

500mA Low Noise, High PSRR, Fast Transient Response LDO with Adjustable Output Voltage

DESCRIPTION

HM6215 is a 500mA low noise and fast transient response linear regulator with adjustable output voltage and ultra-low dropout voltage. Its output voltage is programmed by a resistor divider, and can be as low as 0.8V, which satisfies the most advanced ICs which may require supply voltage to be 0.9V – 1.2V.

HM6215 consists of a precise voltage reference, an error amplifier, a compensation network and a low ON-resistance power P-MOSFET. It also integrates many protection circuitry, like current limit and over-temperature protection module.

HM6215 is in a tiny SOT23-5 package.

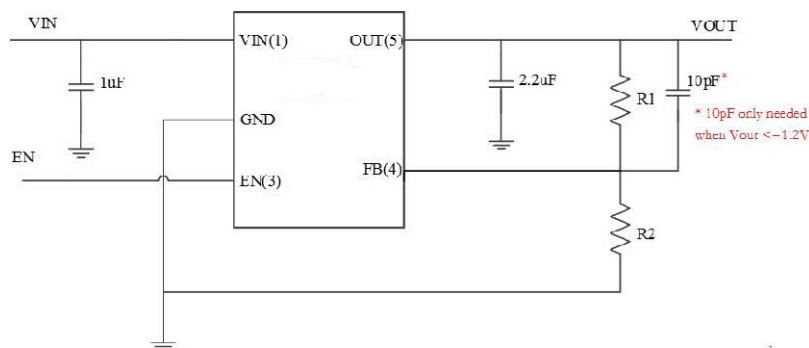
FEATURES

- 500mA output current
- Adjustable output voltage
- Minimum output voltage as low as 0.8V
- Ultra low dropout voltage 370mV @ 500mA
- Low quiescent current 40uA
- <1uA shutdown current
- Short-circuit protection
- Over-temperature protection

APPLICATIONS

- Cellphones
- Camera modules
- Medical Instruments
- Battery powered devices

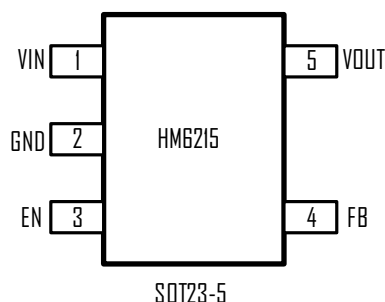
TYPICAL APPLICATION



ORDERING INFORMATION

PART	PACKAGE PIN	TOP MARK	Top Mark Explanation
HM6215	SOT23-5	FAYW	FA = Product Code, YW = Date Code

PIN CONFIGURATION



ABSOLUTE MAXIMUM RATINGS

(Note: Exceeding these limits may damage the device. Exposure to absolute maximum rating conditions for long periods may affect device reliability.)

VIN Voltage	-0.3V to 8V
All Other Pin Voltage	VIN-0.3V to VIN+0.3
VIN to GND current	Internally limited
Operating Temperature Range	-40°C to 85°C
Storage Temperature Range	-55°C to 150°C
Thermal Resistance	θ_{JA}
SOT23-5	190 °C/W

ELECTRICAL CHARACTERISTICS

(VIN = 5V, unless otherwise specified. Typical values are at TA = 25°C.)

