

# KA2807

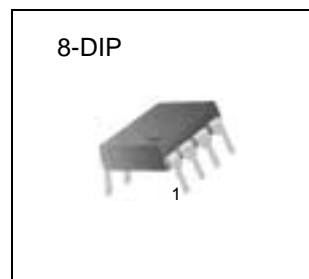
## Earth Leakage Detector

### Features

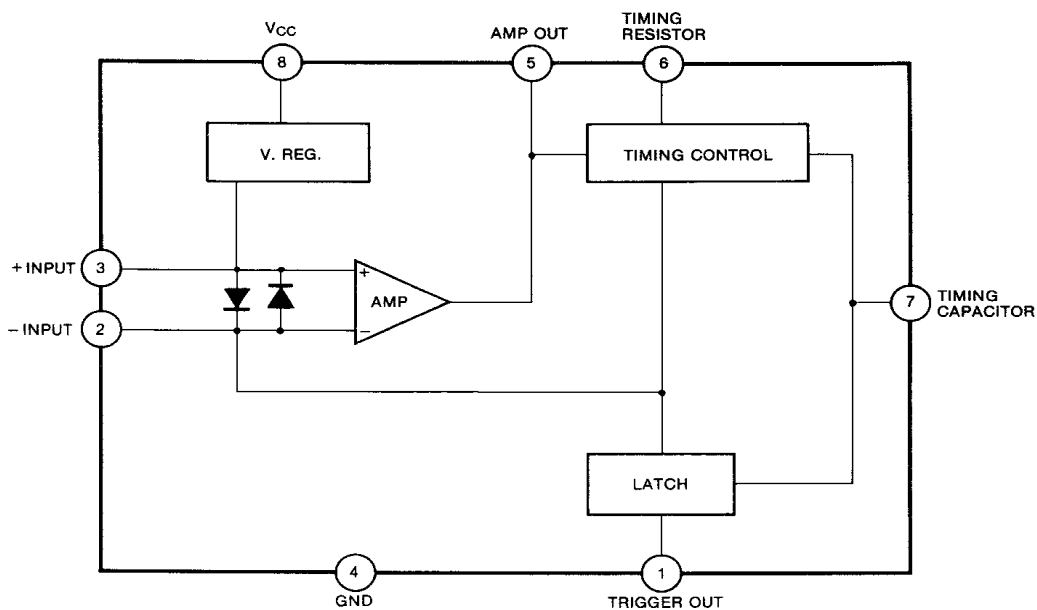
- Full Advantage Of The UL943
- Built-In Voltage Regulator
- Sense Coil: 1000:1
- GND/Neutral Coil: 200:1
- Normal Fault Sensitivity Current is 5mA Typical
- Trip Time in Normal Fault and Ground Neutral Fault is 18ms Typ
- Wide Operating Temperature Range
- Excellent ESD Characteristic
- 1mA Output Current Pulse to Trigger SCR

### Description

KA2807 is a IC for ground fault circuit interrupters which are intended to provide electrical shock hazard protection from line-to-ground fault currents on grounded circuits of 120V supplies.



### Internal Block Diagram



## Absolute Maximum Ratings

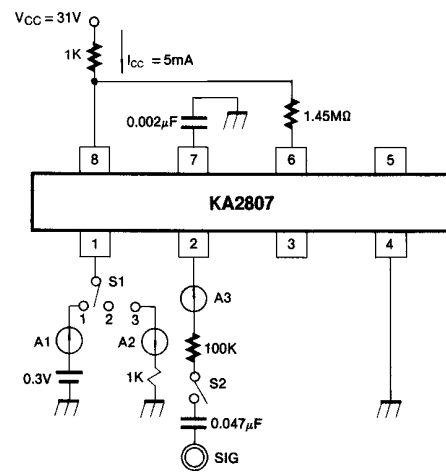
Parameter	Symbol	Value	Unit
Supply Current	I <sub>CC</sub>	19	mA
Power Dissipation	P <sub>D</sub>	1250	mW
Operating Temperature Range	T <sub>OPR</sub>	- 40 ~ + 70	°C
Storage Temperature Range	T <sub>STG</sub>	- 55 ~ + 150	°C

## Electrical Characteristics

(T<sub>A</sub> = 25°C, I<sub>CC</sub> = 5mA)

