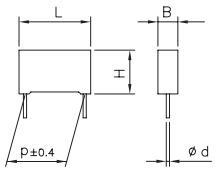
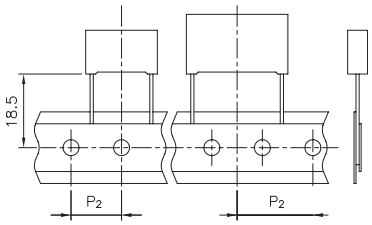
JSP
MKT Series

Loose Taped

Fig.1 Fig. 2





Ød ±0.05	p = 22.5÷27.5	p = 37.5
	0.8	1.0

All dimensions are in mm.

METALLIZED POLYESTER FILM CAPACITOR
D.C. MULTIPURPOSE APPLICATIONS

Typical applications: blocking, coupling, decoupling, by-passing, interference suppression in low voltage applications (i.e.:Automotive)

PRODUCT CODE: **JSP**

Pitch	Box thickness (B)	Maximum dimensions (mm)		
(mm)	(mm)	B max	H max	L max
22.5	All	B +0.2	H +0.1	L +0.3
27.5	All	B +0.2	H +0.1	L +0.3
37.5	All	B +0.3	H +0.1	L +0.3

PRODUCT CODE SYSTEM

The part number, comprising 14 digits, is formed as follows:

1	2	3	4	5	6	7	8	9	10	11	12	13	14
J	S	P										-	

Digit 1 to 3 Series code.

Digit 4 d.c. rated voltage
D = 63Vdc; E = 100Vdc; G = 160Vdc;
I = 250Vdc;

Digit 5 Pitch: N=22.5mm R=27.5mm W=37.5mm

Digit 6 to 9 Digits 7-8-9 indicate the first three digits of Capacitance value and the 6th digit indicates the number of zeros that must be added to optain the rated Capacitance in pF.

Digit 10 to 11 Mechanical version and/or packaging (table 1)

Digit 12 Identifies the dimension and electrical characteristics.

Digit 13 Internal use.

Digit 14 Capacitance Tolerance:
J=±5%; K=±10%; M=±20%;

Table 1

Standard packaging style	Lead length	Taping style			Ordering code
	(mm)	P_2 (mm)	Fig. (No.)	Pitch (mm)	(Digit 10 to 11)
AMMO-PACK		19.05	2	22.5	DQ
REEL Ø 500mm		19.05	2	22.5/27.5	CK
Loose, short leads	4^{+2}				AA
Loose, long leads	$25^{-1/+2}$				50
	$30^{-0/+5}$				40

Note: Ammo-pack is the preferred packaging for taped version.

GENERAL TECHNICAL DATA

Dielectric: polyester film (polyethylene terephthalate).

Plates: aluminium layer deposited by evaporation under vacuum.

Winding: non-inductive type.

Construction: Stacked technology.

Leads: tinned wire.

Protection: plastic case,thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94 V0.

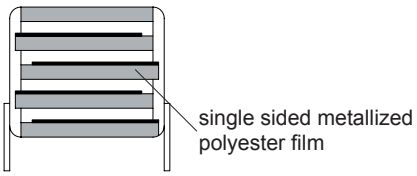
Marking: Manufacturer's logo, series , capacitance, tolerance, D.C. rated voltage, manufacturing date code.

