



**MUE CAP**

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**AVX Discharge Capacitors**  
**GENAUE DEFINITION AUF ANFRAGE!**  
***EXACT DEFINITION ON REQUEST!***

In 1979, Thomson Passive Components (acquired by the AVX Corporation in 1998) developed the **CONTROLLED SELF-HEALING technology** for medium power dry filtering capacitors.

In 1988, AVX started the development of **CONTROLLED SELF-HEALING technology** for impregnated DC filtering capacitors (TRAFIM series). This product range is very popular and has been licensed by other manufacturers.

Improvements of film technology and its metallization the last 10 years have led to a significant increase of the energy density available in AVX's TRAFIM series. In fact, it is now considered one of the most compact capacitors on the market.

Today AVX offers impregnated capacitors based on the same controlled self-healing technology, which are ideal for discharge applications. The voltages of these DISFIM capacitors range from 2kV to 75kV. The maximum available energy per can is 150kJ.

In the past, discharge capacitors have used foil electrodes. Any defect of weak point in the film led to a catastrophic failure of the capacitor involving a short-circuit with even a risk of explosion.

Now, with the controlled self-healing technology, the capacitance of the DISFIM is divided into several million elementary capacitances. The weak points in the dielectric are insulated and the capacitor continues to work without any short-circuit or risk of explosion. DISFIM capacitors may represent more than 10,000 square meters. Only some square millimeters of active surface are lost for every self-healing action. Over the life of the capacitor, the capacitance gradually decreases. The capacitor is usually designed to lose less than 5% of its initial capacitance during its whole lifetime.

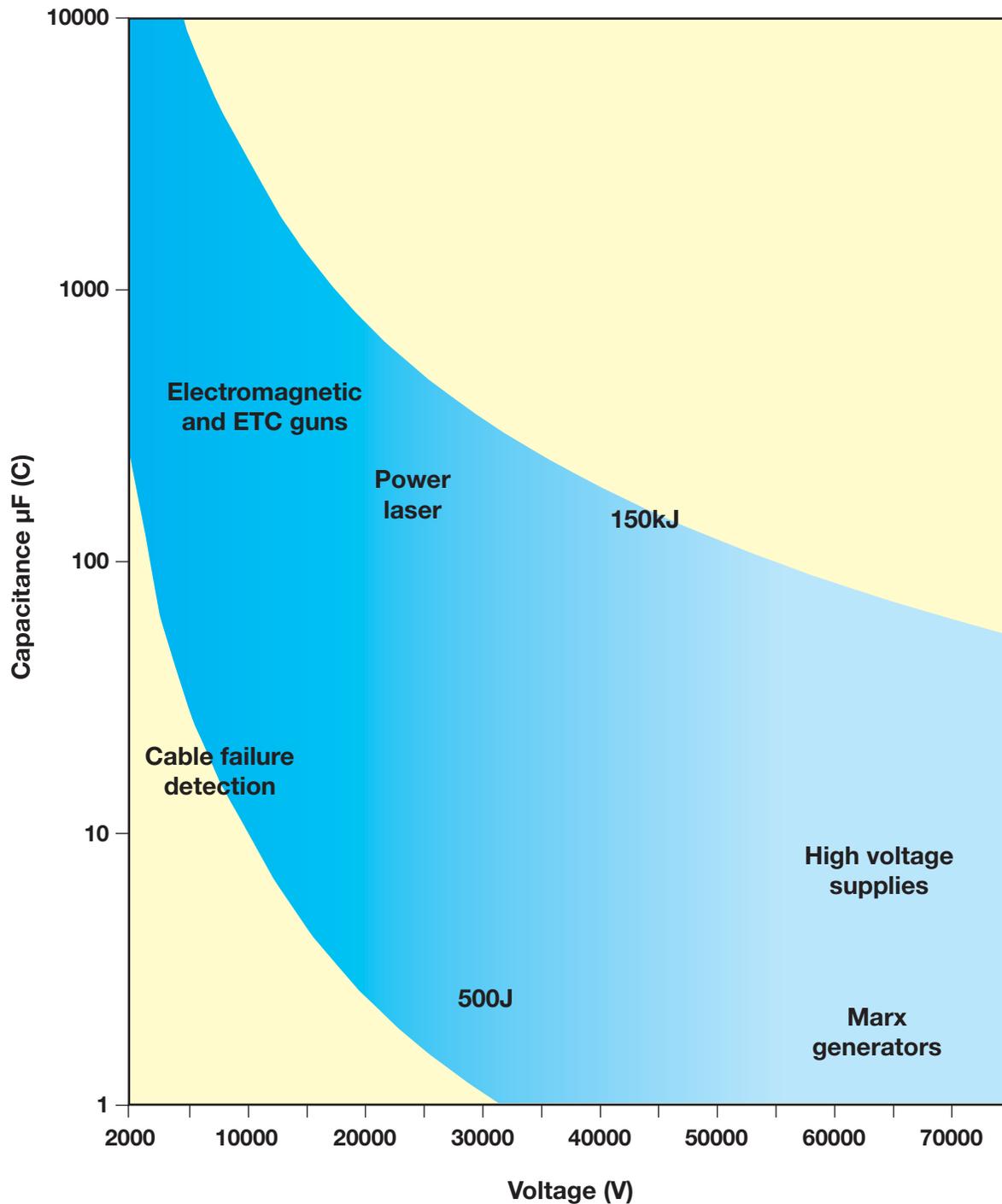
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# DISFIM Products



