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# KA2807

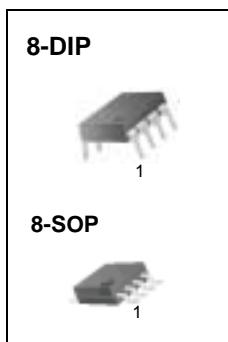
## Earth Leakage Detector

### Features

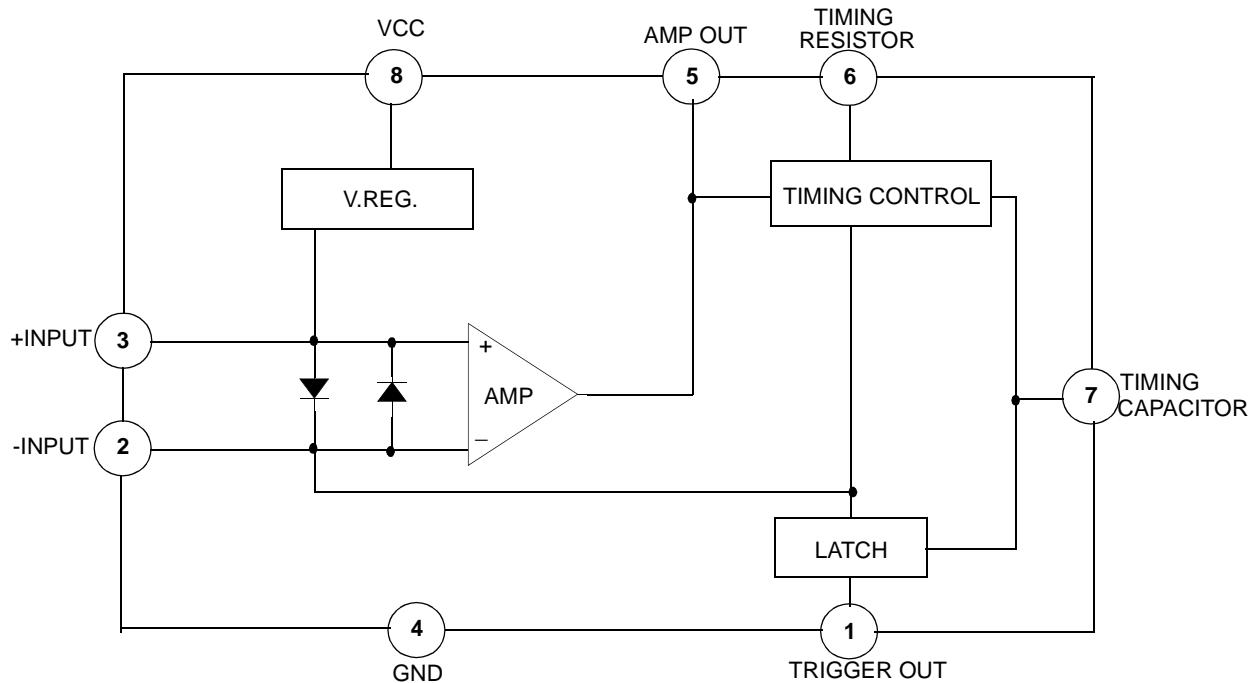
- Full Advantage of the UL943
- Built-In Voltage Regulator
- Sense Coil: 1000:1
- GND/Neutral Coil: 200:1
- Trip Time in Normal Fault and Ground Neutral Fault is 18ms Typ
- Wide Operating Temperature Range
- Excellent ESD Characteristic
- 1mA Output Current Pulse to Trigger SCR

