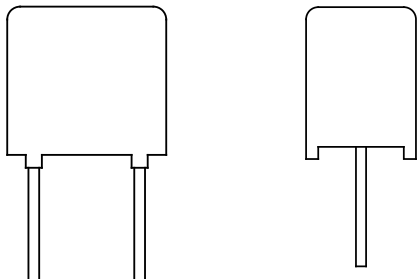




## Metallized Polypropylene Film Capacitor Radial AC and Pulse Capacitor



### FEATURES

- Mounting: radial
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### APPLICATIONS

Oscillator, timing, and LC/RC filter circuits, high frequency coupling / decoupling, sample and hold circuits.

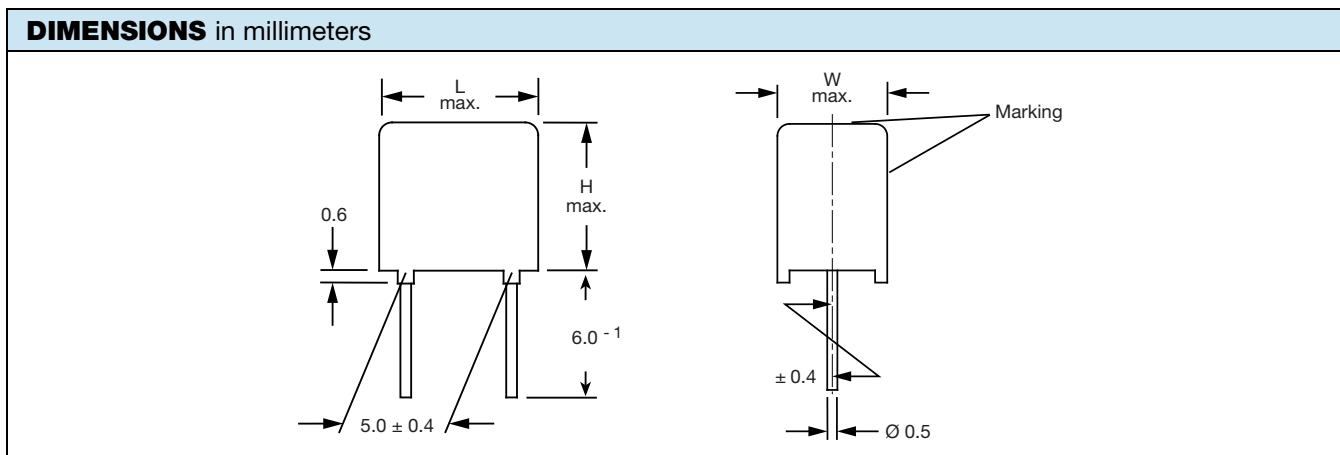


**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

QUICK REFERENCE DATA		
Capacitance range	0.01 $\mu$ F to 0.1 $\mu$ F	
Capacitance tolerance	$\pm 10\%$ (K); $\pm 5\%$ (J); $\pm 2.5\%$ (H); $\pm 1\%$ (F)	
Climatic testing class according to IEC 60068	55/100/56	
Dielectric	Polypropylene film	
Electrodes	Vacuum deposited aluminum	
Construction	Extended metallized film (refer to general information)	
Coating	Flame retardant plastic case (UL-class 94 V-0), epoxy resin sealed	
Leads	Tinned wire	
Marking	Manufacturer's logo, type, C-value, rated voltage, tolerance, date of manufacture	
Operating temperature range	-55 °C to +100 °C	
Capacitance drift	Up to +40 °C, < 0.5 % for a period of two years	
Rated DC voltages ( $U_R$ )	160 $V_{DC}$	
Permissible AC voltages (RMS) up to 60 Hz	100 $V_{AC}$	
Test voltage (electrode/electrode)	1.6 x $U_R$ for 2 s	
Insulation resistance	Measured at 100 $V_{DC}$ after one minute 100 000 M $\Omega$ minimum value	
Temperature coefficient	-250 °C x 10 <sup>-6</sup> /°C (typical value)	
Maximum pulse rise time	$dV/dt = 390$ V/ $\mu$ s If the maximum pulse voltage is less than the rated voltage, higher $dV/dt$ values can be permitted.	
Derating for DC and AC category voltage $U_C$	At +85 °C: $U_C = 1.0 U_R$ At +100 °C: $U_C = 0.7 U_R$	
Self inductance	~ 6 nH measured with 2 mm long leads	
Pull test on leads	$\geq 30$ N in direction of leads according to IEC 60068-2-21	
Dielectric absorption	0.05 % (typical value) according to IEC 60384-1	
Reliability	Operational life > 300 000 h Failure rate < 5 FIT (40 °C and 0.5 x $U_R$ )	
Dissipation factor $\tan \delta$	<b>MEASURED AT</b>	<b>C <math>\leq 0.1 \mu</math>F</b>
	1 kHz	0.4 x 10 <sup>-3</sup>
	10 kHz	0.6 x 10 <sup>-3</sup>
	100 kHz	4 x 10 <sup>-3</sup>
Maximum values		

#### Note

- For further details, please refer to the general information available at [www.vishay.com/doc?26033](http://www.vishay.com/doc?26033)



ELECTRICAL DATA					
$U_{RDC}$	VOLTAGE CODE	CAP. ( $\mu F$ )	CAPACITANCE CODE	$V_{AC}$	DIMENSIONS W x H x L (mm)
160	16	0.010	-310	100	5.5 x 7.0 x 7.5
		0.015	-315		5.5 x 7.0 x 7.5
		0.022	-322		5.5 x 7.0 x 7.5
		0.033	-333		7.5 x 9.0 x 7.5
		0.047	-347		7.5 x 9.0 x 7.5
		0.068	-368		7.5 x 9.0 x 7.5
		0.1	-410		9.0 x 11.0 x 7.5

