

## GTO MKP Capacitors for Pulse Applications with Internal Series Connection

### Special Features

- Pulse duty construction
- Self-healing
- Cylindrical capacitor body with axial screw and thread connections size M6 or M8
- Internal series connection from 400 VAC
- Very low dissipation factor
- Negative capacitance change versus temperature
- According to RoHS 2002/95/EC

### Typical Applications

For high pulse and high frequency applications requiring extremely reliable contacts e.g.

- Damping of voltage spikes on GTO-Thyristors

### Construction

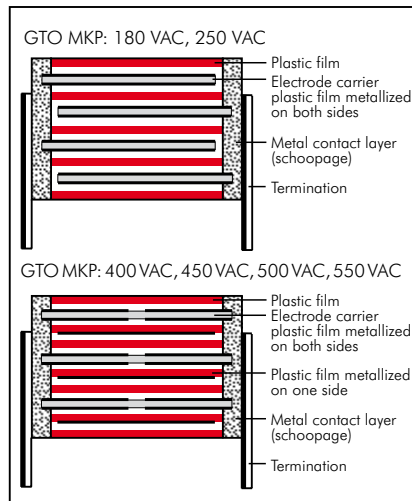
#### Dielectric:

Polypropylene (PP) film

#### Capacitor electrodes:

Double-sided metallized plastic film

#### Internal construction:



#### Encapsulation:

Solvent-resistant, flame-retardant plastic case with PU seal, UL 94 V-0

#### Terminations:

Axial screw connection M6 or M8.

#### Marking:

Colour: Red. Marking: Black on Silver.

### Electrical Data

#### Capacitance range:

1.0  $\mu$ F to 100  $\mu$ F

#### Rated voltages:

400 VDC, 600 VDC, 850 VDC, 1000 VDC, 1200 VDC, 1500 VDC

#### Capacitance tolerances:

$\pm 20\%$ ,  $\pm 10\%$ ,  $\pm 5\%$

#### Operating temperature range:

$-55^\circ\text{C}$  to  $+85^\circ\text{C}$

#### Climatic test category:

55/085/56 in accordance with IEC

#### Insulation resistance at $+20^\circ\text{C}$ :

$\geq 10\,000$  sec ( $M\Omega \times \mu\text{F}$ )

(mean value: 50 000 sec)

Measuring voltage: 100 V/1 min.

#### Test voltage: $1.2 U_r$ , 2 sec.

#### Dielectric absorption:

0.05%

#### Dissipation factors at $+20^\circ\text{C}$ : $\tan \delta$

at f	$C \leq 20 \mu\text{F}$	$20 \mu\text{F} < C \leq 50 \mu\text{F}$	$C > 50 \mu\text{F}$
1 kHz	$\leq 3 \times 10^{-4}$	$\leq 5 \times 10^{-4}$	$\leq 8 \times 10^{-4}$

#### Voltage derating:

A voltage derating factor of 1.35 % per K must be applied from  $+65^\circ\text{C}$  for DC voltages and from  $+60^\circ\text{C}$  for AC voltages.

#### Reliability:

Operational life  $> 300\,000$  hours

Failure rate  $< 1$  fit ( $0.5 \times U_r$  and  $40^\circ\text{C}$ )

#### Specific dissipation:

Box size W x L in mm	Specific dissipation in Watts per K above the ambient temperature
60x49	0.186
70x49	0.231
80x49	0.280
90x49	0.333
90x58	0.364
90x97	0.501

### Mounting Recommendation

Excessive mechanical strain, e.g. pressure or shock onto the capacitor body, is to be avoided during mounting and usage of the capacitors. When fixing the capacitor the screw torque is to be limited to max. 5 Nm.

