment
- Low Power Microcontrollers
- Laptop, Palmtops and PDAs
- Wireless Communication Equipment
- Audio/Video Equipment
- Car Navigation Systems
- Industrial Controls
- Weighting Scales
- Meters
- Home Automation

General Descrition

The Devices is a low-dropout (LDO) voltage regulators with enable function offering the benefits of high input voltage, low-dropout voltage, low-power consumption, and miniaturized packaging.

The features of low quiescent current as low as 2.0μA and zero disable current is ideal for powering the battery equipment to a longer service life. The Devices is stable with the ceramic output capacitor over its wide input range from 2V to 24V and the entire range of output load current.

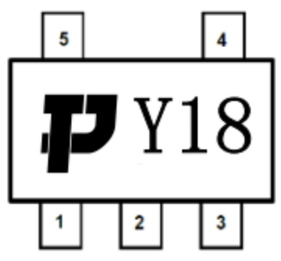
Ordering Information

XC6204B332MR

Output voltage: 182=1.8V
252=2.5V
282=2.8V
302=3.0V
362=3.6V
332=3.3V
502=5.0V

Marking

XC6204B182MR



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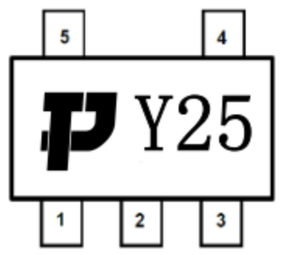

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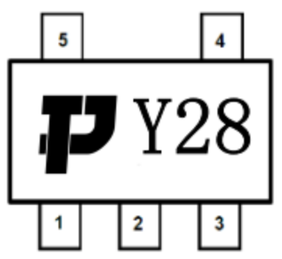

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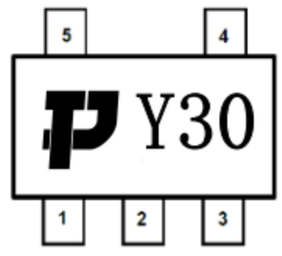

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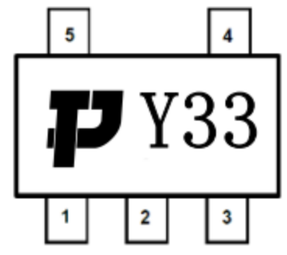

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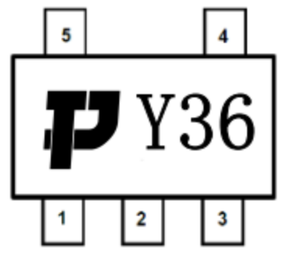

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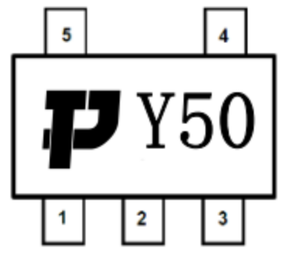
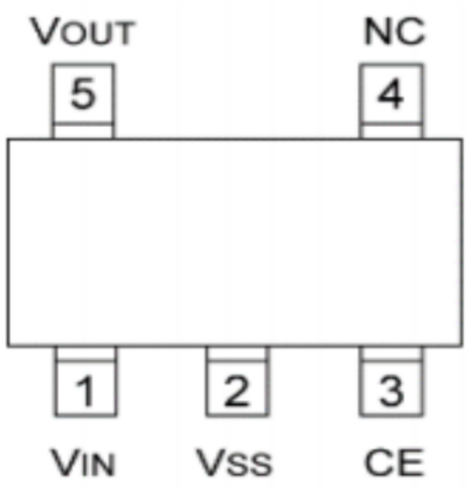