Climatic category: 55/105/56 IEC 60068-1

Operating temperature range: -55°C up to +125°C

Related documents: IEC 60384-2

Winding scheme



JSP

MKT Series

METALLIZED POLYESTER FILM CAPACITOR
D.C. MULTIPURPOSE APPLICATIONS

PRODUCT CODE: **JSP**

Rated Cap.	63Vdc / 40 Vac Std dimensions						Part number
	B	H	L	P	Max dv/dt (V/µs)	Max K_0 (V^2/µs)	
4.7 µF	7.0	16.0	26.5	22.5	25.0	3.15 E3	JSP DN4470--0--
5.6 µF	7.0	16.0	26.5	22.5	25.0	3.15 E3	JSP DN4560--0--
6.8 µF	7.0	16.0	26.5	22.5	25.0	3.15 E3	JSP DN4680--0--
8.2 µF	7.0	16.0	26.5	22.5	25.0	3.15 E3	JSP DN4820--0--
10 µF	7.0	16.0	26.5	22.5	25.0	3.15 E3	JSP DN5100--0--
12 µF	7.0	16.0	26.5	22.5	25.0	3.15 E3	JSP DN5120--0--
15 µF	7.0	16.0	26.5	22.5	25.0	3.15 E3	JSP DN5150--0--
18 µF	8.5	17.0	26.5	22.5	25.0	3.15 E3	JSP DN5180--0--
22 µF	8.5	17.0	26.5	22.5	25.0	3.15 E3	JSP DN5220--0--
27 µF	11.0	20.0	26.5	22.5	25.0	3.15 E3	JSP DN5270--0--
33 µF	11.0	20.0	26.5	22.5	25.0	3.15 E3	JSP DN5330--0--
39 µF	13.0	22.0	26.5	22.5	25.0	3.15 E3	JSP DN5390--0--
47 µF	13.0	22.0	26.5	22.5	25.0	3.15 E3	JSP DN5470--0--
15 µF	9.0	17.0	32.0	27.5	20.0	2.52 E3	JSP DR5150--0--
18 µF	9.0	17.0	32.0	27.5	20.0	2.52 E3	JSP DR5180--0--
22 µF	9.0	17.0	32.0	27.5	20.0	2.52 E3	JSP DR5220--0--
27 µF	9.0	17.0	32.0	27.5	20.0	2.52 E3	JSP DR5270--0--
33 µF	11.0	20.0	32.0	27.5	20.0	2.52 E3	JSP DR5330--0--
39 µF	11.0	20.0	32.0	27.5	20.0	2.52 E3	JSP DR5390--0--
47 µF	13.0	25.0	32.0	27.5	20.0	2.52 E3	JSP DR5470--0--
56 µF	13.0	25.0	32.0	27.5	20.0	2.52 E3	JSP DR5560--0--
68 µF	14.0	28.0	32.0	27.5	20.0	2.52 E3	JSP DR5680--0--
82 µF	14.0	28.0	32.0	27.5	20.0	2.52 E3	JSP DR5820--0--
100 µF	18.0	33.0	32.0	27.5	20.0	2.52 E3	JSP DR6100--0--
120 µF	18.0	33.0	32.0	27.5	20.0	2.52 E3	JSP DR6120--0--
33 µF	11.0	22.0	41.5	37.5	15.0	1.89 E3	JSP DW5330--0--
39 µF	11.0	22.0	41.5	37.5	15.0	1.89 E3	JSP DW5390--0--
47 µF	11.0	22.0	41.5	37.5	15.0	1.89 E3	JSP DW5470--0--
56 µF	11.0	22.0	41.5	37.5	15.0	1.89 E3	JSP DW5560--0--
68 µF	13.0	24.0	41.5	37.5	15.0	1.89 E3	JSP DW5680--0--
82 µF	13.0	24.0	41.5	37.5	15.0	1.89 E3	JSP DW5820--0--
100 µF	16.0	28.5	41.5	37.5	15.0	1.89 E3	JSP DW6100--0--
120 µF	16.0	28.5	41.5	37.5	15.0	1.89 E3	JSP DW6120--0--
150 µF	19.0	32.0	41.5	37.5	15.0	1.89 E3	JSP DW6150--0--
180 µF	19.0	32.0	41.5	37.5	15.0	1.89 E3	JSP DW6180--0--
220 µF	20.0	40.0	41.5	37.5	15.0	1.89 E3	JSP DW6220--0--
270 µF	24.0	44.0	41.5	37.5	15.0	1.89 E3	JSP DW6270--0--
330 µF	24.0	44.0	41.5	37.5	15.0	1.89 E3	JSP DW6330--0--
390 µF	30.0	45.0	41.5	37.5	15.0	1.89 E3	JSP DW6390--0--
470 µF	30.0	45.0	41.5	37.5	15.0	1.89 E3	JSP DW6470--0--

Mechanical version and packaging (Table1)
Internal use
Tolerance: J (±5%); K (±10%);M (±20%)

