

Wound MKP capacitors

Construction

- Dielectric: polypropylene
- Wound capacitor technology with internal series connection for $V_R \geq 1250$ Vdc
- Plastic case (UL 94 V-0)
- Epoxy resin sealing

Features

- High pulse strength
- High contact reliability
- Very low inductance

Typical applications

- IGBT circuits

Terminals

- Strap terminals, tinned

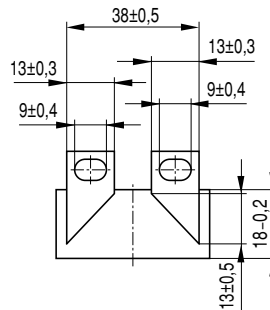
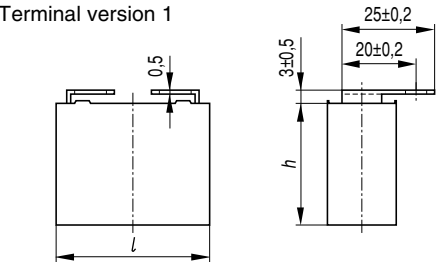
Marking

Manufacturer's logo,
lot number, style (MKP),
rated capacitance (coded),
capacitance tolerance (code letter),
rated dc voltage
date of manufacture (coded)

Delivery mode

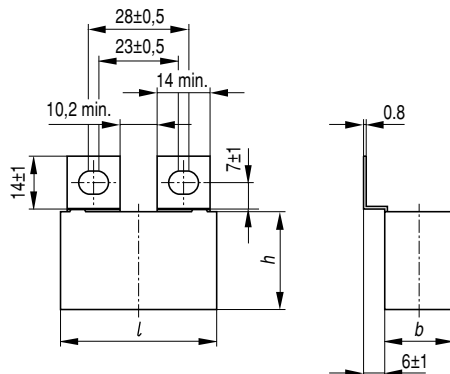
Bulk

Terminal version 1



KMK0530-Z

Terminal version 2



KMK0528

Dimensions in mm

Ordering codes and packing units

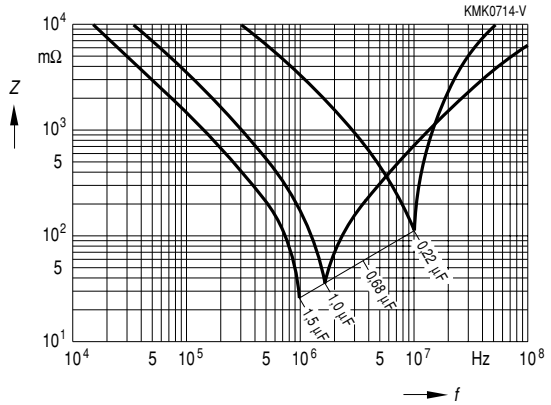
V_R (V_{rms} $f < 60$ kHz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code	Terminal version	Packing units (pcs) Untaped
1000 Vdc (500 Vac)	0,68 μF	16,0 $\times$ 28,5 $\times$ 42,0	B32656-S0684-+503	1	48
	1,0 μF	20,0 $\times$ 39,5 $\times$ 42,0	B32656-S0105-+502	1	24
	1,0 μF	31,0 $\times$ 26,5 $\times$ 42,0	B32656-S0105-+500	2	32
	1,5 μF	31,0 $\times$ 26,5 $\times$ 42,0	B32656-S0155-+501	2	32
1250 Vdc (500 Vac)	0,22 μF	14,0 $\times$ 25,0 $\times$ 42,0	B32656-S7224-+504	1	60
	1,0 μF	28,0 $\times$ 37,0 $\times$ 42,0	B32656-S7105-+500	2	27

Capacitance tolerance: $\pm 20\% \hat{= M}$, $\pm 10\% \hat{= K}$, $\pm 5\% \hat{= J}$


