



FM2807 Low Power Ground Fault Interrupter

Specification

May. 2008

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Product Overview

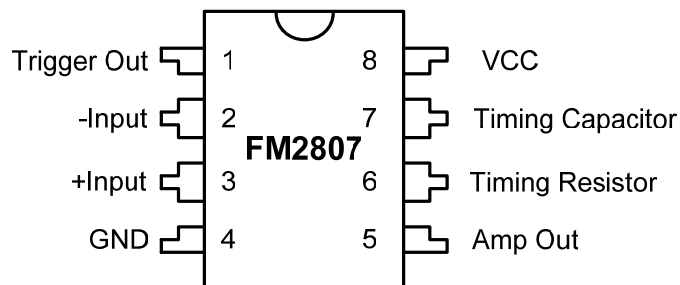
Introduction

The FM2807 is a low power controller for AC outlet ground fault interrupters. Contained internally are a zener shunt regulator, an op amp, and an SCR driver. With the addition of two sense transforms, a bridge rectifier, an SCR, and a few additional components, the FM2807 will detect and protect against both hot wire to ground and neutral wire to ground faults.

Features

- Full Advantage of The UL943
- Built-In Voltage Regulator
- SCR Output Current Pulse to Trigger SCR
- Ground Neutral Fault Detection
- Wide Operating Temperature Range
- Excellent ESD Characteristic
- Ideal for 120V System

Pin Assignments



Pin Functions

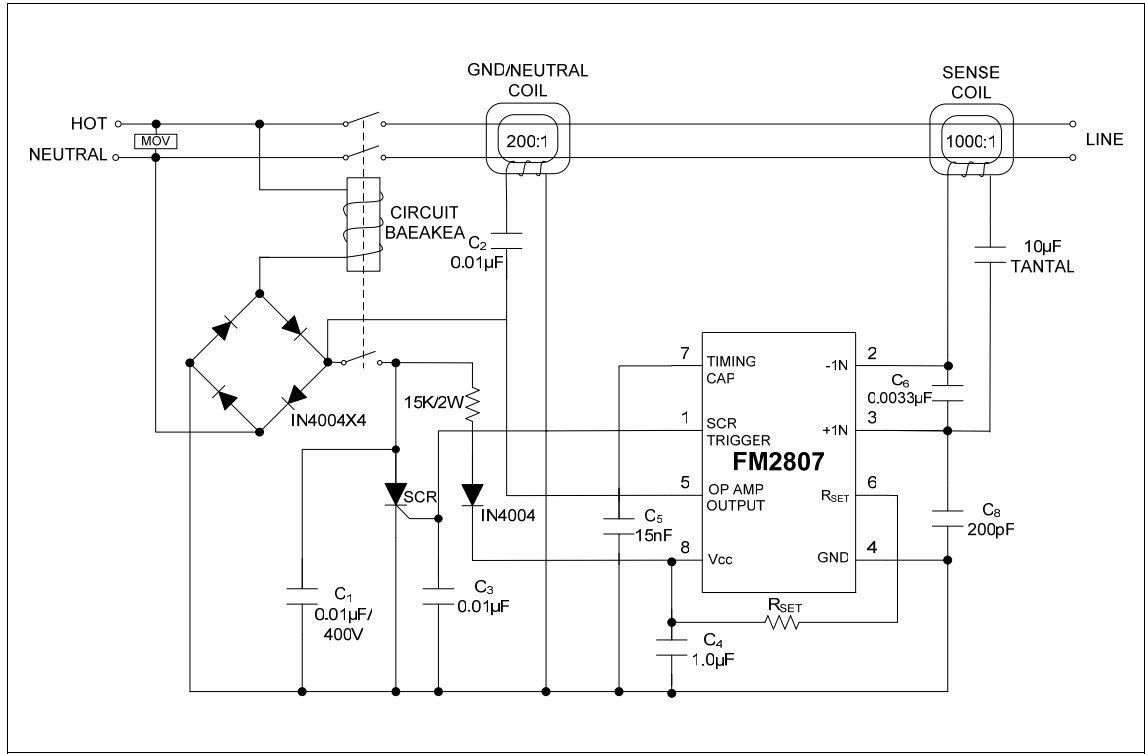
Pin	Symbol	Function
1	TRIGGER OUT	SCR Trigger
2	-INPUT	Negative of Sensor Current
3	+INPUT	Positive of Sensor Current
4	GND	Ground
5	AMP OUT	Operational Amplifier Output
6	TIMING RESISTOR	Timing Resistor
7	TIMING CAPACITOR	Timing Capacitor
8	VCC	Neutral