Rated Cap.	100Vdc / 63 Vac Std dimensions						Part number
	B	H	L	P	Max dv/dt (V/µs)	Max K_0 (V^2/µs)	
3.3 µF	7.0	16.0	26.5	22.5	27.0	5.4 E3	JSP EN4330--0--
3.9 µF	7.0	16.0	26.5	22.5	27.0	5.4 E3	JSP EN4390--0--
4.7 µF	7.0	16.0	26.5	22.5	27.0	5.4 E3	JSP EN4470--0--
5.6 µF	7.0	16.0	26.5	22.5	27.0	5.4 E3	JSP EN4560--0--
6.8 µF	7.0	16.0	26.5	22.5	27.0	5.4 E3	JSP EN4680--0--
8.2 µF	7.0	16.0	26.5	22.5	27.0	5.4 E3	JSP EN4820--0--
10 µF	8.5	17.0	26.5	22.5	27.0	5.4 E3	JSP EN5100--0--
12 µF	8.5	17.0	26.5	22.5	27.0	5.4 E3	JSP EN5120--0--
15 µF	8.5	17.0	26.5	22.5	27.0	5.4 E3	JSP EN5150--0--
18 µF	11.0	20.0	26.5	22.5	27.0	5.4 E3	JSP EN5180--0--
22 µF	11.0	20.0	26.5	22.5	27.0	5.4 E3	JSP EN5220--0--
27 µF	13.0	22.0	26.5	22.5	27.0	5.4 E3	JSP EN5270--0--
33 µF	13.0	22.0	26.5	22.5	27.0	5.4 E3	JSP EN5330--0--
10 µF	9.0	17.0	32.0	27.5	22.0	4.4 E3	JSP ER5100--0--
12 µF	9.0	17.0	32.0	27.5	22.0	4.4 E3	JSP ER5120--0--
15 µF	9.0	17.0	32.0	27.5	22.0	4.4 E3	JSP ER5150--0--
18 µF	9.0	17.0	32.0	27.5	22.0	4.4 E3	JSP ER5180--0--
22 µF	11.0	20.0	32.0	27.5	22.0	4.4 E3	JSP ER5220--0--
27 µF	11.0	20.0	32.0	27.5	22.0	4.4 E3	JSP ER5270--0--
33 µF	13.0	25.0	32.0	27.5	22.0	4.4 E3	JSP ER5330--0--
39 µF	13.0	25.0	32.0	27.5	22.0	4.4 E3	JSP ER5390--0--
47 µF	14.0	28.0	32.0	27.5	22.0	4.4 E3	JSP ER5470--0--
56 µF	14.0	28.0	32.0	27.5	22.0	4.4 E3	JSP ER5560--0--
68 µF	18.0	33.0	32.0	27.5	22.0	4.4 E3	JSP ER5680--0--
82 µF	18.0	33.0	32.0	27.5	22.0	4.4 E3	JSP ER5820--0--
22 µF	11.0	22.0	41.5	37.5	17.0	3.4 E3	JSP EW5220--0--
27 µF	11.0	22.0	41.5	37.5	17.0	3.4 E3	JSP EW5270--0--
33 µF	11.0	22.0	41.5	37.5	17.0	3.4 E3	JSP EW5330--0--
39 µF	11.0	22.0	41.5	37.5	17.0	3.4 E3	JSP EW5390--0--
47 µF	13.0	24.0	41.5	37.5	17.0	3.4 E3	JSP EW5470--0--
56 µF	13.0	24.0	41.5	37.5	17.0	3.4 E3	JSP EW5560--0--
68 µF	16.0	28.5	41.5	37.5	17.0	3.4 E3	JSP EW5680--0--
82 µF	16.0	28.5	41.5	37.5	17.0	3.4 E3	JSP EW5820--0--
100 µF	19.0	32.0	41.5	37.5	17.0	3.4 E3	JSP EW6100--0--
120 µF	19.0	32.0	41.5	37.5	17.0	3.4 E3	JSP EW6120--0--
150 µF	20.0	40.0	41.5	37.5	17.0	3.4 E3	JSP EW6150--0--
180 µF	24.0	44.0	41.5	37.5	17.0	3.4 E3	JSP EW6180--0--
220 µF	30.0	45.0	41.5	37.5	17.0	3.4 E3	JSP EW6220--0--

