

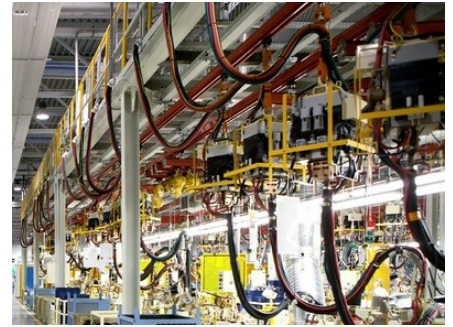
# Industrial Electronics

---

## Overview:

---

Component performance and quality is valued by this sector. Higher operating voltages, greater IRs, extreme operating conditions, and unique technical obstacles may occur. SOC's quality construction, diverse fuse portfolio, and capability of designing to unique criteria make SOC a superior choice for manufacturers of industrial electronics.



---

## Primary Applications:

---

- AC/DC converters for motor drivers, stepper motor controllers, and compressors
- DC/DC converters for control circuits, repeaters, isolators, and HVDC/DC converters
- Ex environments gas detection and monitoring

---

## Key Technical Advantages:

---

- Longevity and environmental insensitivity:

SOC utilizes wire element technology in all designs for stable operating characteristics over decades of use and for minimizing variation in performance across wide temperature ranges.

- Space saving designs with high voltage ratings:

SOC's advances in miniaturization of wire element fuses for consumer electronics has improved industrial electronics fuse designs.

- Ensuring appropriate coordination of overcurrent protection and sufficient inrush-current handling capabilities:

SOC's design and production strive to ensure fuse operating characteristics with minimal dispersion in stated capabilities over the lifetime of the fuse. SOC also possesses a knowledgeable sales force capable of determining the right fuse for the application. This allows SOC standard or custom products to reliably meet the important safety criteria of actual applications.

# Industrial Electronics

## AC/DC Converters / Rectifiers



### Application Specifics:

125 VAC protection will likely be insufficient, for industrial AC supply lines. Voltages of 240, 480, or even 600 VAC may be encountered. SOC is one of the few fuse manufacturers offering miniature fuse protection at these voltage levels.

In AC/DC converters, dual ratings are often desirable. Since, when a diode bridge fails in the rectification circuit, a high DC voltage may appear across the fuse during operation.

AC/DC converters have substantial inrush currents which occur during power cycling. High reliability situations or applications with frequent power cycling require sizing the fuse's  $I^2t$  to be many times greater than the inrush current. SOC's inrush-withstand fuses meet these difficult criteria.

### Product Offering:



#### SHV

The SHV series features compact cartridge dimensions, voltage ratings as high as 600 VAC, a wide range of rated currents, and excellent DC performance (dual ratings available).



#### 36CT

The 36CT features ratings up to 6.3A. This surface mount fuse safely interrupts currents up to 1500A at 250 VAC meeting Ex high breaking capacity fuse requirements (dual rated at 300 VDC).



#### 25CT

The 6mm length of this fuse is ideal for space conscious designs. The 25CT is our most compact 250 VAC rated fuse (dual rated at 125 VDC).

# Industrial Electronics

## DC/DC Converters and DC/AC Inverters



### Application Specifics:

To reduce transmission loss, increase power conversion efficiency, and reduce cost of cable, many industrial facilities are incorporating more HVDC supplies into their power architecture. Utilizing this power requires better DC circuit protection. SOC has developed the ability to meet requirements up to 700 VDC within miniature fuse package sizes.

Industrial step-down DC converters employed where sensitive downstream equipment require protection, typically need fuses with quick-acting characteristics. Where substantial inrush currents are unavoidable the DC converter may require an inrush-withstand characteristic.

SOC manufactures many fuses which possess dual ratings for industrial DC/AC inverters. As with DC/DC converters, the opening characteristic is application dependent, sometimes requiring quick acting, and in more reactive circuits, inrush-withstand.

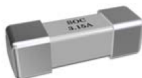
### Product Offering:

#### Super High Voltage Fuses (>300 VDC)



**SHV16**

3AG cartridge dimensions and a 700 VDC rating in currents of up to 4A. Offers our highest DC voltage protection.



**36CFA**

High voltage DC converter protection. Available in current ratings up to 3.15A at 600 VDC.



**SHV18**

Just over an inch in length this fuse has a 500 VDC rating and rated at 30A with 1000A of interrupting rating.



**SHV20**

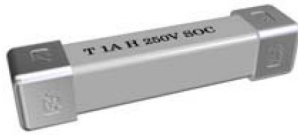
5x20 mm fuse with 450 VDC rating for currents up to 6.3A and has 200A of interrupting rating.



**SHV14**

6x32 mm fuse with 400 VAC/VDC rating in currents up to 20A with 500A of interrupting rating. Ideal for inverter circuits.

## DC/DC Converter or Inverters Product Offering (cont.):

**High Voltage Fuses (125 VDC- 300 VDC)****36CT**

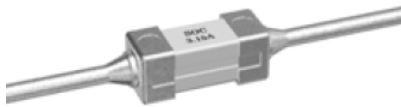
300 VDC and 200 A of IR with currents up to 6.3 A. This fuse possesses an inrush-withstand characteristic (dual rated at 250 VAC).

**DC300V25CF**

High voltage protection within a compact size. Available in current ratings up to 2A at 300 VDC in a length of 6.1mm.

**25CF**

Rated at 150 VDC and 350A of IR with currents up to 15A, this fuse accomplishes these abilities within a 6.1 x 2.57 mm package (dual ratings available).

**25RF**

Leaded fuse capable of carrying 10A of rated current. 125 VDC with 300A of IR (dual rated at 250VAC).

**Industrial Fuses (<125VDC)****25CF**

At 72 VDC, this fuse is available in current ratings up to 18A. This fuse is also rated up to 5A at 86 VDC with 10kA of IR ideal for larger power centers.

**11CF / CT**

3216 fuse rated as high as 72 VDC and currents up to 10A. CF designates quick-acting, CT designates inrush-withstand variant.

**MCF**

This fuse is ideal for compact designs in communication circuits for isolators and repeaters and features an extremely quick operating speed. Current ratings range from 3A down to as low as 50mA (dual rated at 125 VAC).

# Industrial Electronics

## Ex Environments

---

### Application Specifics:

---

Fuses utilized in Ex environments have more requirements than just electrical. One common requirement is the need for sealing which helps prevent the negative impacts process fluid seepage has on fuse performance and reliability .

Also, to meet the requirements for intrinsically safe equipment, fuses must meet high breaking capacity requirements. SOC is one of the few manufacturers able to offer an SMD fuse that achieve the required ratings of 250 VAC and 1500A of IR on a circuit whose power factor is 0.7-0.8.



---

### Product Offering:

---



### MCFA

Sealed variant helps prevent seepage of process fluids into fuse chamber. The rated currents range from as low as 50mA up to 3A allowing this fuse to be utilized to protect communication lines or small AC/DC rectifiers where its dual 125 VAC/72 VDC rating can be utilized.



### 36CTB

36CTB fuses are sealed with current ratings up to 6.3A. This surface mount fuse safely interrupts currents up to 1500A meeting Ex high breaking capacity fuse requirements. (dual rated at 300 VDC).