PIN CONFIGURATION



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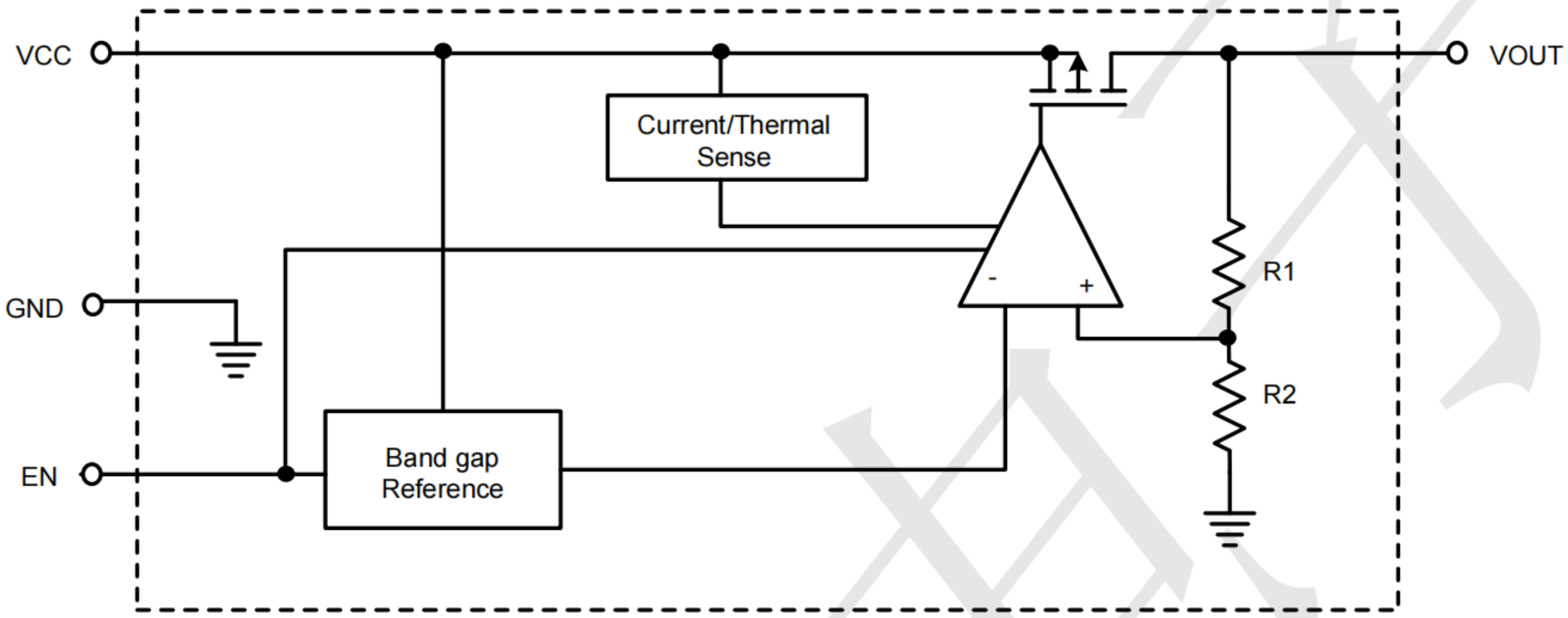
Pin No	Pin Name	Pin Function
1	VIN	Input of Supply Voltage.
2	VSS	Ground
3	CE	Enable Control Input.
4	NC	No Internal Connection.
5	VOUT	Output of the Regulator

BLOCK DIAGRAM



Absolute Maximum Ratings

VIN Pin to GND Pin Voltage ..... -0.3V to 25V

VOUT Pin to GND Pin Voltage ..... -0.3V to 6.0V

VOUT Pin to VIN Pin Voltage ..... -25V to 0.3V

Package Thermal Resistance (Note 2)

