



# FILM CAPACITORS FOR DC APPLICATIONS

MKT 1820



## Metallized Polyester Film Capacitor

Automotive Grade

### KEY BENEFITS

- Wide capacitance range: 1000 pF to 15  $\mu$ F
- Wide voltage range: 63  $V_{DC}$  to 1000  $V_{DC}$
- Small sizes in lead spacings: 10 mm to 37.5 mm
- Operating temperature range: - 55 °C to + 125 °C; 150 °C possible for a short time
- Excellent self-healing properties
- High reliability
- RoHS-compliant
- Automotive grade AEC-Q200 approved

### APPLICATIONS

- High-end industrial
- Automotive
  - Motor management
  - Filter applications
  - Fuel injection
  - Generators
  - Electronic power steering (EPS)



# DC Film Capacitors MKT Radial Potted Type

## FEATURES

- AEC-Q200 qualified
- 10 mm to 27.5 mm lead pitch
- Supplied loose in box, taped on reel and ammo pack
- Compliant to RoHS directive 2002/95/EC
- Find more about Vishay's Automotive Grade product requirements at [www.vishay.com/applications](http://www.vishay.com/applications)



## ENCAPSULATION

Plastic case, epoxy resin sealed, flame retardant UL-class 94 V-0

## CLIMATIC TESTING CLASS ACC. TO

IEC 60068-1  
55/125/56

## CAPACITANCE RANGE (E12 SERIES)

1000 pF to 15  $\mu$ F

## CAPACITANCE TOLERANCE

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

## LEADS

Timed wire

## MAXIMUM APPLICATION TEMPERATURE

125 °C

## MAXIMUM OPERATING TEMPERATURE FOR

### LIMITED TIME

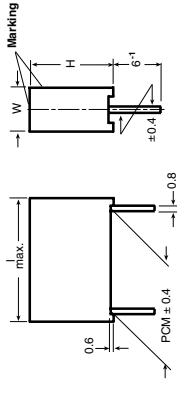
150 °C at 0.3 U<sub>R</sub> for maximum 200 h

## RELIABILITY

Operational life > 300 000 h (40 °C/0.5 x U<sub>R</sub>)  
Failure rate < 2 FIT (40 °C/0.5 x U<sub>R</sub>)

## DETAIL SPECIFICATION

For detailed data and test requirements contact:  
[dc-film@vishay.com](mailto:dc-film@vishay.com)



Dimensions in millimeters

## APPLICATIONS

Blocking, bypassing, filtering, timing, coupling and decoupling circuits, interference suppression in low voltage applications, High temperature operations, Automotive applications

## REFERENCE STANDARDS

IEC 60384-2

## MARKING

C-value; tolerance; rated voltage; manufacturer's type; code for dielectric material; manufacturer location; manufacturer's logo; year and week

## DIELECTRIC

Polyester film

## ELECTRODES

Metalized

## CONSTRUCTION

Mono and series construction

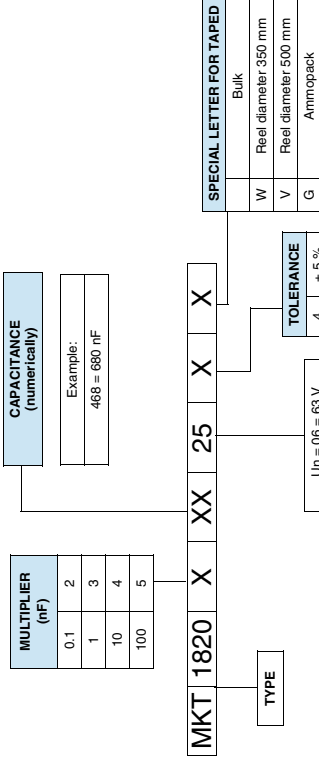
## RATED VOLTAGE

63 V<sub>DC</sub>, 100 V<sub>DC</sub>, 250 V<sub>DC</sub>, 400 V<sub>DC</sub>, 630 V<sub>DC</sub>, 1000 V<sub>DC</sub>

## RATED VOLTAGE

40 V<sub>AC</sub>, 63 V<sub>AC</sub>, 160 V<sub>AC</sub>, 200 V<sub>AC</sub>, 220 V<sub>AC</sub>

## COMPOSITION OF CATALOG NUMBER



TOLERANCE	VALUE
4	$\pm 5\%$
5	$\pm 10\%$
6	$\pm 20\%$

U <sub>n</sub> = 06 = 63 V
U <sub>n</sub> = 01 = 100 V
U <sub>n</sub> = 25 = 250 V
U <sub>n</sub> = 40 = 400 V
U <sub>n</sub> = 63 = 630 V
U <sub>n</sub> = 10 = 1000 V

## Note

• For detailed tape specifications refer to "Packaging Information" [www.vishay.com/docs/28139](http://www.vishay.com/docs/28139) or end of catalog

## SPECIFIC REFERENCE DATA

DESCRIPTION	VALUE
Tangent of loss angle:	at 1 kHz
C $\leq 0.1 \mu$ F	80 x 10 <sup>-4</sup>
0.1 $\mu$ F < C $\leq 1.0 \mu$ F	80 x 10 <sup>-4</sup>
C $\geq 1.0 \mu$ F	100 x 10 <sup>-4</sup>
Pitch (mm)	Maximum pulse rise time (dU/dt) <sub>R</sub> [V/ $\mu$ s]
63 V <sub>DC</sub>	100 V <sub>DC</sub>
10	250 V <sub>DC</sub>
15	400 V <sub>DC</sub>
22.5	630 V <sub>DC</sub>
27.5	1000 V <sub>DC</sub>
If the maximum pulse voltage is less than the rated voltage higher dU/dt values can be permitted.	
R between leads, for C $\leq 0.33 \mu$ F and U <sub>R</sub> $\leq 100$ V	> 15 000 M $\Omega$
R between leads, for C > 0.33 $\mu$ F and U <sub>R</sub> > 100 V	> 30 000 M $\Omega$
RC between leads, for C > 0.33 $\mu$ F and U <sub>R</sub> $\leq 100$ V	> 5000 s
RC between leads, for C > 0.33 $\mu$ F and U <sub>R</sub> > 100 V	> 10 000 s
R between leads and case, 100 V; (foil method)	> 30 000 M $\Omega$
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	1.6 x U <sub>Reg</sub> -1 min
Withstanding (DC) leads and case	2 x U <sub>Reg</sub> -1 min
Maximum application temperature	125 °C

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For technical questions, contact [dc-film@vishay.com](mailto:dc-film@vishay.com)