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

## Test Circuit

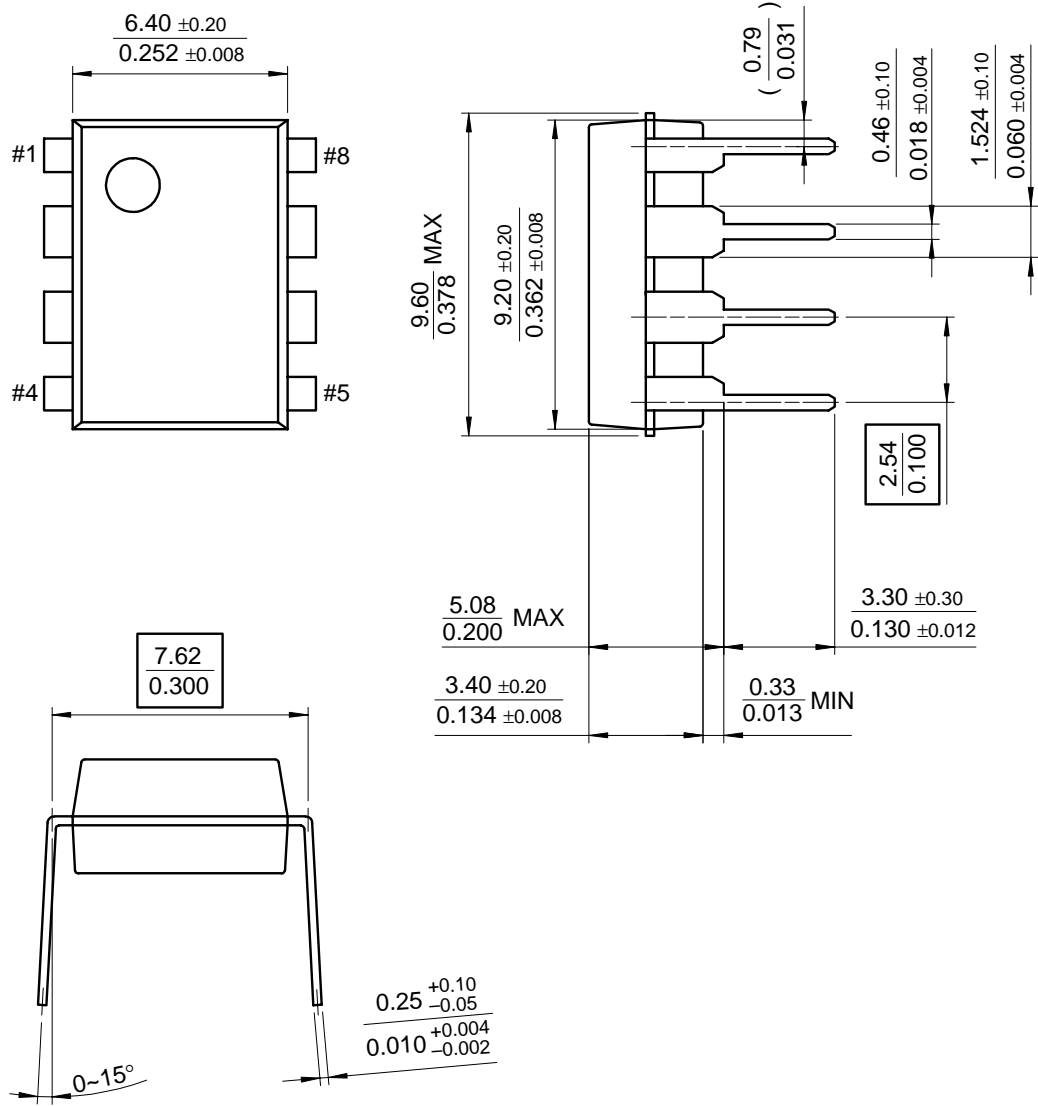


Mechanical Dimensions

Package

Dimensions in millimeters

8-DIP



## Ordering Information

Product Number	Package	Operating Temperature
KA2807	8-DIP	-40 ~ + 70°C

#### **DISCLAIMER**

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

#### **LIFE SUPPORT POLICY**

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR INTERNATIONAL. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.