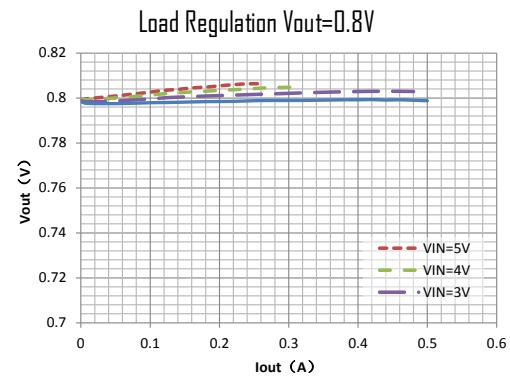
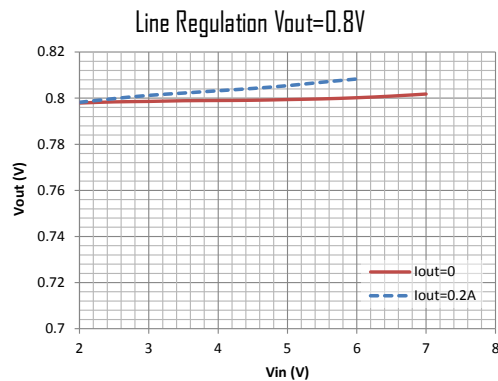
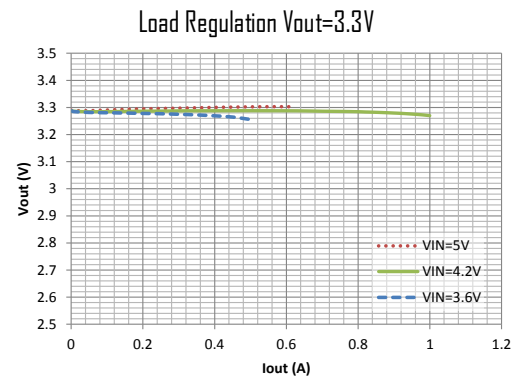
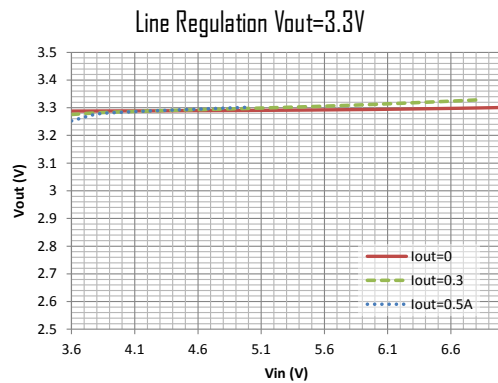
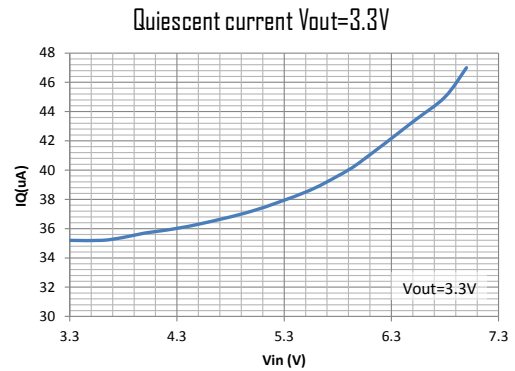
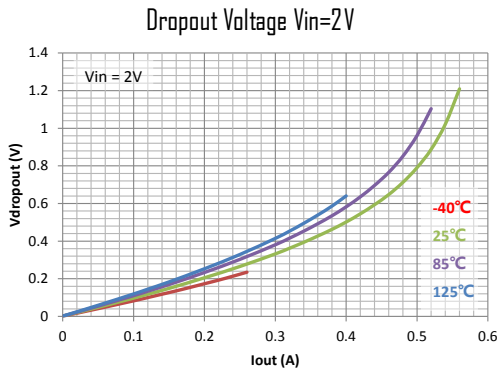
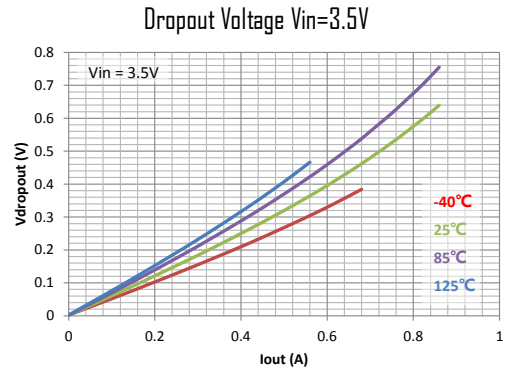
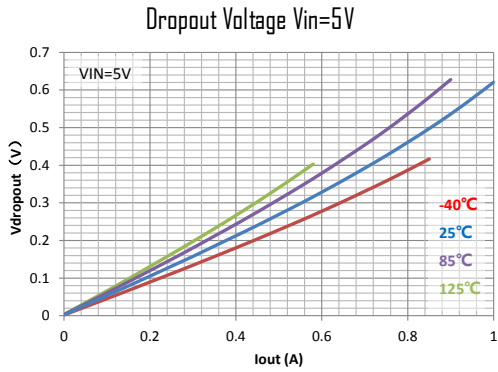
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT Range		2.5		6.0	V
Quiescent Current (Iq)	Vfb=1V		40		μA
Feedback Voltage (Vfb)		0.775	0.8	0.825	mV
Dropout Voltage (Vdrop)	Iout=100mA		75		mV
	Iout=300mA		225		mV
	Iout=500mA		370		mV
Line Regulation	2.5V < Vin < 5.5		0.075		%/V
Load Regulation	0mA < Iout < 500mA		0.6		%/A
Maximum Output Current (Iout_Max)	Vin - Vout = 1V		0.9	1.05	A
Current Limit			1.05		A
EN logic "high" Voltage	Voltage to turn on the chip	1.5			V
EN logic "low" Voltage	Voltage to turn off the chip			0.5	V
Thermal Protection			150		°C

