

(0603 6.3 V X7R 1uF ±5%)



A 3D perspective diagram of a rectangular block. The length of the top surface is labeled L , the width of the top surface is labeled W , the height of the block is labeled T , and the thickness of the bottom surface is labeled t .

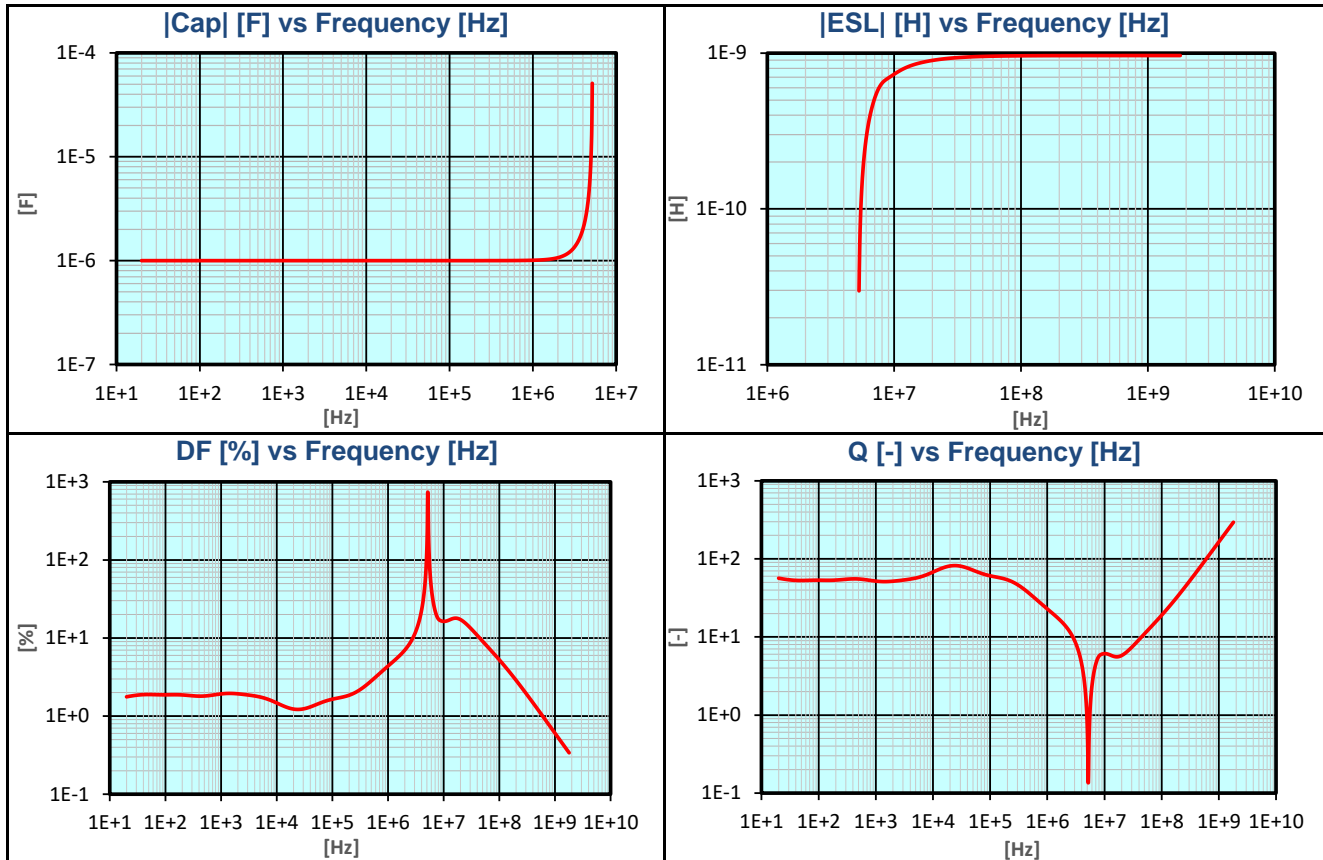
	<i>millimetres</i>	<i>inches</i>
L	1.6 ± 0.15	0.063 ± 0.006
W	0.81 ± 0.15	0.032 ± 0.006
T max.	0.95	0.037
t	0.35 ± 0.15	0.014 ± 0.006

<i>Item</i>	<i>Unit</i>	<i>Spec.</i>	<i>Conditions</i>
Capacitance	uF	0.95 to 1.05	@ 1 kHz, 1 Vrms
DF	%	12.5 max.	@ 1 kHz, 1 Vrms
IR	GΩ	1 min.	@ 6.3 Vdc, t = 120 s
DWV	Vdc	15.75	@ I ≤ 50mA, t ≤ 5 s
Operating Temperature	-55°C to +125°C		
Dielectric	X7R		
Product Level	General		
RoHS Compliant	Yes		
Termination	Sn		

The figure consists of six subplots arranged in a 3x2 grid, illustrating the characteristics of the ESR circuit.

