FUDAN MICROELECTRONICS

复旦微电子

FM4213 Ignition Controller Of Motorcycle

Specification

May. 2008

Product Overview

Description

FM4213 is an application specific integrated circuit for electronic ignition system of 125ml cylinder motorcycle. It's controlled by the pulses generated by the magnetic sensor, outputs pulses which phases are changed with the rotation speed, trig the SCR to generate ignition sparks.

Features

- **Power supply by magnetoelectric motor and clamping at 9.2V**
- **Less external components and wide applicability**
- **Low static current, typical is 5mA**
- **DIP14 package**
- **Compatible with MN4213**
- **Aim at the disfigurement of MN4213 re-designing, with high reliability and self-independent property right**
- **High quality and stability for using 3μm Bipolar process**

Pin Description

Pin	Symbol	Pin	Symbol
1	Vcc	10	OUT
2, 7	IN	11	Vcharge1
3, 4, 5, 6	GND	12	ADV curve
8	V_{REF}	13	RPM curve
9	I_{REF}	14	Vcharge2

Table 1-1 FM4213 Pin Description

Electrical Characteristics

DC Characteristics

（T_a = +25°C; I_{DC} = 5mA)

Symbol	Test Conditions	Value			Unit
		Min	Typ	Max	
V_{cc}	I_2, I_7 = 0	9.0	9.2	9.5	V
R_d	I_2, I_7 = 0	-	-	30	Ω
V_{OL} (Pin10)	I_2, I_7 = 0	-	0.0	0.1	V
V_{OH} (Pin10)	I_2 = 100μA, I_7 = -100μA	1.6	1.8	-	V
V_{OL} (Pin12)	I_2 = 0, I_7 = -100μA	-	-	0.1	V
V_{OH} (Pin12)	I_2 = 100μA, I_7 = 0	4.0	4.4	4.8	V
V_{OL} (Pin13)	I_2 = 0, I_7 = -100μA	-	0.1	0.4	V
V_{OH} (Pin13)	I_2 = 0, I_7 = 0	8.5	9.0	-	V
I_{13}	I_2 = 0, I_7 = -100μA	-	-	100	μA

Table 2-1 FM4213 DC Characteristics

Transient Characteristics

(T_a = +25°C)

Symbol	Test Conditions	Value			Unit
		Min	Typ	Max	
V (Pin10)	t = 2ms T = 48ms	2	-	-	V
V (Pin12)		-	0.9	1.5	V
T_{HL} (Pin12)		-	50	100	μS
V_{LH} (Pin12)		4.2	4.4	4.6	V
V_{HL} (Pin12)		6.0	6.4	6.6	V
T_{LH} (Pin12)		1.95	2.0	2.2	MS