Mechanical version and packaging (Table1)
Internal use
Tolerance: J (±5%); K (±10%);M (±20%)

JSP

MKT Series

METALLIZED POLYESTER FILM CAPACITOR
D.C. MULTIPURPOSE APPLICATIONS

PRODUCT CODE: **JSP**

Rated Cap.	160Vdc / 90 Vac Std dimensions						Part number
	B	H	L	P	Max dv/dt (V/µs)	Max K_0 (V^2/µs)	
2.2 µF	7.0	16.0	26.5	22.5	35.0	11.2 E3	JSP GN4220--0--
2.7 µF	7.0	16.0	26.5	22.5	35.0	11.2 E3	JSP GN4270--0--
3.3 µF	7.0	16.0	26.5	22.5	35.0	11.2 E3	JSP GN4330--0--
3.9 µF	7.0	16.0	26.5	22.5	35.0	11.2 E3	JSP GN4390--0--
4.7 µF	8.5	17.0	26.5	22.5	35.0	11.2 E3	JSP GN4470--0--
5.6 µF	8.5	17.0	26.5	22.5	35.0	11.2 E3	JSP GN4560--0--
6.8 µF	11.0	20.0	26.5	22.5	35.0	11.2 E3	JSP GN4680--0--
8.2 µF	11.0	20.0	26.5	22.5	35.0	11.2 E3	JSP GN4820--0--
10 µF	13.0	22.0	26.5	22.5	35.0	11.2 E3	JSP GN5100--0--
12 µF	13.0	22.0	26.5	22.5	35.0	11.2 E3	JSP GN5120--0--
3.3 µF	9.0	17.0	32.0	27.5	30.0	9.6 E3	JSP GR4330--0--
3.9 µF	9.0	17.0	32.0	27.5	30.0	9.6 E3	JSP GR4390--0--
4.7 µF	9.0	17.0	32.0	27.5	30.0	9.6 E3	JSP GR4470--0--
5.6 µF	9.0	17.0	32.0	27.5	30.0	9.6 E3	JSP GR4560--0--
6.8 µF	9.0	17.0	32.0	27.5	30.0	9.6 E3	JSP GR4680--0--
8.2 µF	11.0	20.0	32.0	27.5	30.0	9.6 E3	JSP GR4820--0--
10 µF	11.0	20.0	32.0	27.5	30.0	9.6 E3	JSP GR5100--0--
12 µF	13.0	25.0	32.0	27.5	30.0	9.6 E3	JSP GR5120--0--
15 µF	13.0	25.0	32.0	27.5	30.0	9.6 E3	JSP GR5150--0--
18 µF	14.0	28.0	32.0	27.5	30.0	9.6 E3	JSP GR5180--0--
22 µF	18.0	33.0	32.0	27.5	30.0	9.6 E3	JSP GR5220--0--
27 µF	18.0	33.0	32.0	27.5	30.0	9.6 E3	JSP GR5270--0--
10 µF	11.0	22.0	41.5	37.5	25.0	8.0 E3	JSP GW5100--0--
12 µF	11.0	22.0	41.5	37.5	25.0	8.0 E3	JSP GW5120--0--
15 µF	11.0	22.0	41.5	37.5	25.0	8.0 E3	JSP GW5150--0--
18 µF	13.0	24.0	41.5	37.5	25.0	8.0 E3	JSP GW5180--0--
22 µF	16.0	28.5	41.5	37.5	25.0	8.0 E3	JSP GW5220--0--
27 µF	16.0	28.5	41.5	37.5	25.0	8.0 E3	JSP GW5270--0--
33 µF	19.0	32.0	41.5	37.5	25.0	8.0 E3	JSP GW5330--0--
39 µF	19.0	32.0	41.5	37.5	25.0	8.0 E3	JSP GW5390--0--
47 µF	20.0	40.0	41.5	37.5	25.0	8.0 E3	JSP GW5470--0--
56 µF	20.0	40.0	41.5	37.5	25.0	8.0 E3	JSP GW5560--0--
68 µF	24.0	44.0	41.5	37.5	25.0	8.0 E3	JSP GW5680--0--
82 µF	24.0	44.0	41.5	37.5	25.0	8.0 E3	JSP GW5820--0--
100 µF	30.0	45.0	41.5	37.5	25.0	8.0 E3	JSP GW6100--0--

