

## 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

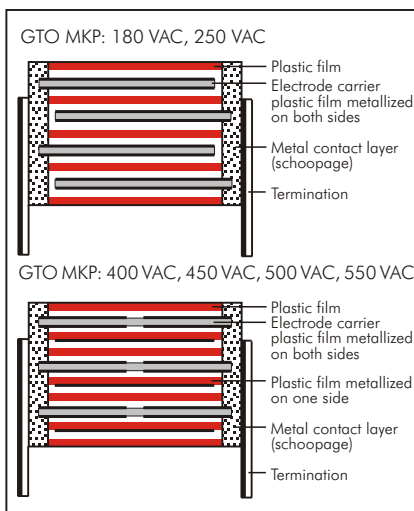
#### Dielectric:

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  $\mu\text{F}$  to 100  $\mu\text{F}$

#### 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:

Case size W x L in mm	Specific dissipation in Watts per K above the ambient temperature
60 x 49	0.186
70 x 49	0.231
80 x 49	0.280
90 x 49	0.333
90 x 58	0.364
90 x 97	0.501

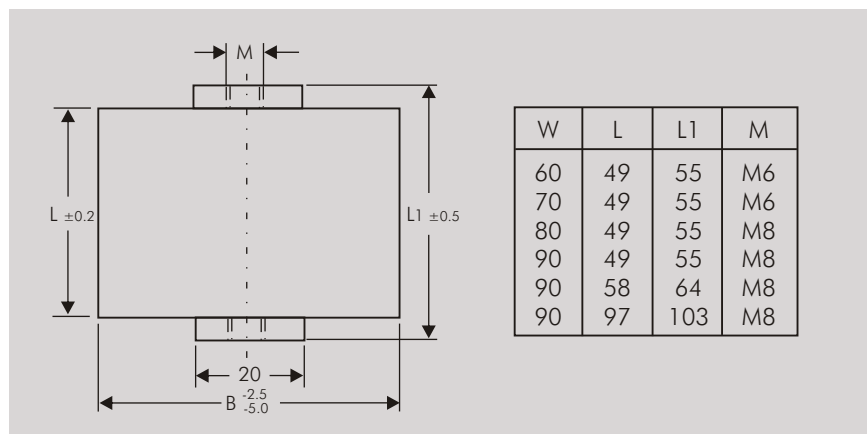
### Packing

Transportation-safe packing in cardboard boxes.

#### Packing units

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

For further details and graphs please refer to Technical Information.



## 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									
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						

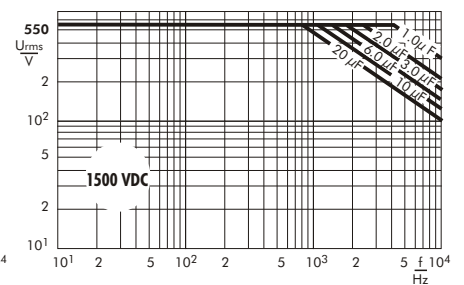
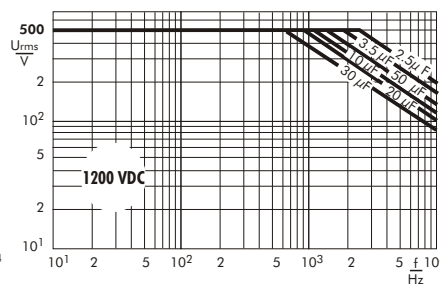
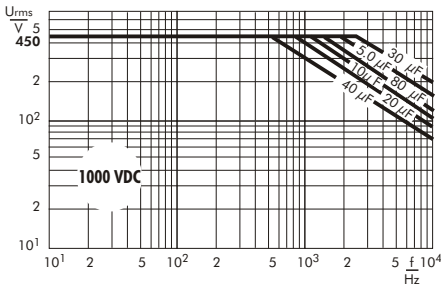
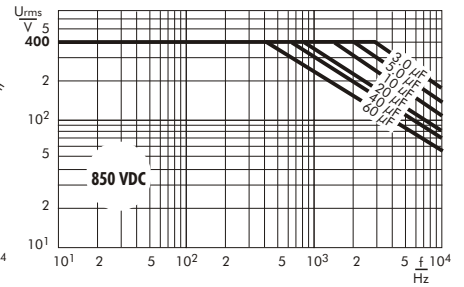
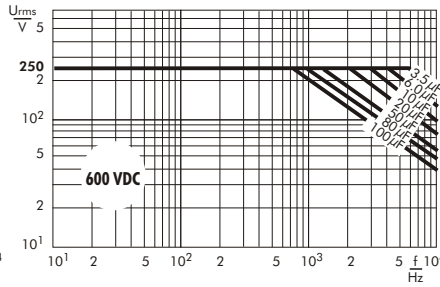
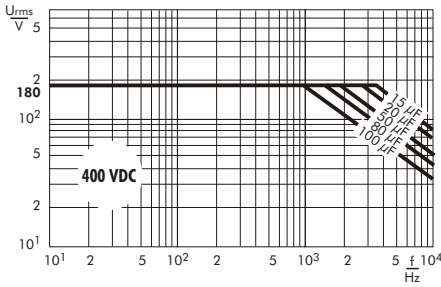
\* AC voltage:  $f \leq 1000 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + \text{UDC} \leq U_r$

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