Table 2-2 FM4213 Transient Characteristics

Design Example

Block Diagram

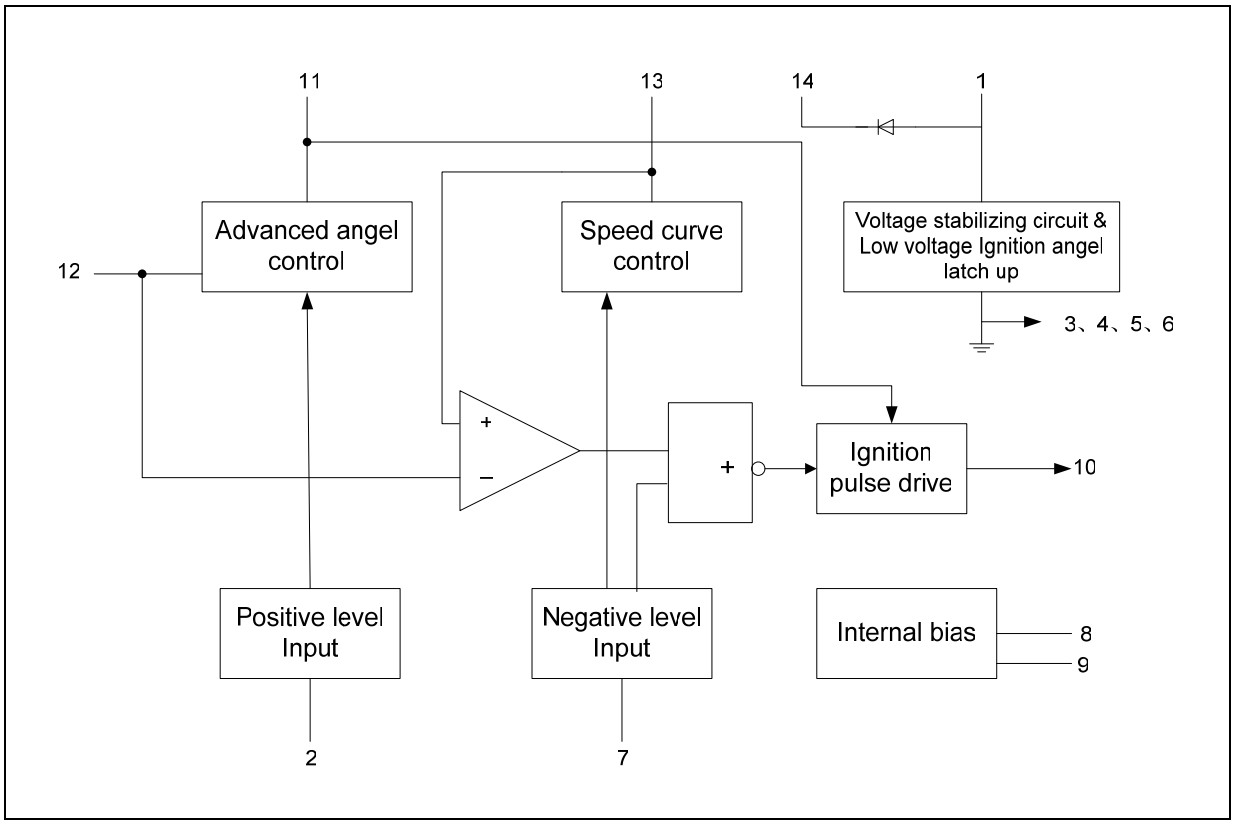

Figure 3-1 FM4213 Block Diagram

Application Circuit

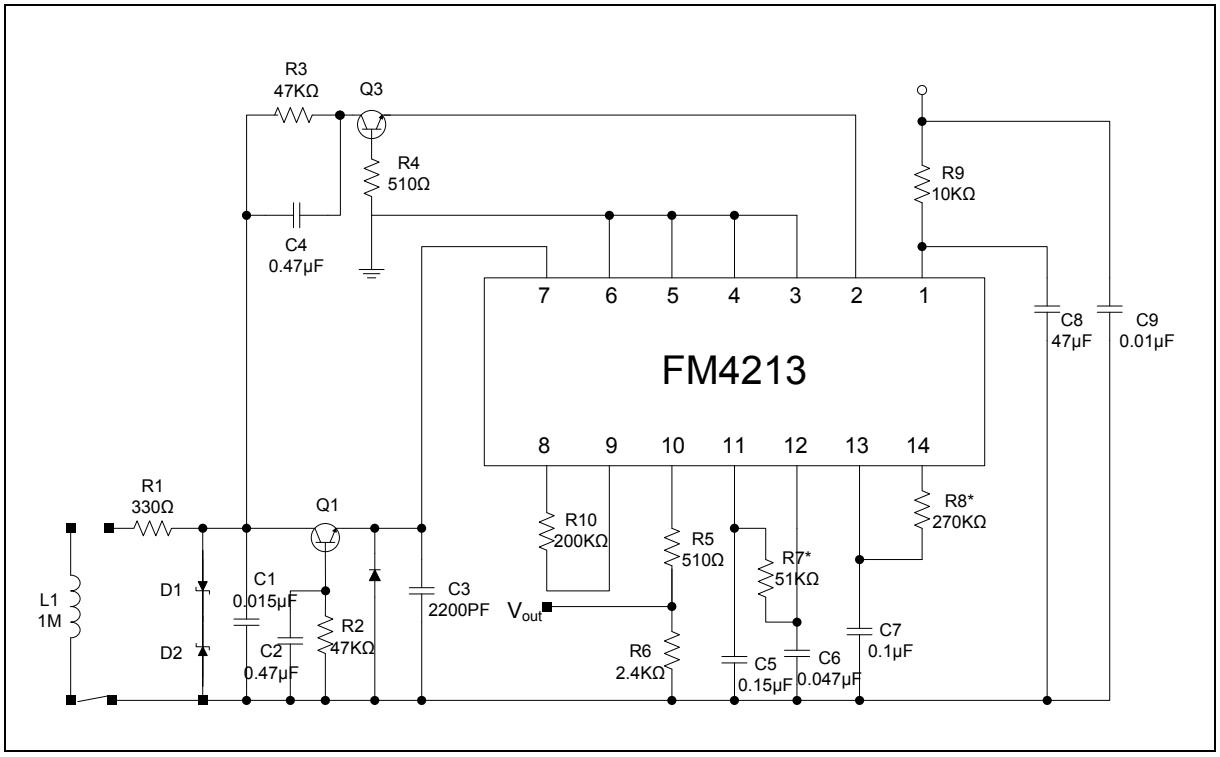

Figure 3-2 FM4213 Application Circuit

Revision History

Version	Publication date	Pages	Paragraph or Illustration	Revise Description
1.0	Mar. 2001	2		Initial Release.
2.0	Oct. 2007	8		Updated Format.
2.1	May. 2008	8	Sales and service	Updated the address of HK office.

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