Mechanical version and packaging (Table1)
Internal use
Tolerance: J (±5%); K (±10%);M (±20%)

Rated Cap.	250Vdc / 160 Vac Std dimensions						Part number
	B	H	L	P	Max dv/dt (V/µs)	Max K_0 (V^2/µs)	
1 µF	7.0	16.0	26.5	22.5	40.0	20.0 E3	JSP IN4100--0--
1.2 µF	7.0	16.0	26.5	22.5	40.0	20.0 E3	JSP IN4120--0--
1.5 µF	7.0	16.0	26.5	22.5	40.0	20.0 E3	JSP IN4150--0--
1.8 µF	7.0	16.0	26.5	22.5	40.0	20.0 E3	JSP IN4180--0--
2.2 µF	7.0	16.0	26.5	22.5	40.0	20.0 E3	JSP IN4220--0--
2.7 µF	8.5	17.0	26.5	22.5	40.0	20.0 E3	JSP IN4270--0--
3.3 µF	8.5	17.0	26.5	22.5	40.0	20.0 E3	JSP IN4330--0--
3.9 µF	11.0	20.0	26.5	22.5	40.0	20.0 E3	JSP IN4390--0--
4.7 µF	11.0	20.0	26.5	22.5	40.0	20.0 E3	JSP IN4470--0--
5.6 µF	13.0	22.0	26.5	22.5	40.0	20.0 E3	JSP IN4560--0--
6.8 µF	13.0	22.0	26.5	22.5	40.0	20.0 E3	JSP IN4680--0--
2.2 µF	9.0	17.0	32.0	27.5	35.0	17.5 E3	JSP IR4220--0--
2.7 µF	9.0	17.0	32.0	27.5	35.0	17.5 E3	JSP IR4270--0--
3.3 µF	9.0	17.0	32.0	27.5	35.0	17.5 E3	JSP IR4330--0--
3.9 µF	9.0	17.0	32.0	27.5	35.0	17.5 E3	JSP IR4390--0--
4.7 µF	11.0	20.0	32.0	27.5	35.0	17.5 E3	JSP IR4470--0--
5.6 µF	11.0	20.0	32.0	27.5	35.0	17.5 E3	JSP IR4560--0--
6.8 µF	13.0	25.0	32.0	27.5	35.0	17.5 E3	JSP IR4680--0--
8.2 µF	13.0	25.0	32.0	27.5	35.0	17.5 E3	JSP IR4820--0--
10 µF	14.0	28.0	32.0	27.5	35.0	17.5 E3	JSP IR5100--0--
12 µF	18.0	33.0	32.0	27.5	35.0	17.5 E3	JSP IR5120--0--
15 µF	18.0	33.0	32.0	27.5	35.0	17.5 E3	JSP IR5150--0--
18 µF	18.0	33.0	32.0	27.5	35.0	17.5 E3	JSP IR5180--0--
5.6 µF	11.0	22.0	41.5	37.5	30.0	15.0 E3	JSP IW4560--0--
6.8 µF	11.0	22.0	41.5	37.5	30.0	15.0 E3	JSP IW4680--0--
8.2 µF	11.0	22.0	41.5	37.5	30.0	15.0 E3	JSP IW4820--0--
10 µF	13.0	24.0	41.5	37.5	30.0	15.0 E3	JSP IW5100--0--
12 µF	13.0	24.0	41.5	37.5	30.0	15.0 E3	JSP IW5120--0--
15 µF	16.0	28.5	41.5	37.5	30.0	15.0 E3	JSP IW5150--0--
18 µF	16.0	28.5	41.5	37.5	30.0	15.0 E3	JSP IW5180--0--
22 µF	19.0	32.0	41.5	37.5	30.0	15.0 E3	JSP IW5220--0--
27 µF	19.0	32.0	41.5	37.5	30.0	15.0 E3	JSP IW5270--0--
33 µF	20.0	40.0	41.5	37.5	30.0	15.0 E3	JSP IW5330--0--
39 µF	24.0	44.0	41.5	37.5	30.0	15.0 E3	JSP IW5390--0--
47 µF	30.0	45.0	41.5	37.5	30.0	15.0 E3	JSP IW5470--0--
56 µF	30.0	45.0	41.5	37.5	30.0	15.0 E3	JSP IW5560--0--