### Description

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



### Internal Block Diagram



## Absolute Maximum Ratings

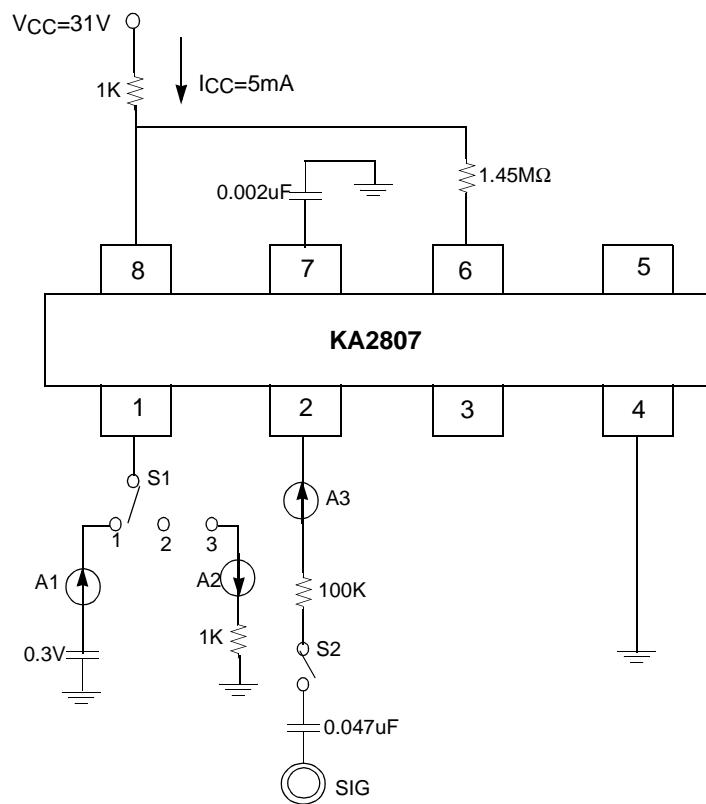
| Parameter                           | Symbol           | Value        | Unit |
|-------------------------------------|------------------|--------------|------|
| Supply Current                      | I <sub>CC</sub>  | 19           | mA   |
| Power Dissipation<br>8-DIP<br>8-SOP | P <sub>D</sub>   | 1.25<br>0.41 | W    |
| 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>       | Pin8, S1:2, S2:OFF   | 23   | 26   | 29   | V     |
| Amp Reference Voltage   | V <sub>REF</sub>       | Pin3, S1:2, S2:OFF   | 9.5  | 10.5 | 11.5 | V     |
| Amp High Output Voltage | V <sub>OH</sub>        | Pin5, S1:3, S2:ON<br>Sig: 800Hz, 3.0VP-P<br>Sinewave           | 17   | 19   | 21   | V     |
| Amp Low Output Voltage  | V <sub>OL</sub>        | Pin5, S1:3, S2:ON<br>Sig: 800Hz, 3.0VP-P<br>Sinewave           | 1.5  | 2.5  | 3.5  | V     |
| Amp Sensitivity Current | I <sub>SEN</sub>       | Pin2, S1:3, S2:ON<br>Sig: 800Hz, 1.0VP-P ~ 2.5VP-P<br>Sinewave | 3.5  | 5    | 6.5  | µArms |
| Latch On Voltage        | V <sub>ON(LATCH)</sub> | Pin7, S1:3, S2:ON<br>Sig: 800Hz, 3.0VP-P<br>Sinewave           | 16.5 | 17.5 | 19.5 | V     |
| SCR Trigger Current     | I <sub>TR</sub>        | Pin1, S1:3, S2:ON<br>Sig: 800Hz, 3.0VP-P<br>Sinewave           | 0.5  | 1    | 2.0  | mA    |
| Output Low Voltage      | V <sub>S 1</sub>       | Pin1, S1:2, S2:OFF   | -    | 100  | 240  | mV    |
| Output Impedance        | Z <sub>O</sub>         | Pin1, S1:2, S2:OFF   | -    | 100  | 250  | Ω     |
| Output Sink Current     | I <sub>SINK</sub>      | Pin1, S1:2, S2:OFF   | 2.0  | 6.0  | -    | mA    |