SOT-23-5, SOT-23-3, θ_{JA} ---------- 200 °C /W

Lead Temperature (Soldering, 10 sec.) ---------- 260 °C

Junction Temperature ---------- 150 °C

Storage Temperature Range ---------- -40 °C to 150 °C

ESD Susceptibility

HBM ---------- 2KV

MM ---------- 200V

Recommended Operating Conditions

Supply Input Voltage ----------2.0V to 24V

Junction Temperature Range ---------- –40°C to 125°C

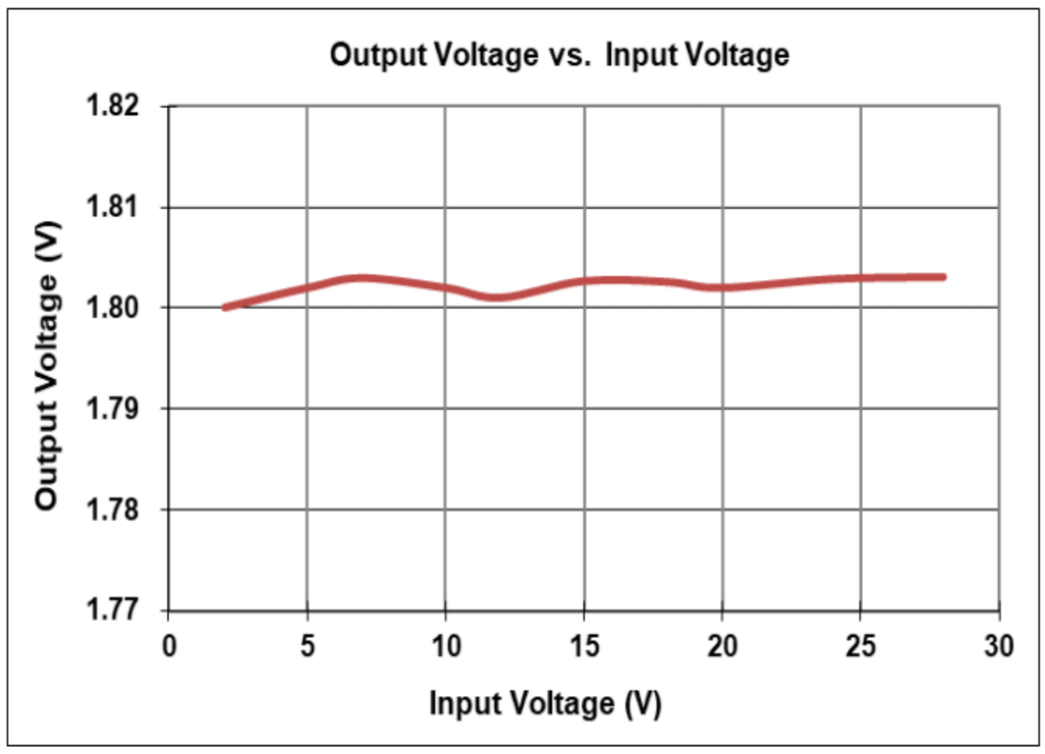
Ambient Temperature Range---------- –40°C to 85°C