Mechanical version and packaging (Table1)
Internal use
Tolerance: J (±5%); K (±10%);M (±20%)

JSP
MKT Series

METALLIZED POLYESTER FILM CAPACITOR
D.C. MULTIPURPOSE APPLICATIONS
PRODUCT CODE: **JSP**

ELECTRICAL CHARACTERISTICS

Rated voltage (V_R): 63Vdc, 100Vdc, 160Vdc, 250Vdc, 400Vdc.

Rated temperature: +85°C.

Temperature derated voltage: for temperatures between +85°C and the upper operating temperature a decreasing factor of 1.25% per degree °C on the rated V_R (d.c. and a.c.) has to be applied.

Capacitance range: 0.33µF to 470µF.

Capacitance values: E12 series (IEC 60063 Norm).

Capacitance tolerance (measured at 1kHz): ±5%; ±10%; ±20%

Total self-indurance (L): (lead length ~ 2 mm)

Pitch (mm)	22.5	27.5	37.5
L(nH)	18	18	22

Dissipation factor (DF):

tgδx10^{-4} at +25°C ±5°C

kHz	C<0.1 µF	C>0.1 µF
1	≤100	≤100
10	≤150	-

.

Insulation Resistance:

Test conditions
Temperature: +25°C±5°C
Voltage charge time: 1 min
Voltage charge: 50Vdc for V_R< 100Vdc
100Vdc for V_R ≥ 100Vdc

Performance
For V_R ≤ 100 Vdc
≥ 3750 MΩ for C≤0.33 µF (50000 MΩ)*
≥ 1250 s for C>0.33 µF (5000 s)*
For V_R > 100 Vdc
≥30000 MΩ for C≤0.33 µF (50000 MΩ)*
≥10000 s for C>0.33 µF (17000 s)*
*Typical value.

Test voltage between terminations:
1.6 x V_R for 2s at +25°C ±5°C

TEST METHOD AND PERFORMANCE

Damp heat, steady state:

Test conditions 1
Temperature: +40°C±2°C
Relative humidity(RH): 93%±2°C
Test duration: 56 days

Performance
Capacitance change |ΔC/C|: ≤ 5%
DF change (Δtgδ): ≤ 50x10^{-4} at 1kHz
Insulation resistance: ≥ 50% of limit

Endurance:

Test conditions 1 st
Temperature: 105°C ±2°C
Test duration: 2000 h
Voltage applied: 1.25xV_R

Test conditions 2 st
Temperature: 125°C ±2°C
Test duration: 1000 h
Voltage applied: 1.25xV_R

Performance
Capacitance change |ΔC/C|: ≤ 5%
DF change (Δtgδ): ≤ 50x10^{-4} at 10kHz for C≤1 µF
≤ 30x10^{-4} at 1kHz for C>1 µF
Insulation resistance: ≥ 50% of initial limit

Resistance to soldering heat:

Test conditions
Solder bath temperature: +260°C ±5°C
Dipping time (with heat screen): 10 s ± 1 s

Performance
Capacitance change |ΔC/C|: ≤ 2%
DF change (Δtgδ): ≤ 50x10^{-4} at 10kHz for C≤1 µF
≤ 30x10^{-4} at 1kHz for C>1 µF
Insulation resistance: ≥ initial limit

