



## Low Dissipation Factor Disc Capacitors

### FEATURES

- Ideal for High Voltage Switching to 100 kHz
- Low DF Minimizes Self Heating at High Frequencies.
- Application Voltages: 500, 1000 and 1500 Vac.
- Economical Alternative to Film Capacitors.

The 1DFO, 2DFO, and 3DFO Series are designed to operate up to 500, 1000, and 1500 V<sub>RMS</sub>, respectively. Their low dissipation factor (DF) and stable temperature characteristics are well suited for operation at elevated frequency. Operating limits are governed by a suggested 30°C maximum case temperature rise as controlled by applied voltage and frequency dependent current. Power-rating charts covering the entire series provide operating guidelines for higher frequency applications.

### 1DFO SERIES - LOW DISSIPATION FACTOR

#### 561C Series

Application Range: 500 Vrms; 1000 Vdc

Value pF	Tol.	Catalog Number	Temp Char.	D Diameter (in / mm)	T Thickness (in / mm)	LS Lead Space (in / mm)
10	J	1DF0Q10	NP0	.250 (6.4)	.156 (4.0)	.250 (6.4)
12	J	1DF0Q12	NP0	.250 (6.4)	.156 (4.0)	.250 (6.4)
15	J	1DF0Q15	N1500	.250 (6.4)	.156 (4.0)	.250 (6.4)
18	J	1DF0Q18	N1500	.250 (6.4)	.156 (4.0)	.250 (6.4)
22	J	1DF0Q22	N1500	.250 (6.4)	.156 (4.0)	.250 (6.4)
27	J	1DF0Q27	N2200	.250 (6.4)	.156 (4.0)	.250 (6.4)
33	J	1DF0Q33	N2200	.250 (6.4)	.156 (4.0)	.250 (6.4)
39	J	1DF0Q39	N2200	.250 (6.4)	.156 (4.0)	.250 (6.4)
47	J	1DF0Q47	N1500	.250 (6.4)	.156 (4.0)	.250 (6.4)
56	J	1DF0Q56	N1500	.250 (6.4)	.156 (4.0)	.250 (6.4)
68	J	1DF0Q68	N1500	.250 (6.4)	.156 (4.0)	.250 (6.4)
82	J	1DF0Q82	N1500	.250 (6.4)	.156 (4.0)	.250 (6.4)
100	K	1DF0T10	N2000	.250 (6.4)	.156 (4.0)	.250 (6.4)
120	K	1DF0T12	N2000	.250 (6.4)	.156 (4.0)	.250 (6.4)
150	K	1DF0T15	N2000	.250 (6.4)	.156 (4.0)	.250 (6.4)
180	K	1DF0T18	N2000	.250 (6.4)	.156 (4.0)	.250 (6.4)
220	K	1DF0T22	N2500	.250 (6.4)	.156 (4.0)	.250 (6.4)
270	K	1DF0T27	N2500	.250 (6.4)	.156 (4.0)	.250 (6.4)
330	K	1DF0T33	N2800	.250 (6.4)	.156 (4.0)	.250 (6.4)
390	K	1DF0T39	N2800	.250 (6.4)	.156 (4.0)	.250 (6.4)
470	K	1DF0T47	N2800	.290 (7.4)	.156 (4.0)	.250 (6.4)
560	K	1DF0T56	N2800	.290 (7.4)	.156 (4.0)	.250 (6.4)
680	K	1DF0T68	N2800	.290 (7.4)	.156 (4.0)	.250 (6.4)
820	K	1DF0T82	N2800	.290 (7.4)	.156 (4.0)	.250 (6.4)
1000	K	1DF0D10	N2800	.370 (9.4)	.156 (4.0)	.250 (6.4)
1200	K	1DF0D12	N2800	.370 (9.4)	.156 (4.0)	.250 (6.4)
1500	K	1DF0D15	N2800	.405 (10.3)	.156 (4.0)	.250 (6.4)
1800	K	1DF0D18	N2800	.440 (11.2)	.156 (4.0)	.250 (6.4)
2200	K	1DF0D22	N2800	.460 (11.7)	.156 (4.0)	.250 (6.4)
2300	K	1DF0D23	N2800	.460 (11.7)	.156 (4.0)	.250 (6.4)
2400	K	1DF0D24	N2800	.460 (11.7)	.156 (4.0)	.250 (6.4)
2500	K	1DF0D25	N2800	.460 (11.7)	.156 (4.0)	.250 (6.4)
2700	K	1DF0D27	N2800	.490 (12.5)	.156 (4.0)	.250 (6.4)
3300	K	1DF0D33	N2800	.530 (13.5)	.156 (4.0)	.250 (6.4)
3900	K	1DF0D39	N2800	.560 (14.2)	.156 (4.0)	.375 (9.5)
4700	K	1DF0D47	N2800	.630 (16.0)	.156 (4.0)	.375 (9.5)
5600	K	1DF0D56	N2800	.680 (17.3)	.156 (4.0)	.375 (9.5)
6800	K	1DF0D68	N2800	.760 (19.3)	.156 (4.0)	.375 (9.5)