## DISFIM RANGE



Tolerance on capacitance:  $\pm 10\%$ ,  $\pm 5\%$ ,  $\pm 2\%$   
Stray inductance: 50nH to 500nH

# DISFIM Products

## For Energy Storage and Discharge Applications

Based on the CONTROLLED SELF HEALING technology, AVX offers impregnated capacitors, named DISFIM, which are ideal for discharge applications.

With the controlled self-healing technology, the capacitance of the DISFIM is divided into several million elementary capacitances. The weak points in the dielectric are insulated and the capacitor continues to work without any short-circuit or risk of explosion.

DISFIM capacitors may represent more than 10,000 square meters.

Only some square millimeters of active surface are lost for every self-healing action.

Over the life of the capacitor, the capacitance gradually decreases.

The capacitor is usually designed to lose less than 5% of its initial capacitance during its whole lifetime.



Example of design with 2 epoxide flat terminals

### APPLICATIONS

- |                         |                              |
|-------------------------|------------------------------|
| Power laser             | Electromagnetic and ETC guns |
| High voltage supplies   | Marx generators              |
| Cable failure detection | Welding machine              |

**Custom design is the rule as applications and operating conditions are various.**

**Feel free to send your request to your local AVX representative.**

**Use guide for customer's specific requirement.**

### CHARACTERISTICS

- Voltage range from 2kV to 75kV
- Maximum energy per can 150kJ
- Specific energy up to 2000J/l
- Lifetime up to several tens millions shots
- Stray inductance from 50nH to 500nH