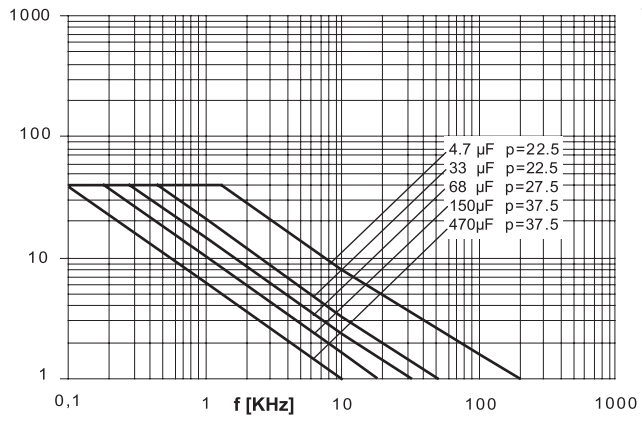
Long term stability (after two years)**:**

Storage: standard environmental conditions (see page 12 of DC film capacity catalogue).

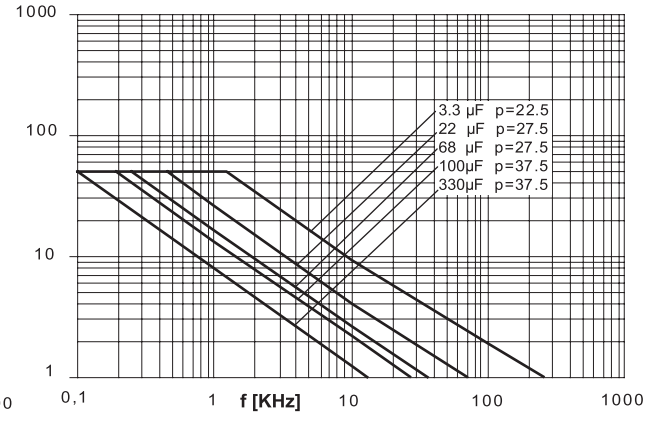
Performance
Capacitance change |ΔC/C|: ≤ 2%

MAX. VOLTAGE (Vr.m.s.) VERSUS FREQUENCY (sinusoidal wave-form / T_h = 80°C)