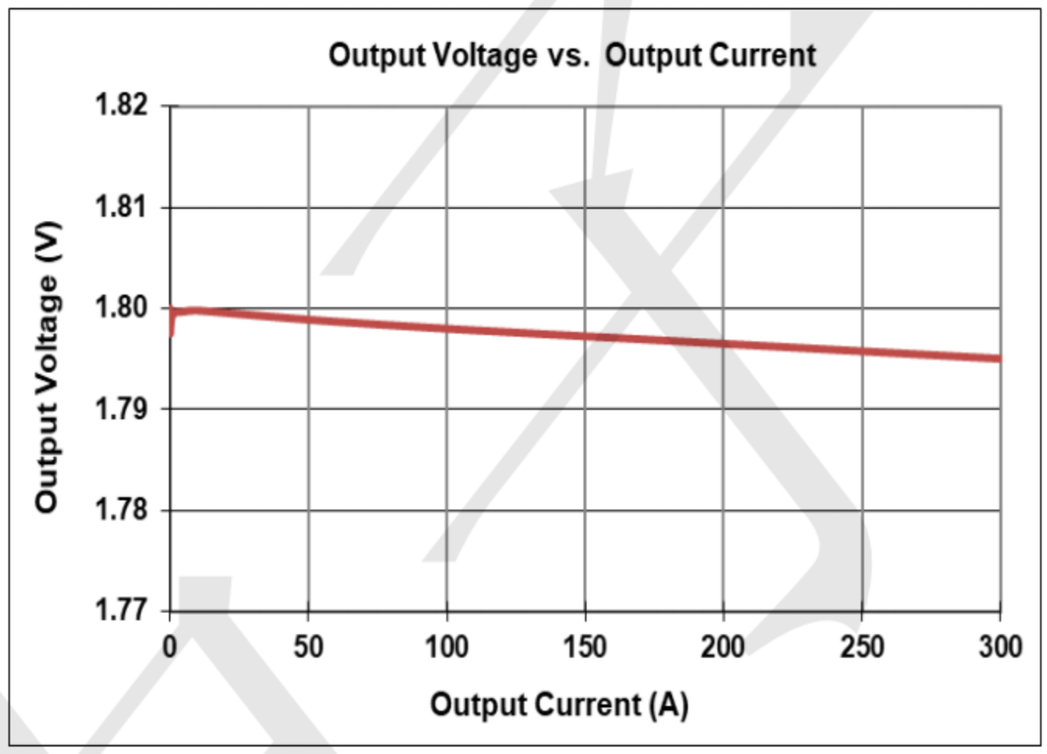
Electrical Characteristics

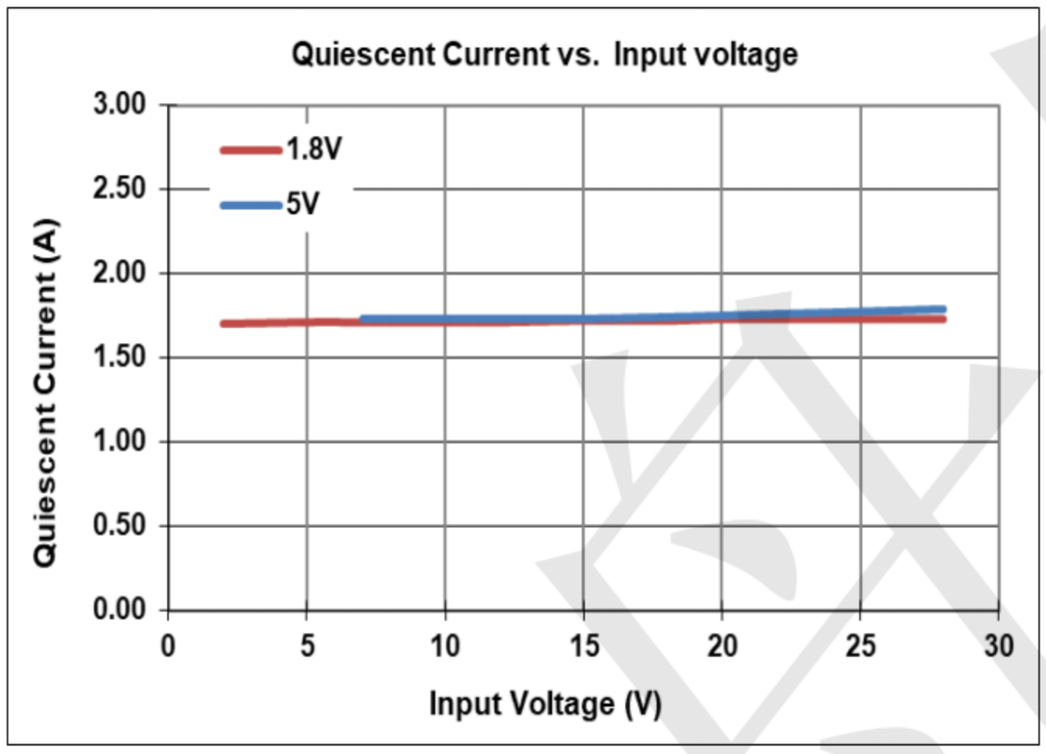
(V_{IN}=15V, V_{EN}=5V, T_A=25°C, unless otherwise specified) (Note 1)