- Top Left: [Z] & ESR [Ohm] vs Frequency [Hz]**
This plot shows the impedance $|Z|$ (red line) and the ESR (blue line) as a function of frequency. The x-axis is logarithmic, ranging from 10^1 to 10^{10} Hz. The y-axis is logarithmic, ranging from 10^{-3} to 10^4 Ohms. The ESR curve shows a minimum at $f_{res} = 5.22 \times 10^6$ Hz, which is approximately equal to 4.5×10^{-3} Ohms. The $|Z|$ curve shows a sharp peak at the same frequency.
- Top Right: S21 [dB] (50 Ohm, shunt) vs Freq. [Hz]**
This plot shows the transmission coefficient S_{21} in dB as a function of frequency. The x-axis is logarithmic, ranging from 10^2 to 10^{10} Hz. The y-axis is linear, ranging from -80 dB to 0 dB. The curve shows a sharp dip at the resonance frequency, reaching approximately -75 dB.
- Middle Left: Phase Angle [°] vs Frequency [Hz]**
This plot shows the phase angle in degrees as a function of frequency. The x-axis is logarithmic, ranging from 10^1 to 10^{10} Hz. The y-axis is linear, ranging from -135° to 135°. The phase angle is constant at -90° for frequencies below 10^6 Hz and then jumps to approximately 90° at the resonance frequency.
- Middle Right: Cap.Change [%] vs DC Voltage [V_{DC}]**
This plot shows the capacitance change in percent as a function of DC voltage. The x-axis is linear, ranging from 0 to 6 V_{DC}. The y-axis is linear, ranging from -30% to 0%. The curve shows a linear decrease in capacitance change as the DC voltage increases, starting from 0% at 0 V_{DC} and reaching approximately -28% at 6 V_{DC}.
- Bottom Left: Cap.Change [%] vs Temperature [°C]**
This plot shows the capacitance change in percent as a function of temperature. The x-axis is linear, ranging from -55°C to 125°C. The y-axis is linear, ranging from -18% to 2%. The curve shows a non-linear relationship, with a maximum capacitance change of approximately 1% occurring around 35°C.
- Bottom Right: Cap.Change [%] vs AC Voltage [V_{AC}]**
This plot shows the capacitance change in percent as a function of AC voltage. The x-axis is linear, ranging from 0 to 1 V_{AC}. The y-axis is linear, ranging from -8% to 0%. The curve shows a linear increase in capacitance change as the AC voltage increases, starting from approximately -7.5% at 0 V_{AC} and reaching 0% at 1 V_{AC}. A legend indicates the data is for 1 kHz.

Electrical Characteristics



KGM15BR70J105JT Datasheet



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Part Number Information

K	G	M	21	C	R5	1E	103	K	T	###
Symbol:	Product Level:	Requirement:	Size:	Thickness:	Dielectric:	Voltage:	Capacitance:	Tolerance:	Packing:	Optional:
KAVX	G General	M Standard	Code: EIA:	See catalog	CG C0G	Multiplier: Base:	(2 significant digits + no of zeros)	A ± 0.05 pF	H	See catalog for optional codes
	A Automotive	U Hi-Q (Special function)	02 01005	for list of codes	R5 X5R	0 1x A 1		B ± 0.1 pF	T	
	(AEC-Q200)	E ESD (Special function)	03 0201		S6 X6S	1 10x N 1.5		C ± 0.25 pF	U	
	M Medical	L Low Inductance reverse Geometry	05 0402		T6 X6T	2 100x D 2	Examples:	D ± 0.5 pF	Y	
		A Low Inductance LGA	15 0603		R7 X7R	3 1000x E 2.5	100 = 10 pF	F ± 1 %	V	
		F Flexitem (Special function/structure)	21 0805		S7 X7S	U 3	102 = 1000 pF	G ± 2 %		
		S Flexisafe (Special function/structure)	31 1206		T7 X7T	V 3.5	224 = 220 nF	J ± 5 %	M	
		G Gold Termination (Special Structure)	32 1210		R8 X8R	G 4	105 = 1 μF	K ± 10 %	L	
		C IDC (Special structure)	42 1808		L8 X8L	H 5		M ± 20 %	N	
		Q Ultra Low ESR	43 1812		G8 X8G	J 6.3			K	
			44 1825		V5 Y5V				S	
			55 2220			Example:				
			56 2225			1E = 25V (10 x 2.5)			X	Waffle pack
			91 3640							

Note:
* See catalog for more information.

NOTICE: Specifications are subject to change without notice. All statements, information and data given herein are believed to be accurate and reliable, but are presented without guarantee or responsibility of any kind, expressed or implied. Specifications are typical and may not apply to all applications.