Technical data

Climatic category in accordance with IEC 60068-1	55/100/56			
Lower category temperature $T_{\min}$	– 55 °C			
Upper category temperature $T_{\max}$	+ 100 °C			
Damp heat test	56 days/40 °C/93 % relative humidity			
Limit values after damp heat test	Capacitance change $ \Delta C/C $	$\leq 3 \%$		
	Dissipation factor change $\Delta \tan \delta$	$\leq 0,5 \cdot 10^{-3}$ (at 1 kHz)		
		$\leq 1,0 \cdot 10^{-3}$ (at 10 kHz)		
	Insulation resistance R_{is} or time constant $\tau = C_{\text{R}} \cdot R_{\text{is}}$	$\geq 50 \%$ of minimum as-delivered values		
Reliability:				
Reference conditions	0,5 · V_{R} ; 40 °C			
Failure rate	1 · 10 ⁻⁹ /h = 1 fit			
	For a conversion table for other operating conditions and tem- peratures, refer to chapter “Quality assurance”, page 327.			
Service life	200 000 h			
Failure criteria:				
Total failure	Short circuit or open circuit			
Failure due to variation of parameters	Capacitance change $ \Delta C/C $	$> 10 \%$		
	Dissipation factor $\tan \delta$	$> 4 \cdot$ upper limit values		
	Insulation resistance R_{is}	$< 1500 \text{ M}\Omega$ ($C_{\text{R}} \leq 0,33 \text{ }\mu\text{F}$)		
	or time constant $\tau = C_{\text{R}} \cdot R_{\text{is}}$	$< 500 \text{ s}$ ($C_{\text{R}} > 0,33 \text{ }\mu\text{F}$)		
DC test voltage	1,6 · V_{R} , 2 s			
Category voltage V_{C}	$T \leq 85 \text{ }^{\circ}\text{C}$: $V_{\text{C}} = 1,0 \cdot V_{\text{R}}$ or $1,0 \cdot V_{\text{rms}}$			
Operation with Vdc voltage or ac voltage V_{rms} up to 1 kHz	$T = 100 \text{ }^{\circ}\text{C}$: $V_{\text{C}} = 0,7 \cdot V_{\text{R}}$ or $0,7 \cdot V_{\text{rms}}$			
Dissipation factor $\tan \delta$ (in 10 ⁻³) at 20 °C (upper limit values)		$C_{\text{R}} \leq 0,1 \text{ }\mu\text{F}$	$0,1 \text{ }\mu\text{F} < C_{\text{R}} \leq 1 \text{ }\mu\text{F}$	$C_{\text{R}} > 1 \text{ }\mu\text{F}$
	at 1 kHz	–	0,5	0,5
	10 kHz	–	0,8	1,5
	100 kHz	5,0	–	–
Insulation resistance R_{is} or time constant $\tau = C_{\text{R}} \cdot R_{\text{is}}$ at 20 °C, rel. humidity $\leq 65 \%$ (minimum as-delivered values)	$C_{\text{R}} \leq 0,33 \text{ }\mu\text{F}$	$C_{\text{R}} > 0,33 \text{ }\mu\text{F}$		
	100 G Ω	30 000 s		

Impedance Z
versus
frequency f
(typical values)



Pulse handling capability

Maximum permissible voltage change per unit of time for non-sinusoidal voltages (pulse, sawtooth)

V_R	Max. rate of voltage rise V_{pp}/τ in V/ μ s (for $V_{pp} = V_R$)
1000 Vdc	90
1250 Vdc	140

For $V_{pp} < V_R$, the permissible voltage rise rate value V_{pp}/τ may be multiplied by the factor V_R/V_{pp} . Also refer to the calculation example in chapter “General technical information”, page 302.

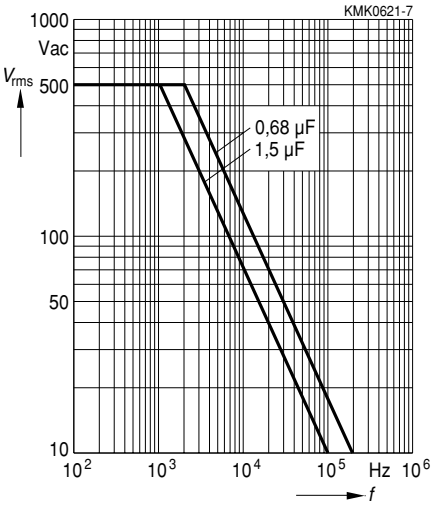
V_R	Pulse characteristic k_0 in V ² / μ s (for $V_{pp} \leq V_R$)
1000 Vdc	180 000
1250 Vdc	350 000



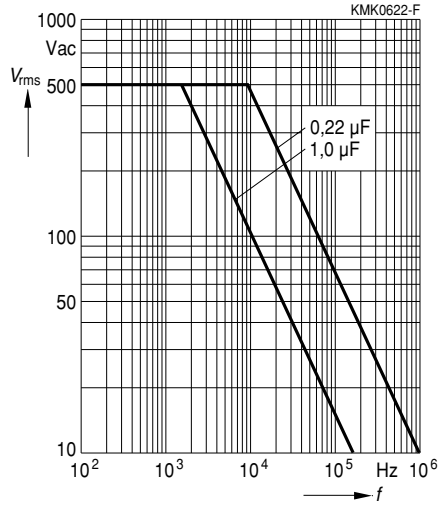
B 32 656-S

Permissible ac voltage V_{rms} versus frequency f

1000 Vdc/ 500 Vac



1250 Vdc/ 500 Vac



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Marketing Kommunikation, Postfach 80 17 09, 81617 München, DEUTSCHLAND

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