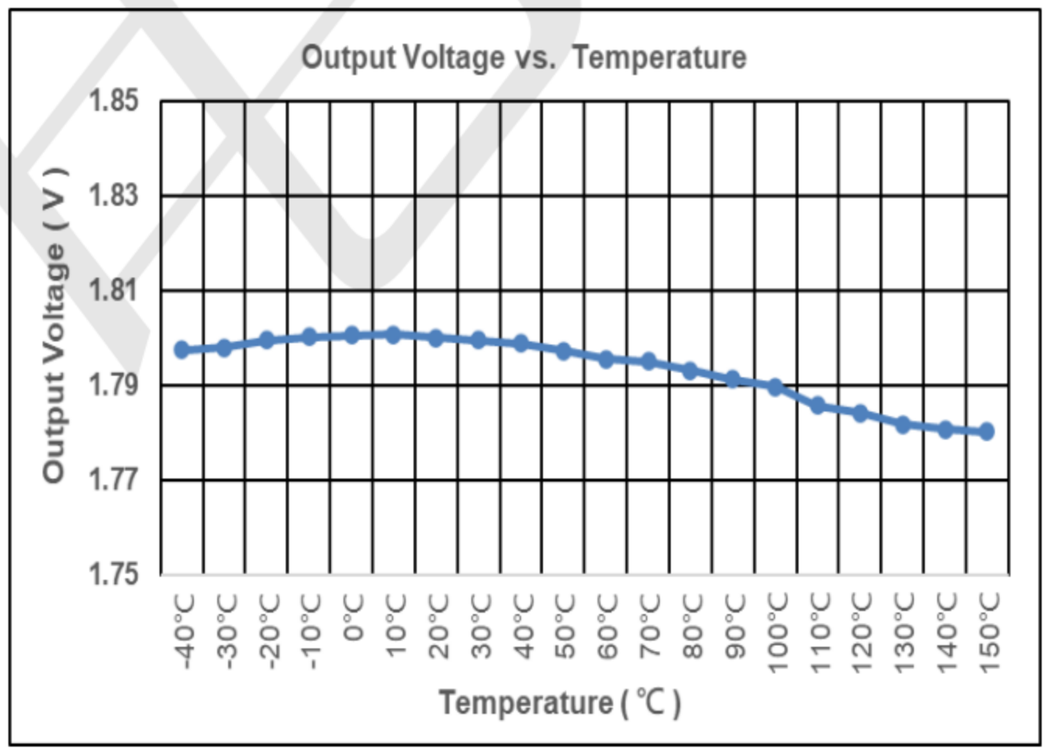
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{IN}		2	--	24	V
DC Output Voltage Accuracy		I_{LOAD} =0.1mA	-2		2	%
Dropout Voltage (I_{LOAD} =100mA)	V_{DROP}	V_{OUT} ≥ 5V	--	0.35		V
	$V_{DROP\_3.3V}$	V_{OUT} = 3.3V		0.42		
	$V_{DROP\_1.8V}$	V_{OUT} = 1.8V		0.5		
Ground Current (I_{LOAD} = 0mA)	I_Q	V_{OUT} ≤ 5V		2.0	4.5	μA
Shutdown Ground Current	I_{SD}	V_{EN} = 0V, V_{OUT} = 0V		0.01	0.5	μA
V_{OUT} Shutdown Leakage Current	I_{LEAK}			0.01	0.5	μA
Enable Threshold Voltage	V_{IH}	EN Rising	1.1			V
	V_{IL}	EN Falling			0.4	
EN Input Current	I_{EN}	V_{EN} = 27V		10	100	nA
Line Regulation	ΔLINE	I_{LOAD} =1mA, 10 ≤V_{IN} ≤ 20V	--	0.3		%
Load Regulation	ΔLOAD	10mA≤ I_{LOAD} ≤ 0.2A		0.3		%
Output Current Limit	I_{LIM}	V_{OUT} =0	300	500		mA
Power Supply Rejection Ratio	PSRR	V_{OUT} =5V, I_{LOAD} =30mA, V_{IN} = 12V, f = 1kHz		70		dB
Thermal Shutdown Temperature	T_{SD}	I_{LOAD} =10mA	--	160	--	°C
Thermal Shutdown Hysteresis	ΔT_{SD}			15		°C

