



## GF2140

## LINEAR INTEGRATED CIRCUIT

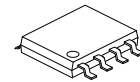
### LOW POWER TWO-WIRE GROUND FAULT INTERRUPTER

#### DESCRIPTION

As a low power controller for AC output appliance leakage current interrupters, the UTC **GF2140** can detect hazardous current paths to ground, and trigger SCR to protect.

#### FEATURES

- \* Directly powered from the AC line
- \* Build-in bridge rectifier
- \* Interface to SCR
- \* Adjustable trip current and time delay
- \* Minimum external components
- \* For two-wire system
- \* Be used in 110V or 220V system



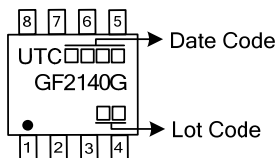
SOP-8

#### ORDERING INFORMATION

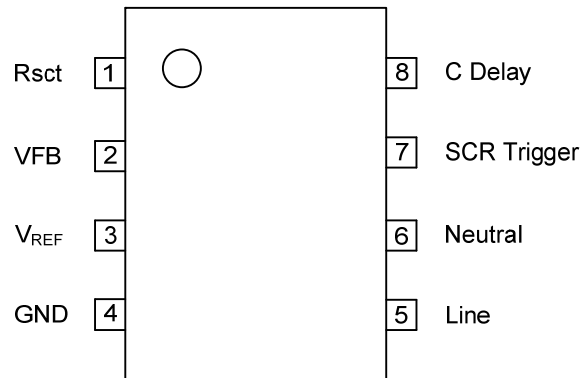
Ordering Number	Package	Packing
GF2140G-S08-R	SOP-8	Tape Reel

<p>GF2140G-S08-R</p> <ul style="list-style-type: none"><li>(1) Packing Type</li><li>(2) Package Type</li><li>(3) Green Package</li></ul>	<p>(1) R: Tape Reel</p> <p>(2) S08: SOP-8</p> <p>(3) G: Halogen Free and Lead Free</p>
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#### MARKING



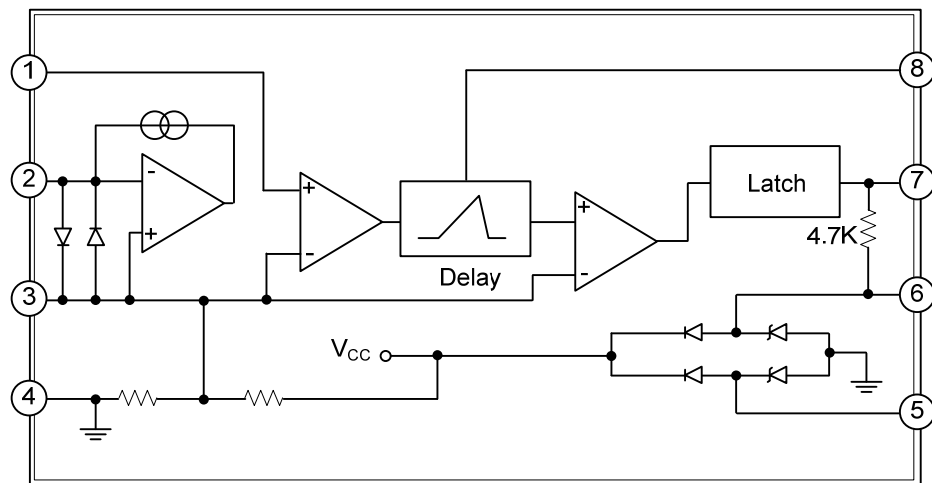
## PIN CONNECTIONS



## PIN DESCRIPTION

PIN	PIN NAME	I/O	PIN FUNCTION
1	Rst	O	Output of Leakage current first
2	V <sub>FB</sub>	I	Input of leakage current
3	V <sub>REF</sub>	I	Reference voltage
4	GND		Ground
5	Line	I	Line input
6	Neutral	I	Neutral input
7	SCR Trigger		SCR Trigger
8	C Delay	O	The Delay time

