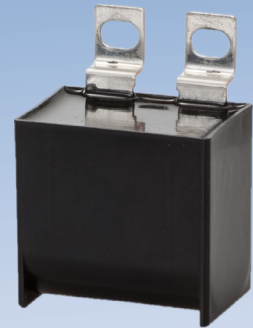


Type DMS

Direct Mount Snubber Capacitor

ASC™ DMS Capacitors are designed for high demand environments commonly found in IGBT products. The DMS is a double metallized, self-healing design that can maintain very high peak and RMS currents while reducing price and increasing reliability compared to traditional film foil capacitors.

Our new terminal style (W) meets the terminal spacing found in the latest IGBT products on the market. Custom voltages, capacitance values, and terminal designs are available.



General Specifications

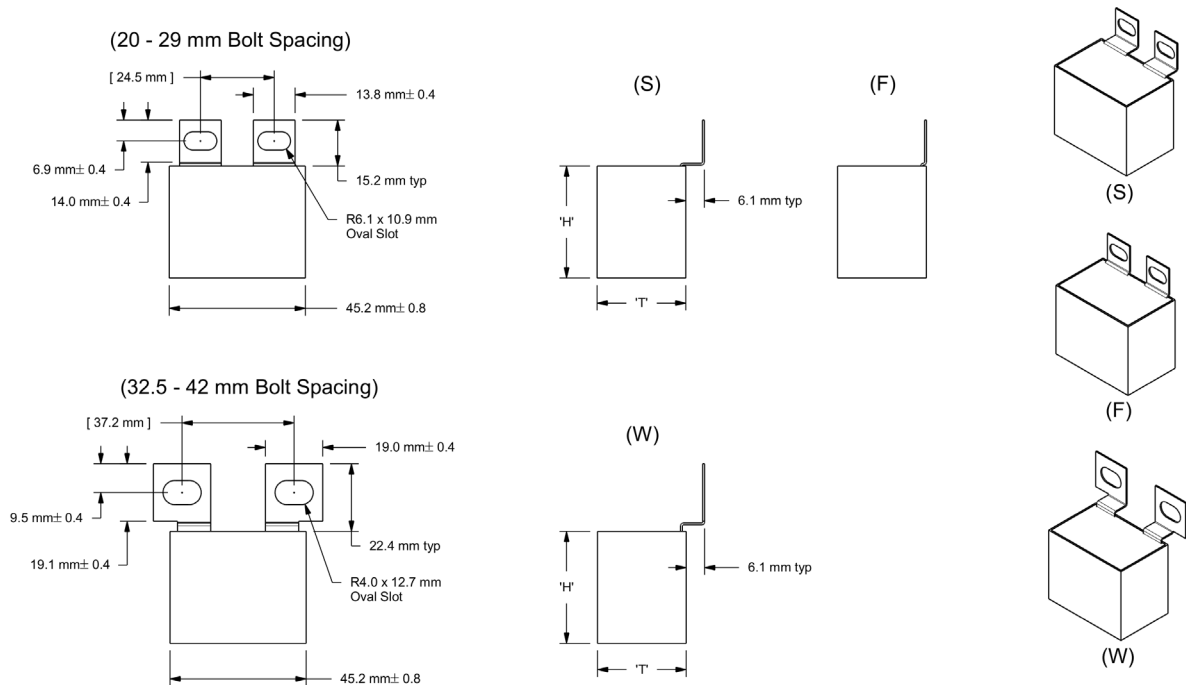
* Capacitance ratings are dependent upon voltage level, frequency and total current.

| Parameter | Value |
|---------------------------------|--|
| Capacitance | 0.1 μ F – 10.0 μ F* |
| Tolerance | \pm 5%, \pm 10% - special tolerance on request |
| Rated Voltage | 600 – 2000 VDC, 250 – 500 Vrms |
| Temperature Range (operational) | -40/85C (custom ratings available) |
| Temperature Range (storage) | -40/95C |
| RMS Current | Up to 25 Arms |
| Standards | IEC61071 |
| Case | Flame retardant molded plastic case and UL94-V0 epoxy |
| Terminals | Tin plated brass tabs (slotted for 20-29 or 33-42 mm bolt spacing) |
| Tan δ | 2×10^{-4} Polypropylene |
| Terminal to Terminal Test | 1.5 x Undc 10 seconds |
| Terminal to Case Test | $U_{T-CASE} = 2 U_I + 1000v$ OR 3000v (whichever is highest value) |
| Reliability | 100 FIT |
| Insulation Resistance | 10,000 M Ω - μ F at 100V after 2 minutes |

Applications

DMS Capacitors are specifically designed for IGBT Snubbers for inverters.

