



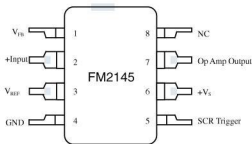
Low Power Ground Fault Interrupter FM2145

The FM2145 is a low power controller for AC outlet ground fault interrupters. Contained internally are a 26V zener shunt regulator, an op amp, and an SCR driver. With the addition of two sense transformers, a bridge rectifier, an SCR, a relay, and a few additional components, the FM2145 will detect and protect against both hot wire to ground and neutral wire to ground faults.

FEATURES

- ◆ No potentiometer required
- ◆ Direct interface to SCR
- ◆ Supply voltage derived from AC line -26V shunt
- ◆ Adjustable sensitivity
- ◆ Grounded neutral fault detection
- ◆ Meets U.L. 943 standards
- ◆ 450 μ A quiescent current
- ◆ Ideal for 120V or 220V systems

PIN ASSIGNMENTS



PIN FUNCTIONS

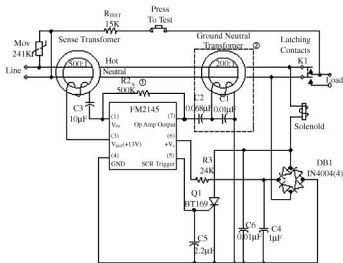
Pin	Symbol	Functions
1	V_{FB}	Operational Amplifier-input
2	+Input	Operational Amplifier+input
3	V_{REF}	Reference Voltage
4	GND	Ground
5	SCR Trigger	SCR trigger
6	$+V_s$	Neutral
7	Op Amp Output	Operational Amplifier output
8	NC	Not connected

ELECTRICAL CHARACTERISTICS

 $I_C = 1.5 \text{ mA}$ and $T_A = +25^\circ \text{ C}$

Parameter	Test conditions	Min	Typ	Max	Unit
Detector Reference Voltage	Pin 7 to Pin 3	6.8	7.2	8.1	$\pm$ V
Shunt Regulator					
Zener Voltage(+V _s)	Pin 6 to Pin4	25	26	29.2	V
Reference Voltage(V _{REF})	Pin 3 to Pin4	12.5	13	14.6	V
Quiescent Current(I _s)	+V _{SW} =24V		450	750	μ A
Operational Amplifier					
Offset Voltage	Pin 2 to Pin 3	-3.0	0.5	+3.0	mV
+Output Voltage Swing	Pin 7 to Pin 3	6.8	7.2	8.1	V
-Output Voltage Swing	Pin 7 to Pin 3	-9.5	-11.2	-13.5	V
+Output Source Current	Pin 7 to Pin 3		650		μ A
-Output Source Current	Pin 7 to Pin 3		1.0		mA
Gain Bandwidth Product	F=50KHz	1.0	1.8		MHz
Resistors	I _s =0mA				
	pin 1 to Pin 3		10		K Ω
	Pin 2 to Pin 3		10		K Ω
	Pin 5 to Pin 4	3.5	4.7	5.9	K Ω
SCR Trigger Voltage	Pin 5 to Pin 4				
Detector On		1.5	2.8		V
Detector Off		0	1	10	mV

APPLICATION CIRCUIT



R2 Value depends on transformer characteristics

Needn't in two-wire Outlet