HY2333
Datasheet
16mA Low-Power Low-Dropout Regulator

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1. Features

The HY2333 operates as a fixed-output, low-dropout regulator with low power consumption. The device has an output tolerance of 2.5% and is capable of delivering 16mA continuous load current. Overcurrent protection is included.

Key Features

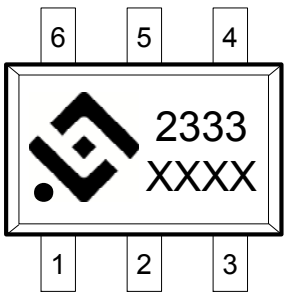
- ±2.5% Output Accuracy
- Low Dropout: 320mV at 16mA Full Load Typically
- Wide Input Voltage Range: 4V to 35V
- Fixed Output Voltage : 3.3V
- Low Quiescent Current: 2.5uA
- Stable with Low-ESR Capacitors
- Overcurrent Protection 125mA
- SOT-23-6 Package

2. Pin Definition

SOT-23-6 PIN DESCRIPTION

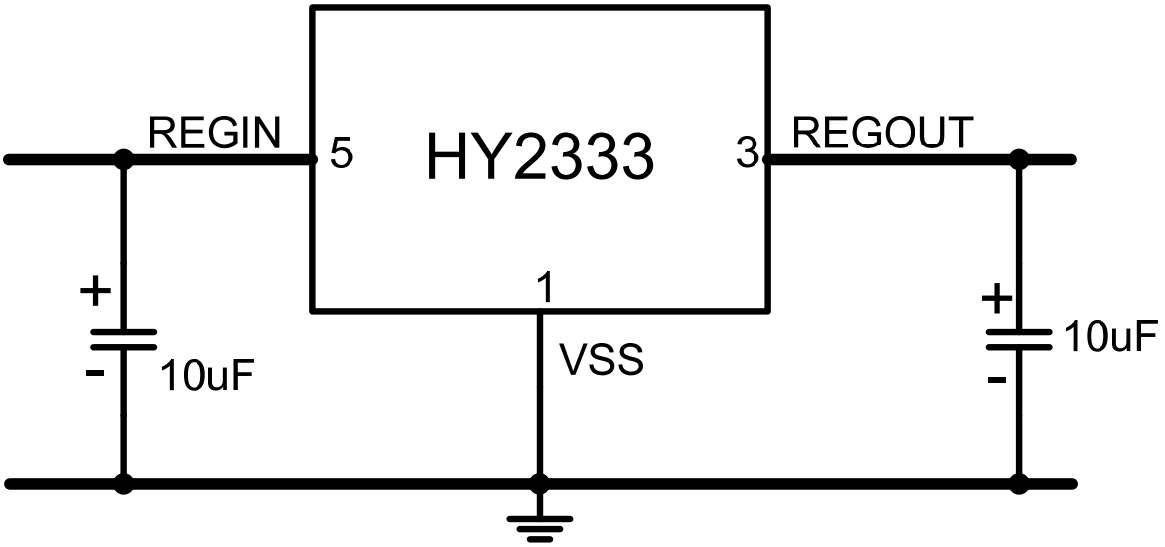
PIN	TYPE(1)	NAME	DESCRIPTION
1	P	VSS	**Device Ground.**
3	P	REGOUT	**Regulated Power Output.** A 3.3V regulated voltage output. Connect a 10uF ceramic capacitor to VSS.
5	P	REGIN	**Power Supply.** Connect to battery positive terminal. Connect a 10uF ceramic capacitor to VSS.
Others	-	NC	**Not connect.**