**Note**

- Further C-values upon request

RECOMMENDED PACKAGING					
LETTER CODE	TYPE OF PACKAGING	HEIGHT (H) (mm)	REEL DIAMETER / BOX SIZE (mm)	ORDERING CODE EXAMPLES	PCM 5
D	Ammo	16.5	55 x 210 x 340	MKP1837-322-162-D	X
G	Ammo	18.5	55 x 210 x 340	MKP1837-322-162-G	X
F	Reel	16.5	350	MKP1837-322-162-F	X
W	Reel	18.5	350	MKP1837-322-162-W	X
-	Bulk	-	-	MKP1837-322-162	X

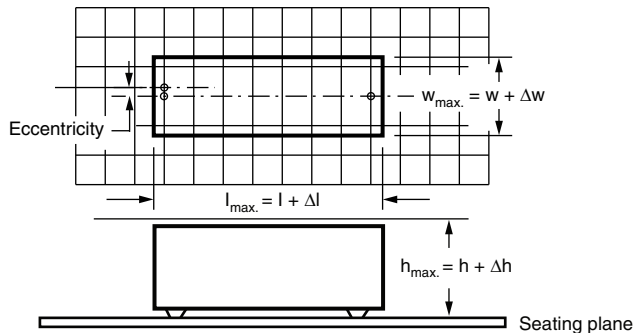
**SPACE REQUIREMENTS FOR PRINTED-CIRCUIT BOARD APPLICATIONS AND DIMENSION TOLERANCES**

For the maximum product dimensions and maximum space requirements for length ( $l_{max.}$ ), width ( $w_{max.}$ ) and height ( $h_{max.}$ ) following tolerances must be taken in account in the envelopment of the components as shown in the drawings below:

- For products with pitch  $\leq 15$  mm,  $\Delta w = \Delta l = 0.3$  mm and  $\Delta h = 0.1$  mm
- For products with  $15$  mm  $<$  pitch  $\leq 27.5$  mm,  $\Delta w = \Delta l = 0.5$  mm and  $\Delta h = 0.1$  mm
- For products with pitch = 37.5 mm,  $\Delta w = \Delta l = 0.7$  mm and  $\Delta h = 0.5$  mm
- For products with pitch = 52.5 mm,  $\Delta w = \Delta l = 1.0$  mm and  $\Delta h = 0.5$  mm



Eccentricity defined as in drawing. The maximum eccentricity is smaller than or equal to the lead diameter of the product concerned.

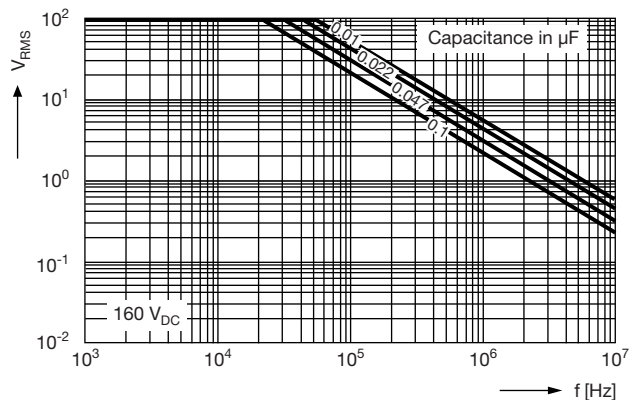


For the minimum product dimensions for length ( $l_{min.}$ ), width ( $w_{min.}$ ), and height ( $h_{min.}$ ) following tolerances of the components are valid:

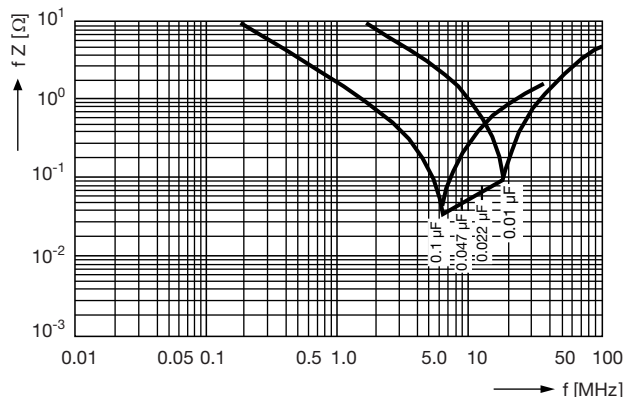
$l_{min.} = l - \Delta l$ ,  $w_{min.} = w - \Delta w$  and  $h_{min.} = h - \Delta h$  following

- For products with pitch  $\leq 10$  mm,  $\Delta l = 0.3$  mm and  $\Delta w = \Delta h = 0.3$  mm
- For products with pitch = 15 mm,  $\Delta l = 0.5$  mm and  $\Delta w = \Delta h = 0.5$  mm
- For products with  $15 \text{ mm} < \text{pitch} \leq 27.5$  mm,  $\Delta l = 1.0$  mm and  $\Delta w = \Delta h = 0.5$  mm
- For products with pitch = 37.5 mm,  $\Delta l = 1.0$  mm and  $\Delta w = \Delta h = 1.0$  mm
- For products with pitch = 52.5 mm,  $\Delta l = 1.5$  mm and  $\Delta w = \Delta h = 1.0$  mm

**CHARACTERISTICS**



Permissible AC Voltage vs. Frequency



Impedance vs. Frequency  $Z = f(f)$   
(Lead Length 2.0 mm)



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.