Electrical Characteristics

$I_{CC} = 5\text{mA}$; $T_a = 25^\circ\text{C}$

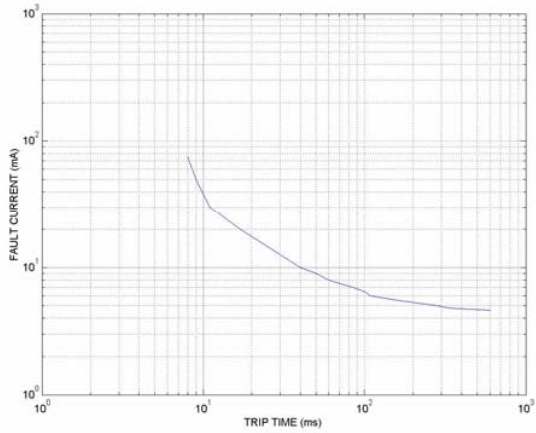
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{REG}	Shunt Regulator Voltage	Pin 8, S1:2, S2 : OFF	23	26	29	V
V_{REF}	Amp Reference Voltage	Pin 3, S1:2, S2 : OFF	9.5	10.5	11.5	V
V_{OH}	Amp High Output Voltage	Pin 5, S1:3, S2 : ON, Sig: 800Hz, 3.0VP-P, Sinewave	17	19	21	V
V_{OL}	Amp Low Output Voltage	Pin 5, S1:3, S2 : ON, Sig: 800Hz, 3.0VP-P, Sinewave	1.5	2.5	3.5	V
I_{SEN}	Amp Sensitivity Current	Pin 2, S1:3, S2 : ON, Sig: 800Hz, 1.0 VP-P ~ 2.5VP-P, Sinewave	3.5	5	6.5	μA
V_{ON}	Latch On Voltage	Pin 7, S1:3, S2 : ON, Sig: 800Hz, 3.0VP-P, Sinewave	16.5	17.5	19.5	V
I_{TR}	SCR Trigger Current	Pin 1, S1:3, S2 : ON, Sig: 800Hz, 3.0VP-P, Sinewave	0.5	1	2.0	mA
V_{s1}	Output Low Voltage	Pin 1, S1:2, S2 : OFF		100	240	mV
Z_O	Output Impedance	Pin 1, S1:2, S2 : OFF		100	250	W
I_{SINK}	Output Sink Current	Pin 1, S1:2, S2 : OFF	2.0	6.0		mA

Application Circuit

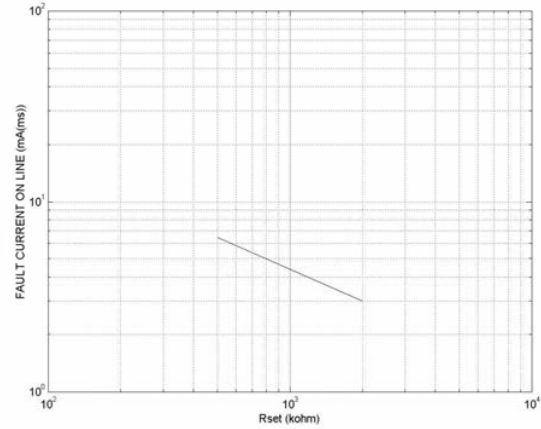


Typical Performance Characteristics

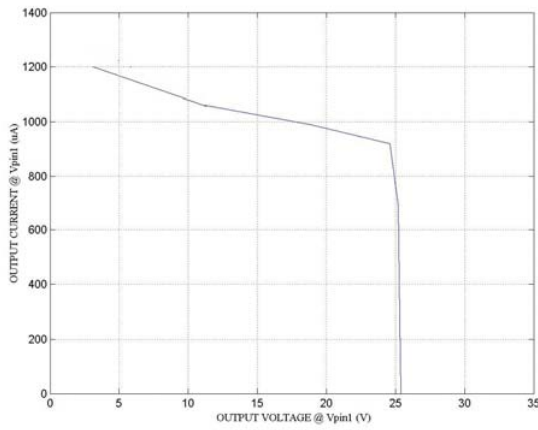
Average Trip Time vs Fault Current



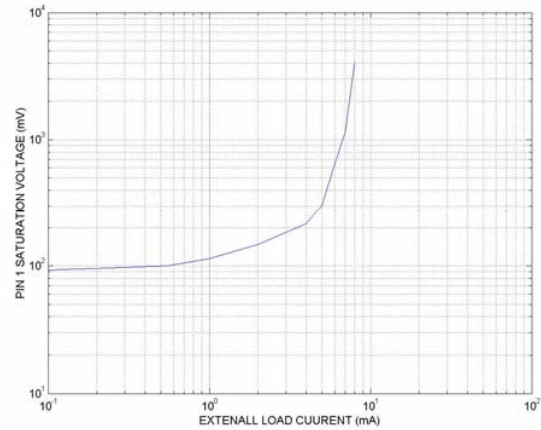
Normal Fault Current Threshold vs Rset



Output Drive Current vs Output Voltage



Pin 1 Saturation Voltage vs External Load Current, IL



Revision History

Version	Publication date	Pages	Paragraph or Illustration	Revise Description
1.0	Oct. 2007	8		Initial Release.
1.1	May. 2008	8	Sales and service	Updated the address of HK office.

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