NOTE: (1) P = POWER CONNECTION



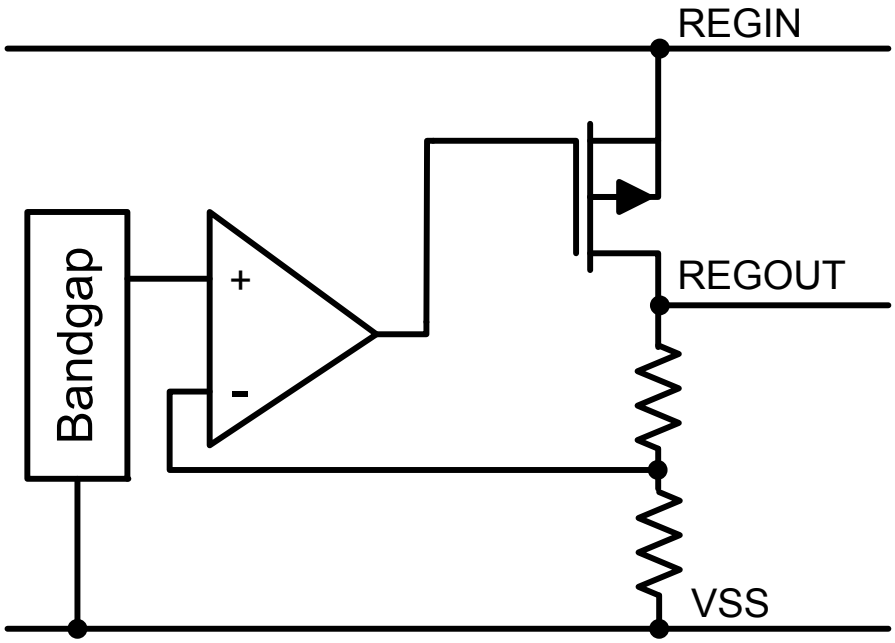
2333： Product Name
XXXX：Date Code

3. Application Circuit



4. Function Outline

The HY2333 operates as a fixed-output, low-dropout regulator with low power consumption. The device has an output tolerance of 2.5% and is capable of delivering 16mA continuous load current. Overcurrent protection is included. The maximum regulator input voltage is 35V.



Block Diagram

5. Electrical Characteristics

ABSOLUTE MAXIMUM RATINGS

Voltage on REGIN pin relative to VSS	–0.4V to 40V
Voltage on REGOUT pin relative to VSS	–0.4V to 7V
Functional Temperature Range	–40°C to +100°C
Storage Temperature Range	–65°C to +150°C
Soldering Temperature (10 sec)	+260°C

** This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operation sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods of time may affect reliability.*

ELECTRCAL CHARACTERISTICS

(V_{REGIN} = 4V to 35V. I_L = 1mA. C_{REGIN} = 10uF. C_{REGOUT} = 10uF. T_A = –40°C to +85°C. Unless otherwise noted, typical values are at T_A = 25°C and V_{REGIN} = 7.2V.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Supply Voltage	V_{REGIN}		4		35	V
Regulator Output Voltage	V_{REG}	I_L ≤ 3mA.	3.3V – 1.5%		3.3V+ 1.5%	V
		4V ≤ V_{REGIN} ≤ 20V. 3mA ≤ I_{REGOUT} ≤ 16mA.	3.3V – 2.5%		3.3V+ 2.5%	
		4V ≤ V_{REGIN} ≤ 20V. 3mA ≤ I_{REGOUT} ≤ 16mA. T_A = –40°C to +85°C.	3.3V – 3.5%		3.3V+ 3.5%	
Regulator Dropout Voltage	V_{DO}	V_{REGOUT} = 3.3V. I_{REGOUT} ≤ 16mA. T_A = –40°C to +85°C.		320	500	mV
		V_{REGOUT} = 3.3V. I_{REGOUT} ≤ 3mA. T_A = –40°C to +85°C.		65	100	
Regulator Output Change with Temperature	$\Delta V_{REG,TEM}$ P	I_{REGOUT} = 16mA. T_A = –40°C to +85°C.		1		%

Line Regulation	$\Delta V_{REG,LIN}$ E	4V ≤ V_{REGIN} ≤ 20V. I_{REGOUT} = 16mA.		11	25	mV
Load Regulation	$\Delta V_{REG,LOA}$ D	V_{REGIN} = 9.0V. 0.2mA ≤ I_{REGOUT} ≤ 3mA.		20	40	mV
		V_{REGIN} = 9.0V. 3mA ≤ I_{REGOUT} ≤ 16mA.		20	40	
Short Circuit Current Limit	I_{SHORT}	V_{REGOUT} = 0V. T_A = –40°C to +85°C.		125		mA
Supply Current	I_{CC}			2.5	4	μA