## Test Circuit

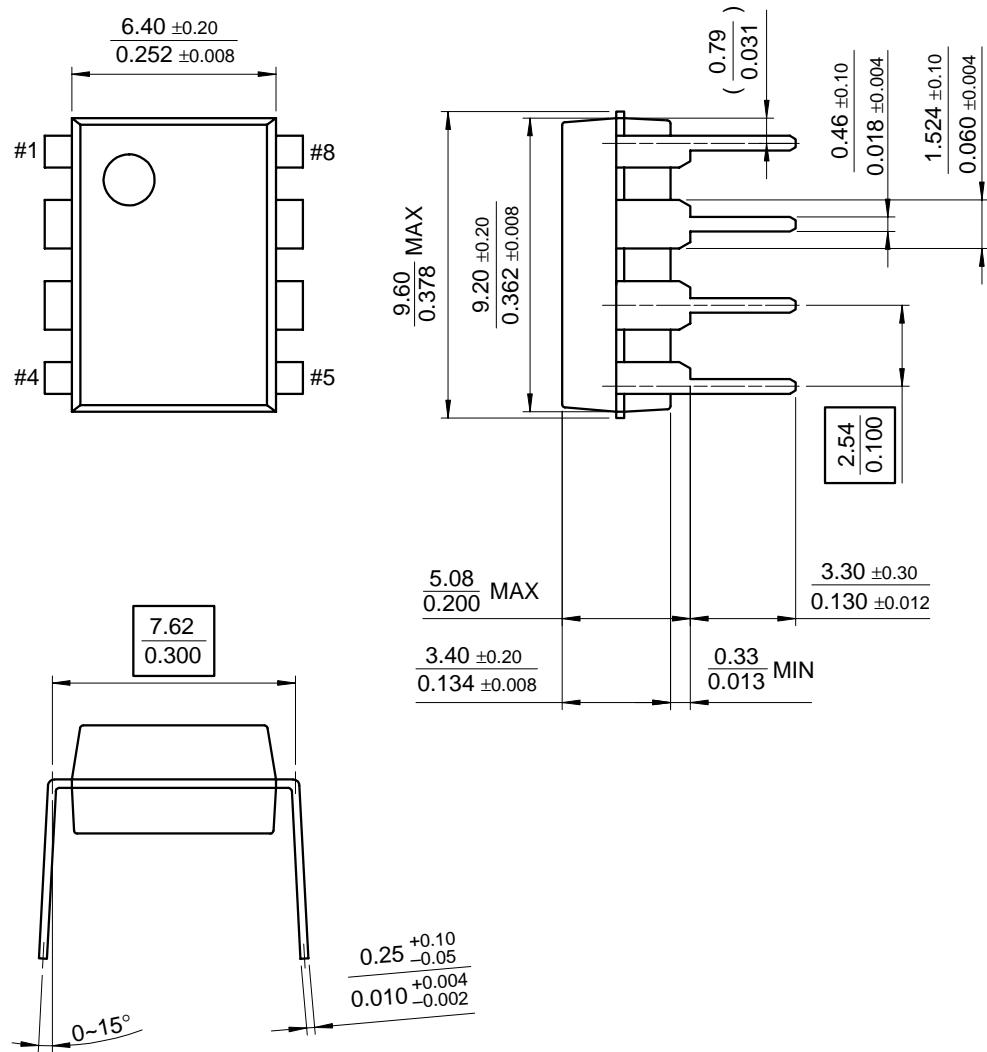


## Mechanical Dimensions

### Package

Dimensions in millimeters

### 8-DIP

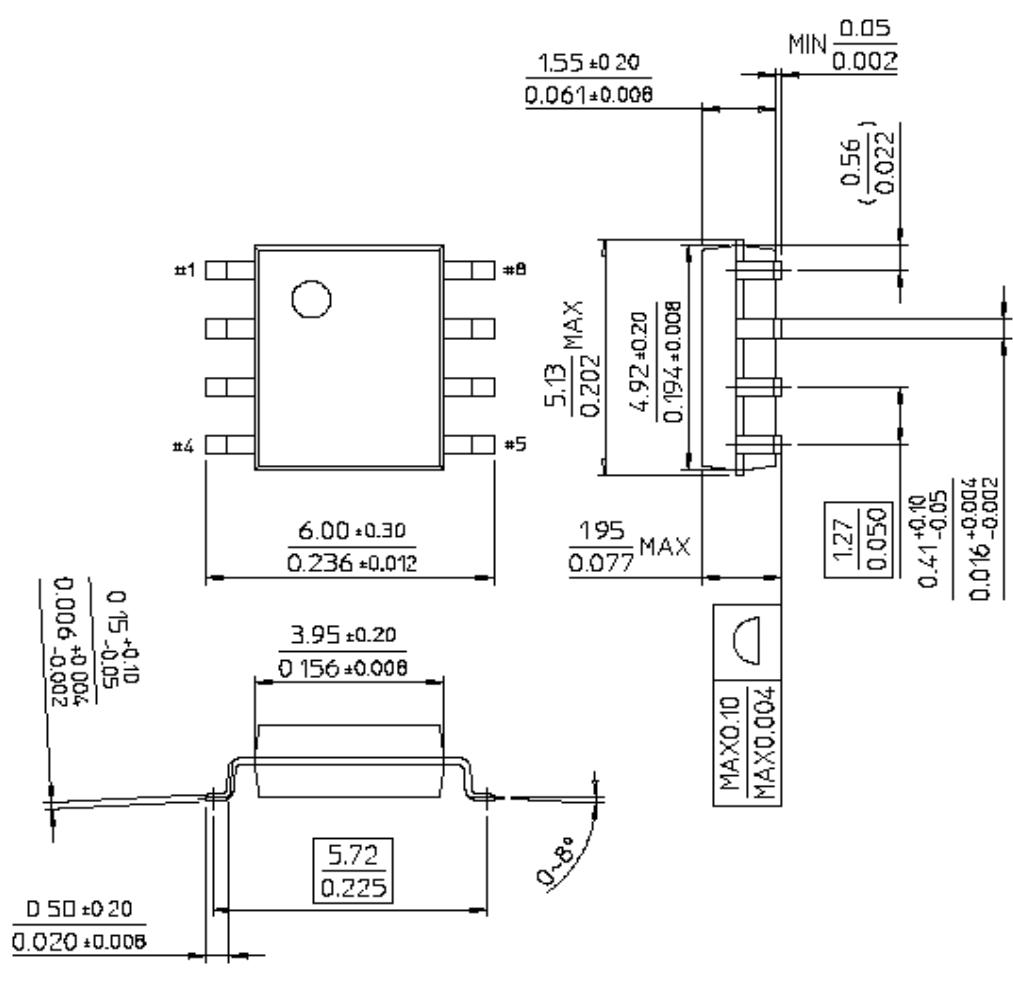


## **Mechanical Dimensions** (Continued)

## Package

**Dimensions in millimeters**

## 8-SOP



## Ordering Information

| Product Number | Package | Operating Temperature |
|----------------|---------|-----------------------|
| KA2807         | 8-DIP   | -40 ~ +70°C           |
| KA2807D        | 8-SOP   |                       |

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