

FM484 Magnetic Pickup Ignition Controller

Specification		

上海复旦微电子股份有限公司

Specification

May. 2008



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Product Overview

Description

The FM484 is an integrated circuit designed for use with an NPN darlington in breakerless ignition systems with magnetic pickup sensors and high energy ignition coils. For the special design which has two input pins from the pickup, it can be used with a wide variety of magnetic sensors. The device drives an NPN external darlington to control the coil current providing the required stored energy with low dissipation. This circuit has many advantages: low power dissipation, stable, high ignition energy, self-protection, widely application conditions, long using life, etc. It's compatible for overseas products of the same class.

Features

- ♦ Direct driving of the external darlington
- ♦ Operates with a wide range of magnetic pickup types
- ♦ Charging angle (dwell) control
- ◆ Coil current peak limitation
- ◆ Continuous coil current protection
- **♦** Tachometer signal output
- External darlington overvoltage protection
- **♦** Load dump and reverse battery protection
- ♦ Possibility of spark point delaying antiknock system
- ♦ High quality and stability for using advanced 3µm bipolar process

Pin Functions

Pin	Functions	Pin	Functions
1	Current Sensing	9	Power-on Input
2	Pickup Input	10 Signal GND	
3	Permanent Conduct	11	Power Supply
3	Protection Timer	11	Fower Suppry
4	Permanent Conduct	12	Dump Protection
4	Protection Inhibit	12	
5	RPM Output	13	GND
6	Dwell Time Adjust	14 Driver Collector Input	
7	Dwell Timer	15 Overvoltage Limit	
8	Zero Crossing Input	16	Driving Stage Output

Table 1-1 FM484 Pin Functions



Characteristics

Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_R	Reverse Battery Voltage	-14	V
T _{stg}	Storage Temperature Range	-55~+150	°C
P _{tot}	Power Dissipation (T _{amb} =+90°C)	0.75	W

Table 2-1 FM484 Absolute Maximum Ratings

Electrical Characteristics

Symbol	Parameter	Test Conditions	Min	Тур	Max	Unit
Vs	Operating Supply Voltage	-	6	-	28	V
V _{IS}	Input Stage Voltage (pin 2 with 10ΚΩ resistor)	-	160	200	240	mV
V _{ZC}	Zero Crossing Thresh. Voltage (pin 8)	-	3	20	60	mV
V	Series Darlington Driver	I14=50mA	-	-	0.6	V
V _{CEsat}	Saturation Voltage (V _{pin 14-16})	I14=180mA	-	0.4	1.0	V
I _{7C}	Cdwell Charge Current	At Low RPM Vin=0.5V	0.7	-	3	μA
I _{7D}	Cdwell Discharge Current	At Low RPM Vin=0.5V	7	-	30	μA
I _{7C}	Cdwell Charge Current	At High RPM Vin=9V	8	-	33	μA
I _{7D}	Cdwell Discharge Current	At High RPM Vin=9V	13	-	44	μA
V _{CH}	Tachometer Signal Output Low Voltage. (pin5)	ON: I _{sink} =0.5mA	-	-	0.7	V
I _{CH}	Output Leakage (pin5)	OFF: V _{pin5} =5V	-	-	10	μA
\/	External Darlington Overvoltage	T _{amb} =+25°C	25	-	35	V
V _{OVZ}	Protection Zener Voltage	I _{pin15} =5~15mA				V
Vz	Zener Volt. (pin 11)	I _{pin11} =140mA	6.5	-	8.8	V
V _{pin3}	Threshold Voltage	T _{amb} =+25°C	0.84		4	V
l ₃	Output Current		-	-	3	μA

Table 2-2 FM484 Electrical Characteristics



Application Circuit

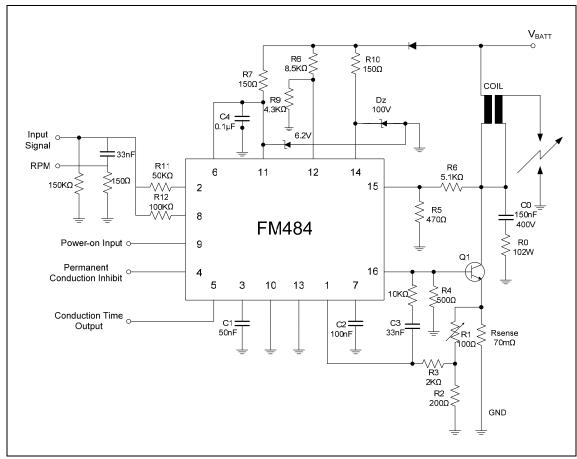


Figure 3-1 FM484 Application Circuit



Revision History

Version	Publication date	Pages	Paragraph or Illustration	Revise Description
1.0	Mar. 2001	2		Initial Release.
2.0	Oct. 2007	7		Updated Format.
2.1	May. 2008	7	Sales and service	Updated the address of HK office.



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