Dimensions [mm]:



Ordering Information

| Type | Terminal Style | Capacitance | Tolerance | Voltage |
|------|----------------------|-------------|-----------|---------|
| DMS | (S) = 20-29 mm Step | 0.1 | 5 = ±5% | 600 |
| DMS | (F) = 20-29 mm Flush | ↑ | 10 = ±10% | ↑ |
| | (W) = 33-42 mm Wide | 10 | | 2000 |

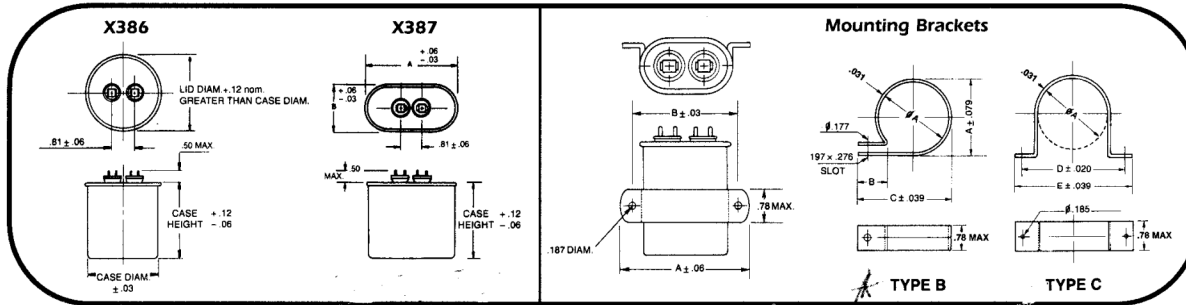
| Examples | Order Code |
|--|-------------------|
| Type DMS, Step Terminal, 0.68uF ±5%, 600 VDC | DMS(S) 0.68-5-600 |
| Type DMS, Wide Terminal, 10uF ±10%, 2000 VDC | DMS(W) 10-10-2000 |

American Shizuki Capacitors specializes in creating made-to-order solutions for your unique application. Please don't hesitate to ask us about customized components.



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fax: 308-284-8324

**Metallized Polypropylene Capacitors
Oil-Filled / Metal Encased**



- **50% Size And Weight Reduction Over Conventional Designs**
- **Extremely Low Losses And Heat Dissipation**
- **Non-PCB SPEARINOL III™ Oil Filled**
- **Self-Healing Ability For Enhanced Reliability And Life**
- **Round Aluminum Or Oval Terne-Plated Steel Cases**
- **- 40°C To + 70°C Operating Temperature Range (To +90°C For Types X388-X389 Only)**
- **UL File #E83671**
- **Types X386/X387: CSA Approved File No. LR68147 And LR68148. Types X388/X389: CSA Pending**
- **Mounting Brackets And Terminal Caps Available**
- **2, 3, Or 4 Tine Terminal Configurations**
- **Exceeds EIA 456 Standards**
- **240 VAC To 440 VAC Ratings**

ASC oil-filled capacitors employ high quality metallized polypropylene film dielectric.

They are non-PCB oil-filled in metal cases designed for industrial applications, motor run applications in refrigeration and air conditioning equipment, power factor correction, power supplies and general purpose AC applications. The X388 and X389 series have been especially designed for HID lighting applications. They are available in round aluminum cans or oval terne-plated steel cans and are up to 50% smaller and more reliable than conventional paper/foil designs. Short circuits are virtually eliminated due to the self-healing properties inherent in the metallized polypropylene film. Should a breakdown occur in the dielectric, the metallization around the fault area evaporates and effectively removes the defect from the capacitor. This operation occurs in microseconds, and the capacitance loss is essentially immeasurable.

ASC's design includes a partial impregnation technique utilizing SPEARINOL III dielectric fluid, a natural oil-based coolant. This process yields superior operating and life characteristics over competitive polypropylene designs due to lower electrical/heat losses and higher corona inception voltage (CIV). Synthetic hydrocarbon oils and petrochemical oils, commonly used as dielectric fluids in metallized polypropylene designs, have been shown to swell polypropylene film causing premature failure and increased capacitance loss over time due to a weakening of the electrodes. A UL approved internal protective device is provided (File E83671) with fault current ratings

up to 10,000 amperes. Dual capacitance designs are also available.