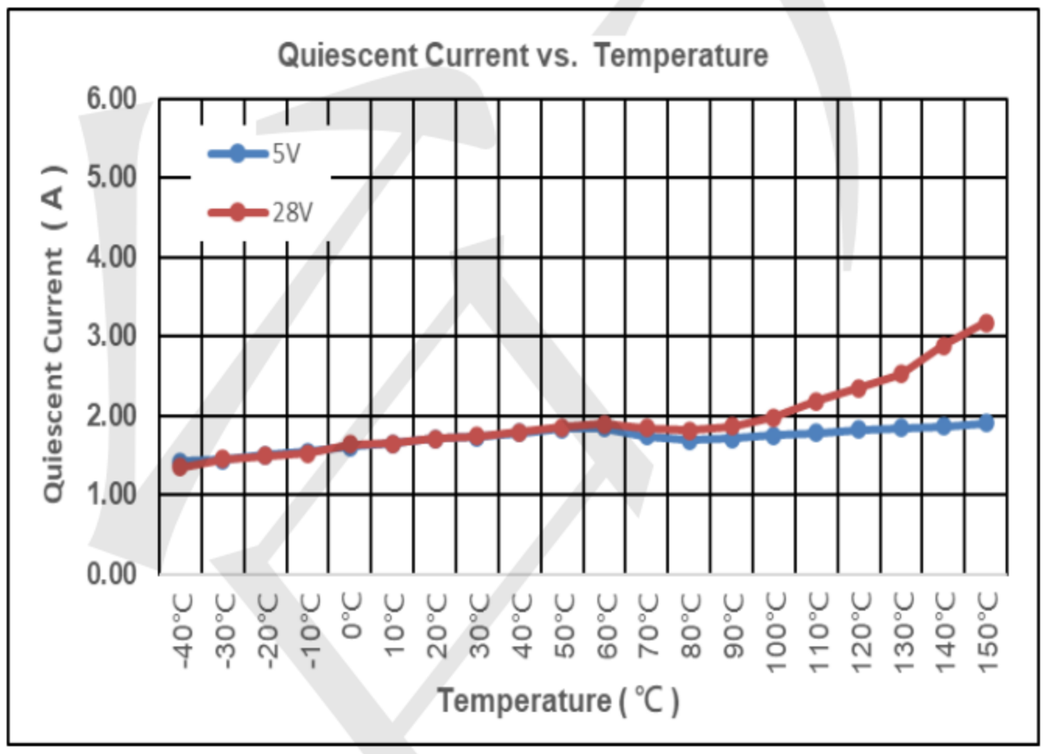
Typical Operating Characteristics

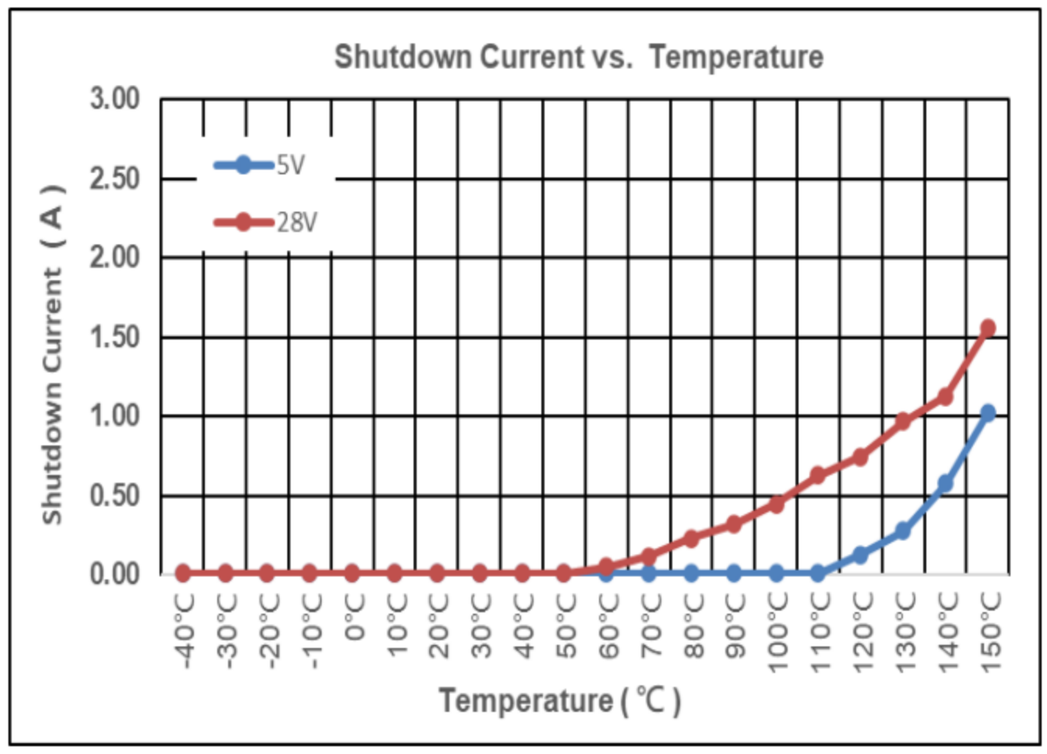


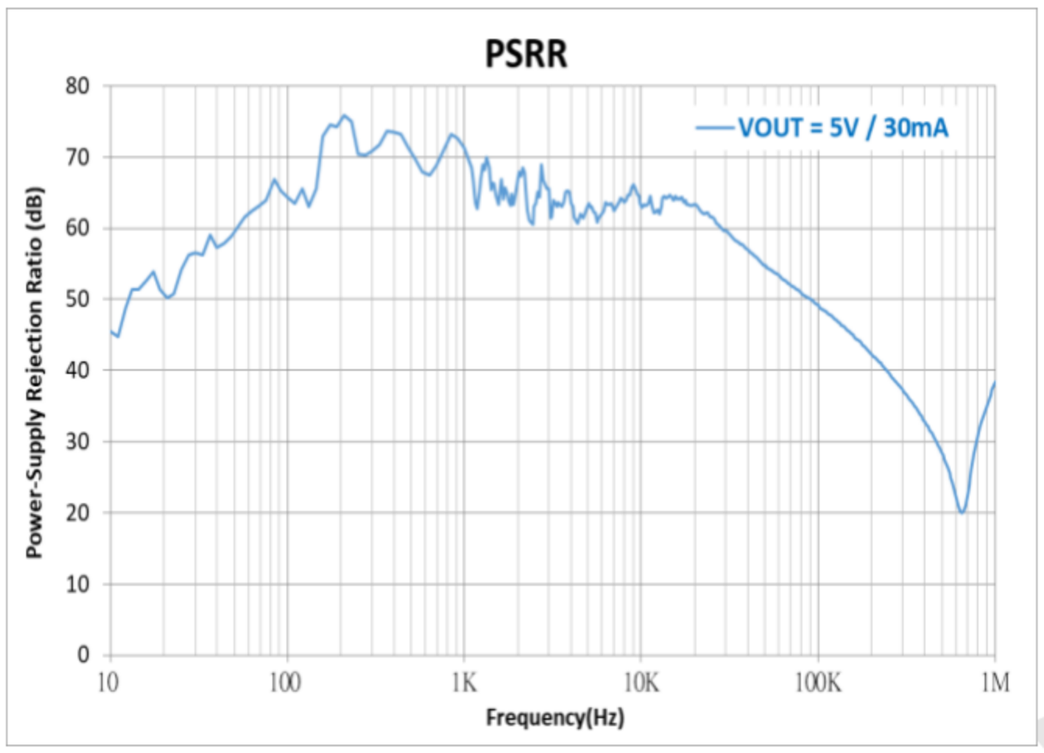











PSRR
VOUT = 5V / 30mA
Power-Supply Rejection Ratio (dB)
80
70
60
50
40
30
20
10
0
10
100
1K
10K
100K
1M
Frequency(Hz)