6. Ordering Information

■ Product name definition

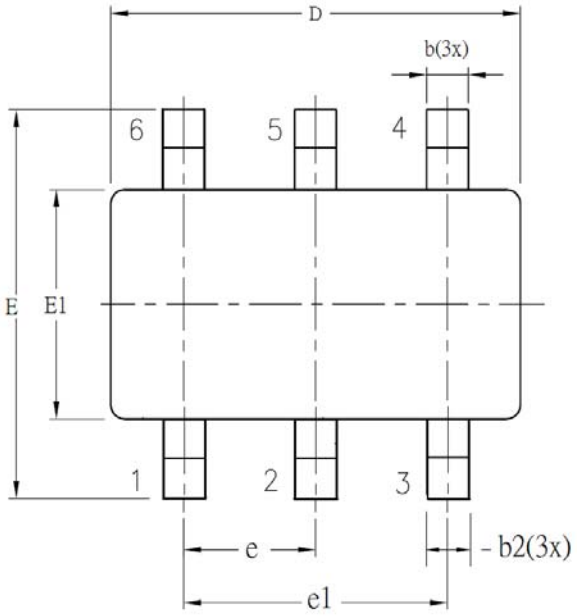
HY2333—B

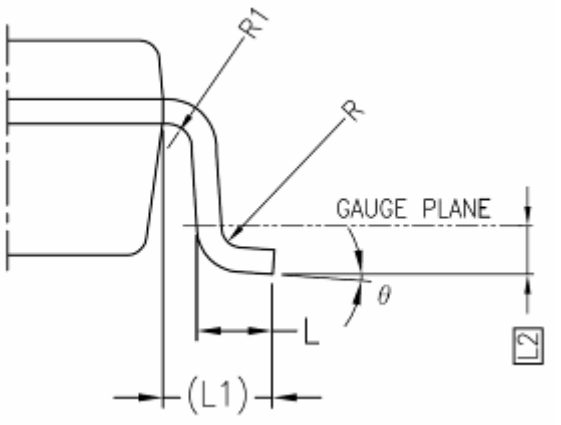
Package type
B: SOT-23-6

7. Package Information

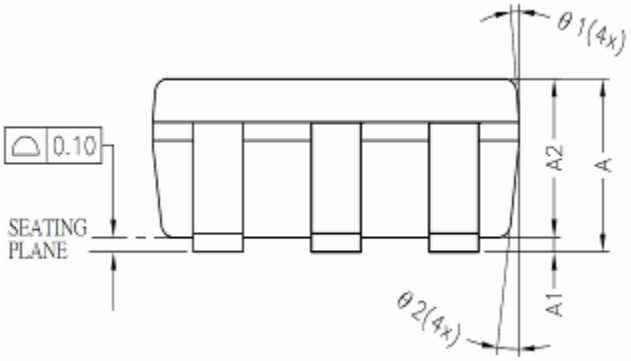
7.1. SOT-23-6 Outline

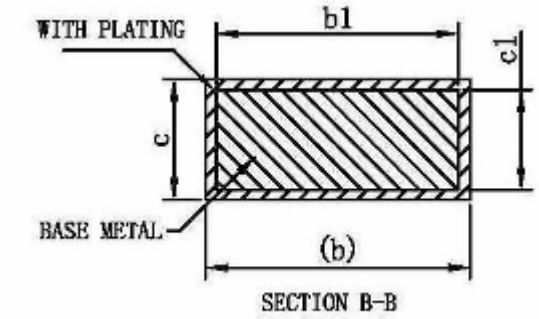
Note: All dimensions are in millimeters.





SYMBOL	ALL DIMENSIONS IN MILLIMETERS		
	MINIMUM	NOMINAL	MAXIMUM
A	-	1.30	1.40
A1	0	-	0.15
A2	0.90	1.20	1.30
b	0.30	-	0.50
b1	0.30	0.40	0.45
b2	0.30	0.40	0.50
c	0.08	-	0.22
c1	0.08	0.13	0.20
D	2.90 BSC		
E	2.80 BSC		
E1	1.60 BSC		
e	0.95 BSC		
e1	1.90 BSC		
L	0.30	0.45	0.60
L1	0.60 REF		
L2	0.25 BSC		
R	0.10	-	-
R1	0.10	-	0.25
θ	0°	4°	8°
θ1	5°	-	15°
θ2	5°	-	15°





8. Revision Record

Major differences are stated thereinafter:

Version	Page	Revision Summary
01	All	New version
02	All	Key Features upgrade.