#### Note 1

Power ratings are based on still air 60°C ambient with additional 30°C rise due to self heating. Thermal effects such as forced air cooling, component encapsulation or other heat-sinking techniques will alter ratings. Actual circuit test is recommended.

#### Note 3

### APPLICATIONS:

- Fluorescent Ballasts
- Industrial Electronic Systems
- Switching Power Supplies
- Snubber Networks

### GENERAL SPECIFICATIONS

Series:	1DFO	2DFO	3DFO
<b>Application Voltage:</b>	500 Vrms 1000 Vdc	1000 Vrms 2000 Vdc	1500 Vrms 3000 Vdc
<b>Dielectric Strength:</b>	1200 Vrms 2500 Vdc	2000 Vrms 4000 Vdc	3000 Vrms 6000 Vdc
<b>Dissipation Factor:</b>	0.1% Maximum at 1 kHz and 25°C		
<b>Maximum Service Temperature:</b>	125°C		
<b>Power Rating:</b>	(Note 1) Limit to 30°C Case Temperature Rise		
<b>Insulation Resistance:</b>	50,000 MΩ Minimum		

### 2DFO SERIES - LOW DISSIPATION FACTOR

#### 564C Series

Application Range: 1000 Vrms; 2000 Vdc

Value pF	Tol.	Catalog Number	Temp Char.	D Diameter (in / mm)	T Thickness (in / mm)	LS Lead Space (in / mm)
10	J	2DF0Q10	NP0	.290 (7.4)	.160 (4.1)	.250 (6.4)
12	J	2DF0Q12	N1500	.290 (7.4)	.170 (4.3)	.250 (6.4)
15	J	2DF0Q15	N2200	.290 (7.4)	.185 (4.7)	.250 (6.4)
18	J	2DF0Q18	N2200	.290 (7.4)	.170 (4.3)	.250 (6.4)
22	J	2DF0Q22	N2200	.290 (7.4)	.170 (4.3)	.250 (6.4)
27	J	2DF0Q27	N1500	.290 (7.4)	.220 (5.6)	.250 (6.4)
33	J	2DF0Q33	N1500	.290 (7.4)	.195 (5.0)	.250 (6.4)
39	J	2DF0Q39	N1500	.290 (7.4)	.180 (4.6)	.250 (6.4)
47	J	2DF0Q47	N1500	.290 (7.4)	.170 (4.3)	.250 (6.4)
56	J	2DF0Q56	N2000	.290 (7.4)	.210 (5.3)	.250 (6.4)
68	J	2DF0Q68	N2000	.290 (7.4)	.190 (4.8)	.250 (6.4)
82	J	2DF0Q82	N2000	.290 (7.4)	.175 (4.5)	.250 (6.4)
100	K	2DF0T10	N2000	.290 (7.4)	.170 (4.3)	.250 (6.4)
120	K	2DF0T12	N2500	.290 (7.4)	.185 (4.7)	.250 (6.4)
150	K	2DF0T15	N2500	.290 (7.4)	.170 (4.3)	.250 (6.4)
180	K	2DF0T18	N2800	.290 (7.4)	.185 (4.7)	.250 (6.4)
220	K	2DF0T22	N2800	.290 (7.4)	.170 (4.3)	.250 (6.4)
270	K	2DF0T27	N2500	.330 (8.4)	.170 (4.3)	.250 (6.4)
330	K	2DF0T33	N2800	.330 (8.4)	.185 (4.7)	.250 (6.4)
390	K	2DF0T39	N2800	.330 (8.4)	.175 (4.5)	.250 (6.4)
470	K	2DF0T47	N2500	400 (10.2)	.170 (4.3)	.250 (6.4)
560	K	2DF0T56	N2800	400 (10.2)	.185 (4.7)	.250 (6.4)
680	K	2DF0T68	N2800	400 (10.2)	.170 (4.3)	.250 (6.4)
820	K	2DF0T82	N2800	430 (10.9)	.175 (4.5)	.250 (6.4)
1000	K	2DF0D10	N2800	460 (11.7)	.170 (4.3)	.250 (6.4)
1200	K	2DF0D12	N2800	490 (12.5)	.170 (4.3)	.250 (6.4)
1500	K	2DF0D15	N2800	530 (13.5)	.170 (4.3)	.250 (6.4)
1800	K	2DF0D18	N2800	560 (14.2)	.170 (4.3)	.375 (9.5)
2200	K	2DF0D22	N2800	680 (17.3)	.180 (4.6)	.375 (9.5)
2300	K	2DF0D23	N2800	680 (17.3)	.175 (4.5)	.375 (9.5)
2400	K	2DF0D24	N2800	680 (17.3)	.175 (4.5)	.375 (9.5)
2500	K	2DF0D25	N2800	680 (17.3)	.170 (4.3)	.375 (9.5)
2700	K	2DF0D27	N2800	680 (17.3)	.170 (4.3)	.375 (9.5)
3300	K	2DF0D33	N2800	720 (18.3)	.170 (4.3)	.375 (9.5)
3900	K	2DF0D39	N2800	790 (20.1)	.170 (4.3)	.375 (9.5)
4700	K	2DF0D47	N2800	900 (22.9)	.180 (4.6)	.375 (9.5)
5600	K	2DF0D56	N2800	900 (22.9)	.170 (4.3)	.375 (9.5)
6800	K	2DF0D68	N2800	950 (24.1)	.170 (4.3)	.375 (9.5)