Typical Application Circuit

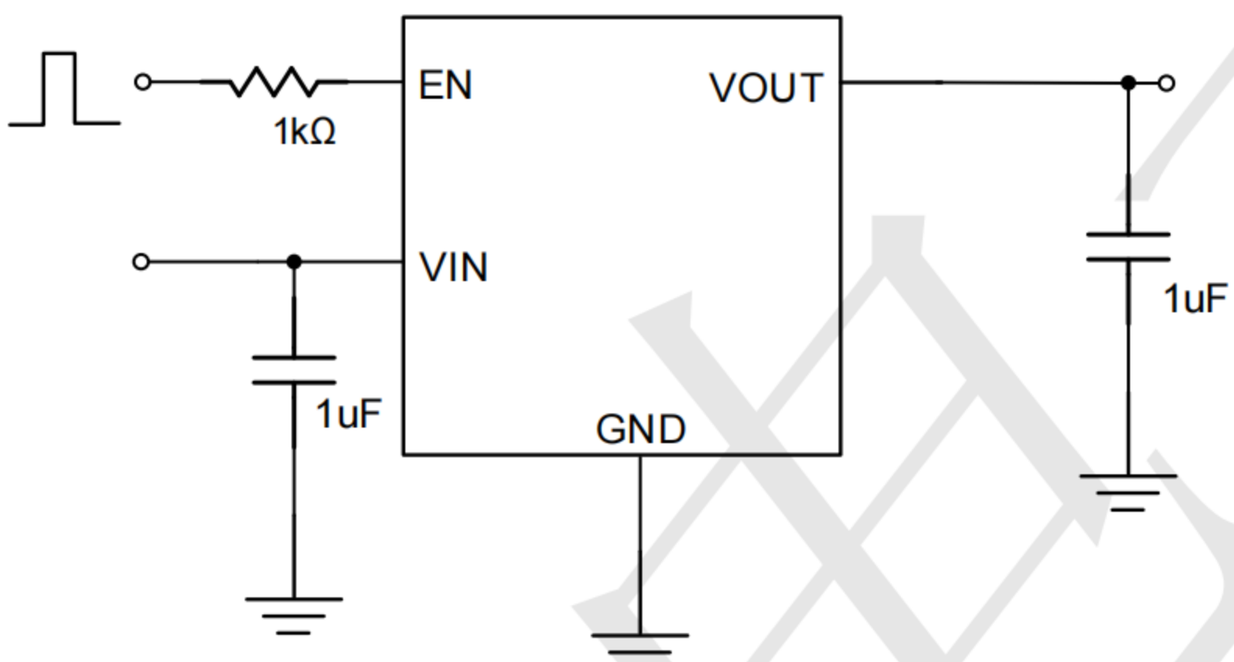


Figure 1: Application circuit of Fixed VOUT LDO with enable function

Package informantion

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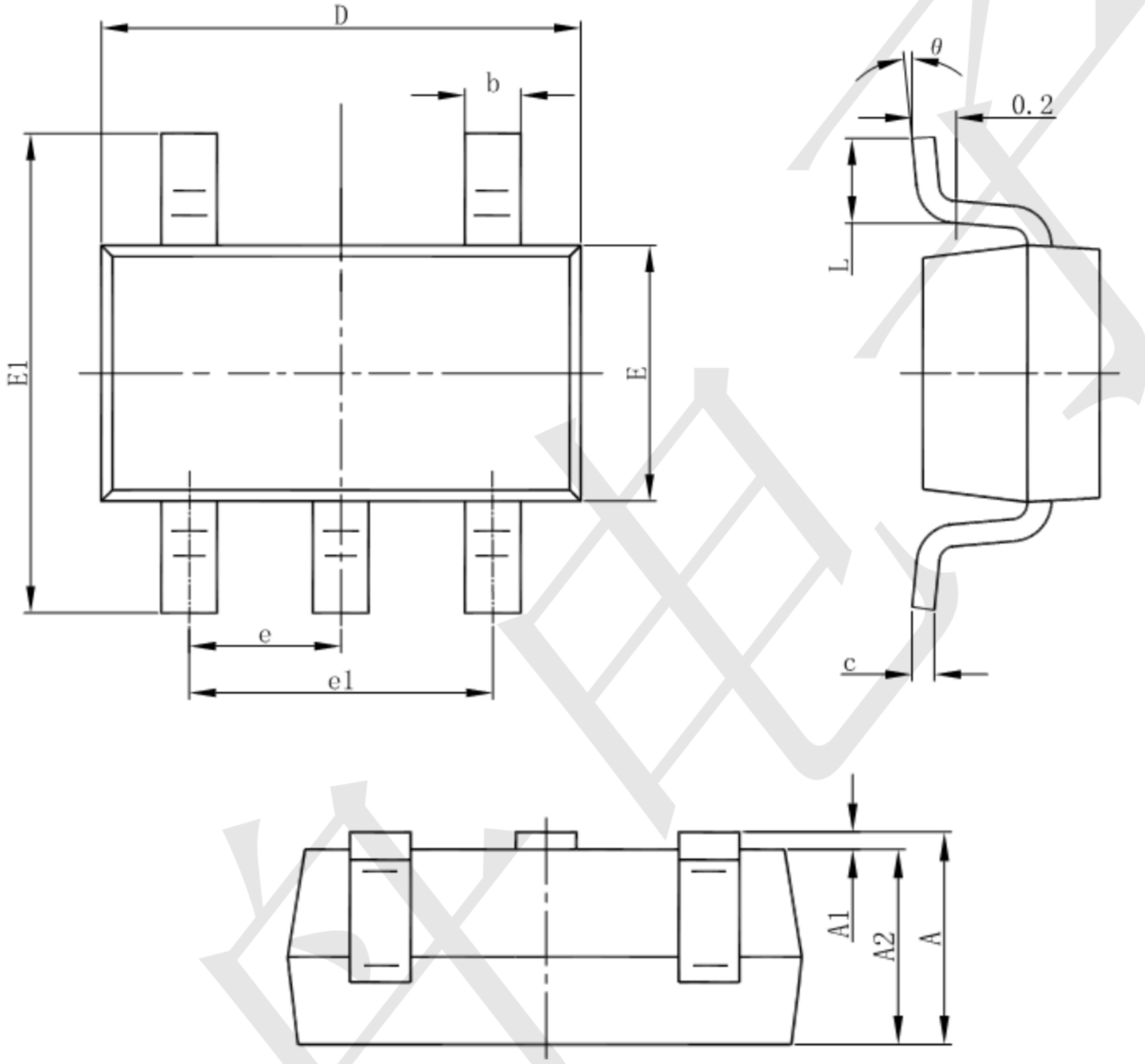

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)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