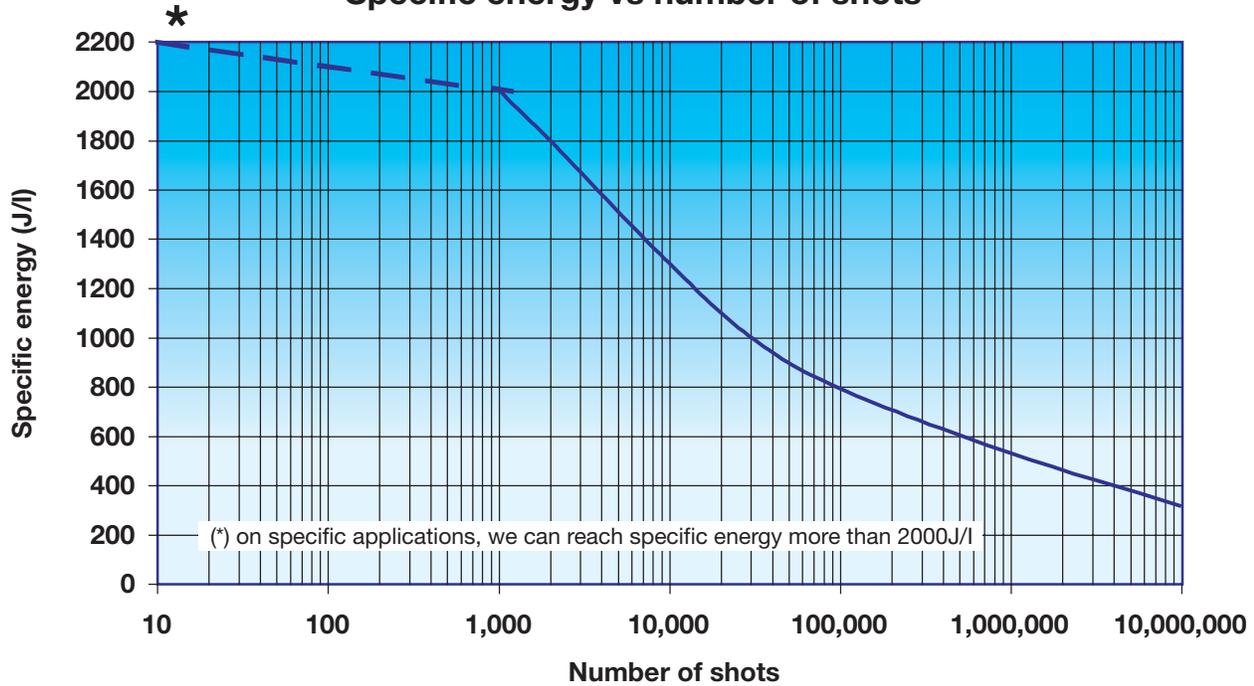
### CONSTRUCTION

- Metal case unit
- Epoxide flat terminals or ceramic terminals

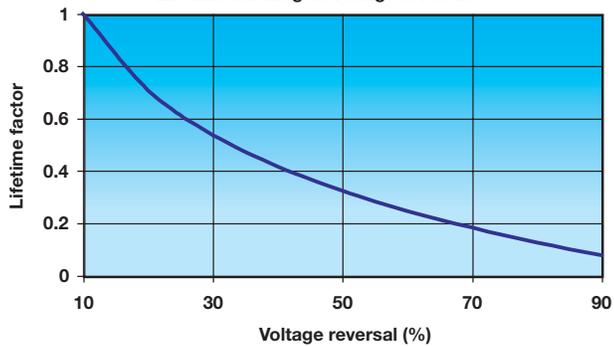
# DISFIM Products

## SPECIFIC ENERGY CALCULATION

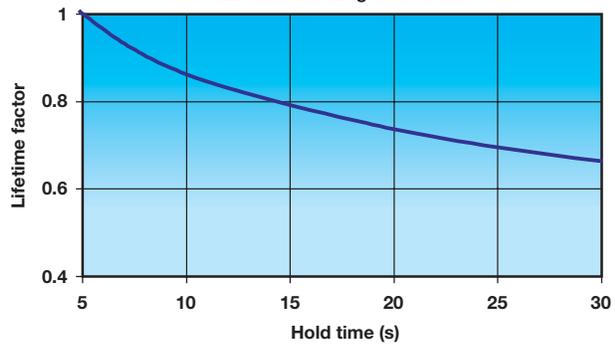
Specific energy vs number of shots



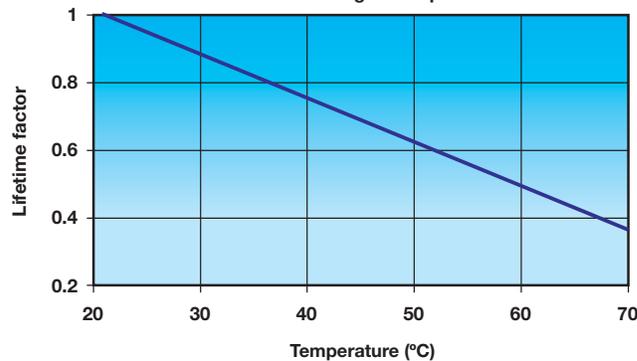
Lifetime derating vs voltage reversal



Lifetime derating vs hold time

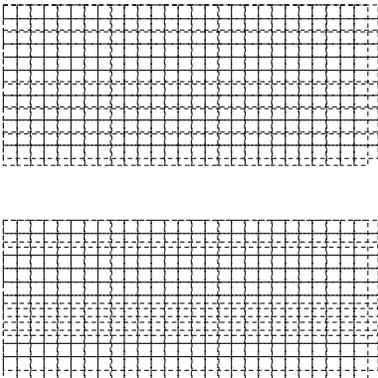


Lifetime derating vs temperature



# DISFIM Products

This questionnaire lists the information we require to prepare an offer according to your exact requirements.

Name: _____ Company: _____ Address: _____ _____	Function: _____ Telephone: _____ Fax: _____ Email: _____												
<b>Expected dimensions:</b> Width (mm): _____ Length (mm): _____ Height (mm): _____	Capacitance/Tolerance <span style="float:right">μF      %</span> <hr/> Charging Voltage <span style="float:right">V</span> <hr/> Capacitance Time <span style="float:right">s</span> <hr/> Hold Time <span style="float:right">s</span>												
<b>Expected stray inductance:</b> nH _____	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="width:20%;">Normal Conditions</th> <th style="width:20%;">Faulty Conditions</th> </tr> </thead> <tbody> <tr> <td><b>Expected lifetime</b> <span style="float:right"><i>hours</i></span></td> <td></td> <td></td> </tr> <tr> <td style="text-align:center"><b>or</b> <span style="float:right"><i>shots</i></span></td> <td></td> <td></td> </tr> </tbody> </table>		Normal Conditions	Faulty Conditions	<b>Expected lifetime</b> <span style="float:right"><i>hours</i></span>			<b>or</b> <span style="float:right"><i>shots</i></span>					
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	Cooling conditions Natural convection Force air <span style="float:right">m/s</span> Oil												
Remarks:													