SPEARINOL III™ is a trademark of ASC.

Physical Characteristics

Construction:
Non-inductive wound metallized polypropylene, oil-filled (non-toxic, disposable).

Case:
Non-corrosive seamless can, with double roll lock aluminum cover, suitable for outdoor applications.

Terminals:
Tin plated, 1/4 inch quick disconnect tines. Four (4) tine is standard, two (2) and three (3) tine available on request.

Marking To Include:

- ASC Logo
- Capacitance
- Tolerance
- Voltage
- Capacitor Type
- EIA Date Code

Specifications

Voltage Range:
240 VAC to 440 VAC.

Capacitance:
See tables.

Tolerances:
±3%, ±6%, ±10%

See pages 16 and 17 for general polypropylene characteristics not specified herein

Types X386, X387, X388, X389



Metallized Polypropylene Capacitors Oil-Filled / Metal Encased

Dissipation Factor:

0.1% maximum at rated voltage, 60 Hz, 25° +5°C.

Operating Temperature Range:

Case temperatures between -40°C and +70°C (to +90°C for Types X388-X389 only).

AC Voltage Rating:

Operation at 110% of rated voltage is possible with decreased life at frequencies up to 66 Hz, provided the maximum case temperature is not exceeded.

Volt-Ampere Loading:

Type X386/7 capacitors are capable of operation at a volt-ampere loading resulting from the combined effects of capacitance tolerance, frequency variation, voltage and harmonics not exceeding 130% of the volt-ampere loading calculated at rated capacitance and 60 Hz voltage provided the maximum case temperature is not exceeded. The volt-ampere loading must be calculated and included at each harmonic frequency to determine the total loading effect.

Test Voltage:

Terminal to Terminal: 1.80 x rated voltage for one second
Terminal to Case: 2.0 x rated voltage + 1000 VAC for one second

Insulation Resistance:

Terminal to Terminal: 500 megohms x MFD minimum
Terminal to Case: 1000 megohms x MFD

Leakage Current:

With 115 VAC, 60 Hz applied between the capacitor terminals shorted together and the case, the leakage current shall not exceed the following values:

| Capacitance (MFD) | Leakage Current (µA) |
|-------------------|----------------------|
| 0-14 | 60 |
| 14.1-20 | 70 |
| 20.1-35 | 100 |
| 35.1-60 | 150 |

Internal Protective Device:

Type X386/7 capacitors have an internal protective device designed to prevent case rupturing. This unique patented device is recognized by Underwriter's Laboratories under file number E83671. A minimum of 1/2" additional space is required above the terminals for proper operation of this protector.

Oval Case Sizes:

| Oval Size | Case Dimensions | |
|-----------|-----------------|------|
| | A | B |
| A | 1.25 | 1.31 |
| B | 1.50 | 1.56 |
| C | 1.75 | 1.91 |
| D | 2.00 | 1.97 |

Oval Mounting Brackets:

| Oval Size | Part Number | Dimensions | |
|-----------|-------------|------------|------|
| | | A | B |
| 1.25 | RK752301 | 2.94 | 2.56 |
| 1.50 | RK752302 | 3.50 | 3.06 |
| 1.75 | RK752303 | 3.69 | 3.31 |
| 2.00 | RK752304 | 4.44 | 4.06 |

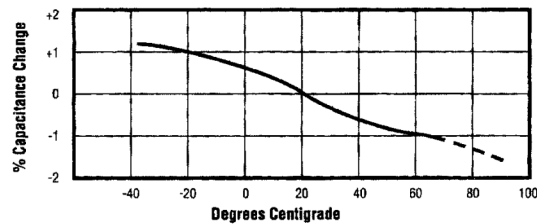
Round Mounting Brackets:

| Round Part No. Size (Type B) | Dimensions | | |
|------------------------------|------------|------|------|
| | A | B | C |
| 1.75 RS752001 | 2.76 | .591 | 2.20 |
| 2.00 RS752051 | 1.99 | .630 | 2.44 |

| Round Part No. Size (Type C) | Dimensions | | |
|------------------------------|------------|------|------|
| | A | D | E |
| 1.75 RS752002 | 1.76 | 2.56 | 2.94 |
| 2.00 RS752052 | 1.99 | 2.75 | 3.13 |
| 2.50 RS752152 | 2.50 | 3.25 | 3.63 |

TYPICAL PERFORMANCE CURVES (Refers to X388, X389 series only)

Capacitance Change vs. Temp.



Dissipation Factor vs. Temp.