PIN DESCRIPTION

PIN #	NAME	DESCRIPTION
1	VIN	Input voltage pin, connect a 1μF capacitor to GND
2	GND	Ground
3	EN	Enable pin. Pull this pin "high" to turn on the chip and "low" to turn off
4	FB	Feedback pin. Feedback voltage is set to be 0.8V. Output voltage is programmed by a resistor divider from Vout thru FB to GND, and by the equation $0.8V \times \frac{R1+R2}{R2} = Vout$
5	VOUT	Output voltage pin, connect a 2.2μF capacitor to GND

TYPICAL CHARACTERISTICS

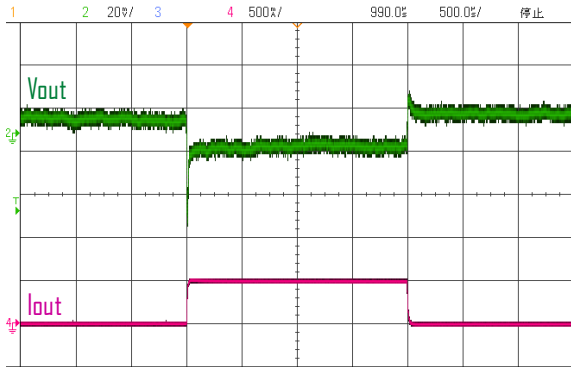
(Typical values are at $T_A = 25^\circ\text{C}$ unless otherwise specified.)



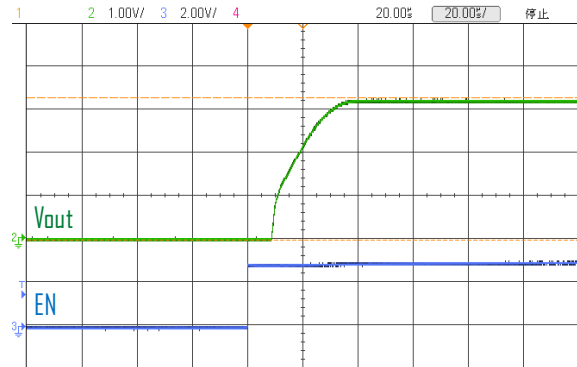
TYPICAL CHARACTERISTICS waveforms

(Typical values are at $T_A = 25^\circ\text{C}$ unless otherwise specified.)

Load Transient Response at $I_{out} = 500\text{mA}$, $V_{out} = 3.3\text{V}$



Startup Waveform at $I_{out} = 200\text{mA}$, $V_{out} = 3.3\text{V}$



PACKAGE OUTLINE