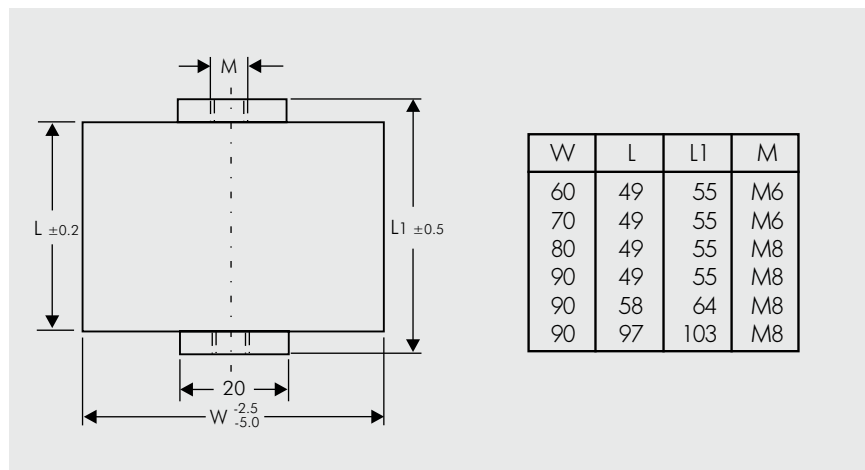
For further details and graphs please refer to Technical Information.

### Packing

Transportation-safe packing in cardboard boxes.

#### Packing units

W	pcs. per packing unit
60	12
70	8
80	6
90	6



## Continuation

### General Data

Capacitance	400 VDC/180 VAC*			600 VDC/250 VAC*			850 VDC/400 VAC*		
	W x L mm	du/dt V/μsec	I <sub>max.</sub> A	W x L mm	du/dt V/μsec	I <sub>max.</sub> A	W x L mm	du/dt V/μsec	I <sub>max.</sub> A
3 μF							60 x 49	200	770
3.5 "				60 x 49	200	770	60 x 49	200	770
4 "				60 x 49	200	890	60 x 49	200	890
4.5 "				60 x 49	200	990	60 x 49	200	990
5 "				60 x 49	180	1090	60 x 49	200	1090
6 "				60 x 49	180	1310	60 x 49	200	1310
8 "				60 x 49	80	610	60 x 49	200	1740
10 μF				60 x 49	80	780	70 x 49	200	2190
15 "	60 x 49	50	790	60 x 49	80	1150	70 x 49	200	3230
20 "	60 x 49	50	1050	70 x 49	80	1540	80 x 49	200	4310
25 "	60 x 49	50	1330	70 x 49	80	1940	90 x 49	200	5390
30 "	60 x 49	50	1610	80 x 49	80	2340	90 x 58	160	4800
40 "	70 x 49	50	2090	90 x 49	80	3080	90 x 97	100	3780
50 "	80 x 49	50	2680	90 x 58	60	3050	90 x 97	100	4790
60 "	80 x 49	50	3240	90 x 97	35	2140	90 x 97	100	5800
70 "	90 x 49	50	3630	90 x 97	35	2520			
80 "	90 x 49	50	4100	90 x 97	35	2810			
90 "	90 x 58	40	3800	90 x 97	35	3200			
100 μF	90 x 58	40	4300	90 x 97	35	3550			

\* AC voltage:  $f \leq 1000 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + \text{UDC} \leq U_r$