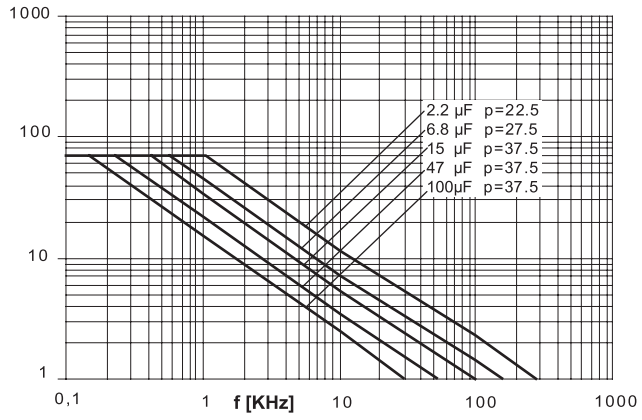
63Vdc / 40Vac



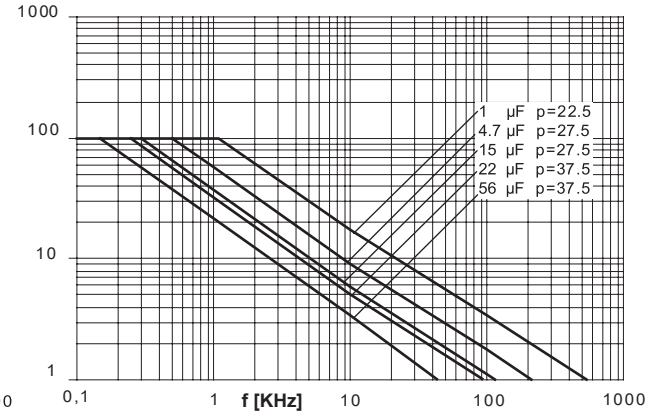
100Vdc / 50Vac



160Vdc / 70Vac



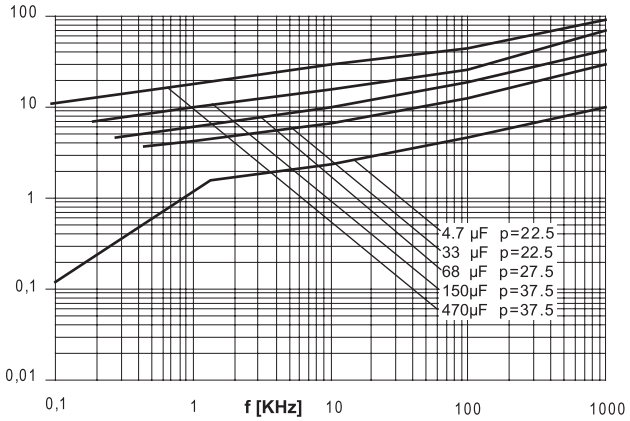
250Vdc / 100Vac



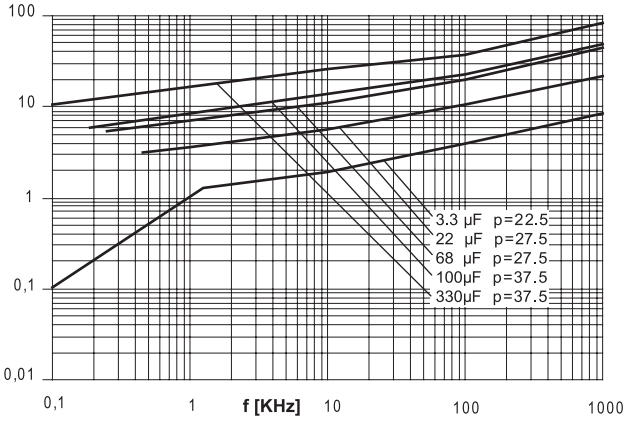
Note: *Th= max. ambient temperature surrounding the capacitor or hottest contact point (i.e. tracks), whichever is higher, in the worst operation conditions in °C

MAX. CURRENT (Ir.m.s.) VERSUS FREQUENCY (sinusoidal wave-form / T_h = 80°C)

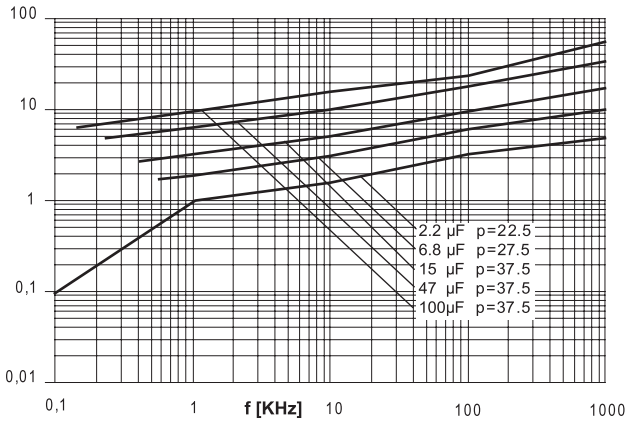
Irms [A] **63Vdc / 40Vac**



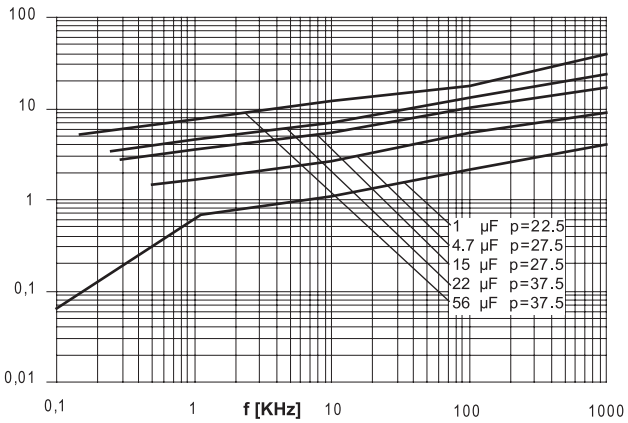
Irms [A] **100Vdc / 50Vac**



Irms [A] **160Vdc / 70Vac**



Irms [A] **250Vdc / 100Vac**



Note: *Th= max. ambient temperature surrounding the capacitor or hottest contact point (i.e. tracks), whichever is higher, in the worst operation conditions in °C