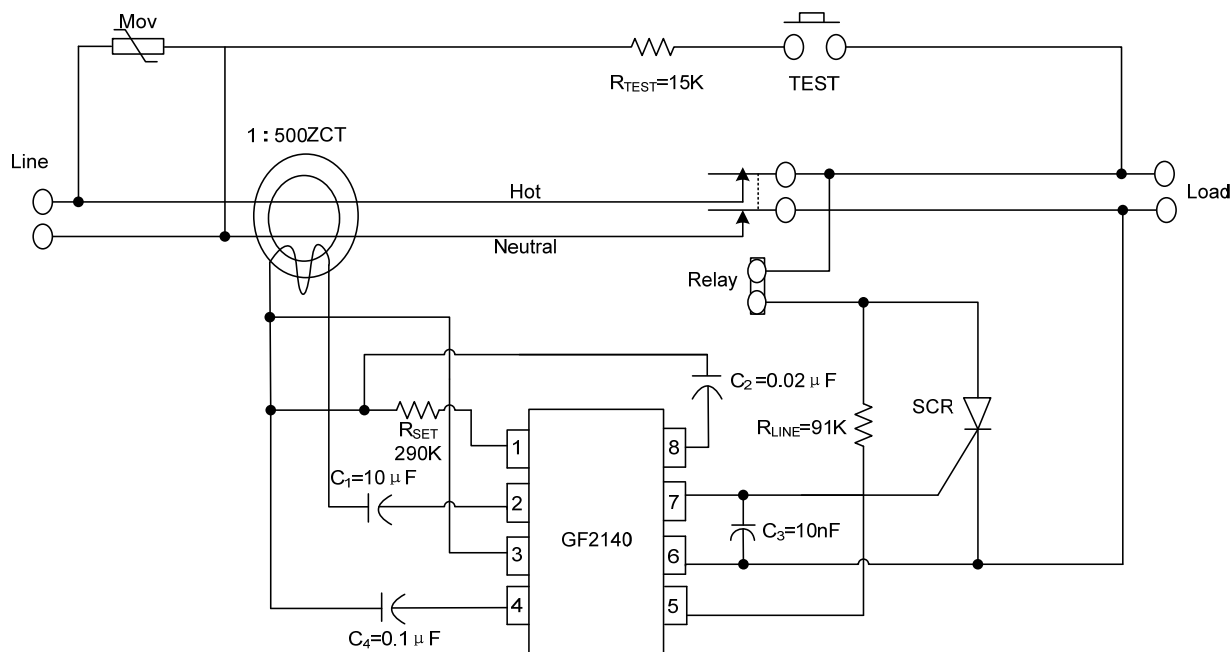
## BLOCK DIAGRAM



■ ELECTRICAL CHARACTERISTICS ( $I_{LINE}=1.2mA$ ,  $T_A=25^{\circ}C$ ,  $R_{SET}=290k\Omega$ )

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Shunt Regulator (PIN 5-4)						
Regulator Voltage	V <sub>REG</sub>	I <sub>2-3</sub> =11μA	6.1	6.5	7.5	V
		I <sub>LINE</sub> =700μA, I <sub>2-3</sub> =9μA	6.1	6.5	7.5	
Sense Amplifier (PIN 2-3)						
Offset Voltage	V <sub>I(OFF)</sub>	Design Value	-3.0	0	+3.0	mV
Input Bias Current	I <sub>I(BIAS)</sub>	Design Value		15	30	nA
Gain Bandwidth	f <sub>T</sub>	Design Value		3.44		MHz
SCR Trigger (PIN 7-6)						
Output Voltage	V <sub>OUT</sub>	I <sub>2-3</sub> =9μA	0	0.1	10	mV
		I <sub>2-3</sub> =11μA	1.4	2.0	2.6	V
Output Current	I <sub>OUT</sub>	V <sub>7-6</sub> =0V, I <sub>2-3</sub> =11μA	300	420	600	μA
Output Resistance	Z <sub>O</sub>	V <sub>5-6</sub> =open, I <sub>2-3</sub> =0	4.0	4.7	5.4	KΩ
Reference Voltage (PIN 3-4)						
Reference Voltage	V <sub>REF</sub>	I <sub>LINE</sub> =700μA	2.6	2.9	3.4	V
Delay Time (PIN 8-4)						
Delay Current	I <sub>D</sub>	I <sub>2-3</sub> =11μA	23	30	43	μA
Delay Time	t <sub>D</sub>	C <sub>8-4</sub> =20nF		2.0		ms

■ TYPICAL APPLICATION CIRCUIT



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