Capacitance	1000 VDC/450 VAC*			1200 VDC/500 VAC*			1500 VDC/550 VAC*		
	W x L mm	du/dt V/μsec	I <sub>max.</sub> A	W x L mm	du/dt V/μsec	I <sub>max.</sub> A	W x L mm	du/dt V/μsec	I <sub>max.</sub> A
1 μF							60 x 49	400	420
1.5 "							60 x 49	400	590
2 "							60 x 49	400	820
2.5 "				60 x 49	300	770	60 x 49	400	1010
3 "	60 x 49	260	790	60 x 49	300	950	60 x 49	400	1220
3.5 "	60 x 49	260	910	60 x 49	300	1070	60 x 49	400	1400
4 "	60 x 49	260	1050	60 x 49	300	1230	70 x 49	400	1630
4.5 "	60 x 49	260	1170	60 x 49	300	1380	70 x 49	400	1800
5 "	60 x 49	260	1310	60 x 49	300	1570	70 x 49	400	2010
6 "	60 x 49	260	1550	70 x 49	300	1840	80 x 49	400	2390
8 "	70 x 49	260	2080	70 x 49	300	2470	90 x 49	400	3210
10 μF	70 x 49	260	2600	80 x 49	300	3080	90 x 58	320	3210
15 "	90 x 49	260	3920	90 x 58	230	3550	90 x 97	180	2690
20 "	90 x 58	200	4300	90 x 97	130	2690	90 x 97	180	3600
25 "	90 x 97	120	3050	90 x 97	130	3370			
30 "	90 x 97	120	3580	90 x 97	130	4110			
40 "	90 x 97	120	4770						

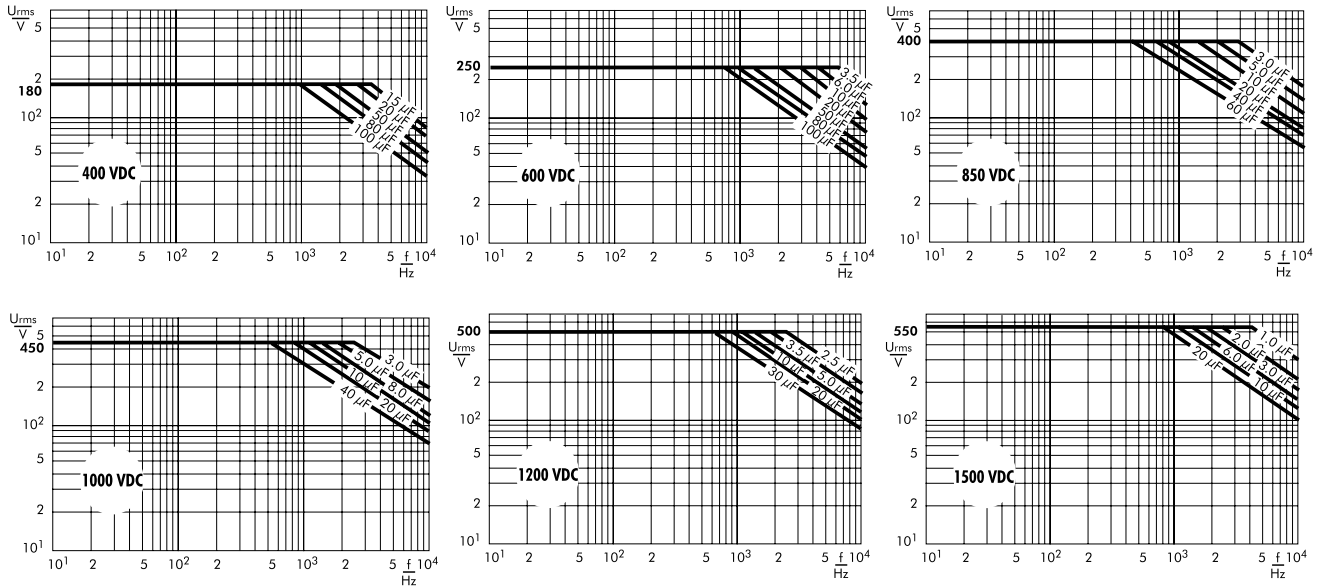
\* AC voltage:  $f \leq 1000 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + \text{UDC} \leq U_r$

Ionisation inception level in isolated cases may be lower than admissible rated AC voltage.

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## Continuation

Permissible AC voltage in relation to frequency at 20° C internal temperature rise (general guide).



Permissible AC current in relation to frequency at 20° C internal temperature rise (general guide).