#### Note 2

For convenience, power rating charts are shown to 100 kHz. Higher frequency operation is permissible with appropriate derating.

Consult factory for application suggestions.

#### Note 3

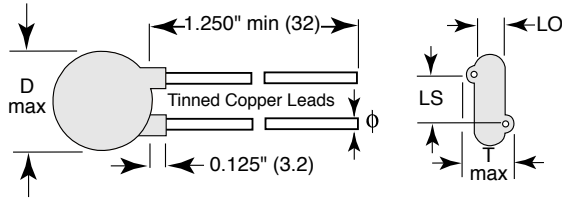
# 1DFO, 2DFO, 3DFO Series

Vishay Cera-Mite

Low Dissipation Factor Disc Capacitors



Fig 8



## WIRE LEAD INFORMATION

SERIES	Φ WIRE SIZE AWG / in / mm	"LO" TYP LEAD OFFSET in / mm
1DFO	22 .025 (.64)	.045 (1.2)
2DFO	20 .032 (.81)	.075 (1.8)
3DFO	20 .032 (.81)	.095 (2.4)

## 3DFO SERIES - LOW DISSIPATION FACTOR

564C Series

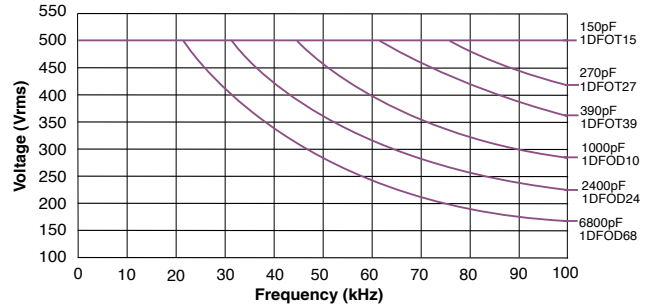
Application Range: 1500 Vrms, 3000 VDC

VALUE pF	TOL.	CATALOG NUMBER	TEMP CHAR.	D DIAMETER (in / mm)	T THICKNESS (in / mm)	LS LEAD SPACE (in / mm)
10	5%	3DF0Q10	N1500	.290 (7.4)	.185 (4.7)	.250 (6.4)
12	5%	3DF0Q12	N2200	.290 (7.4)	.210 (5.3)	.250 (6.4)
15	5%	3DF0Q15	N2200	.290 (7.4)	.185 (4.7)	.250 (6.4)
18	5%	3DF0Q18	N2200	.290 (7.4)	.185 (4.7)	.250 (6.4)
22	5%	3DF0Q22	N2200	.330 (8.4)	.210 (5.3)	.250 (6.4)
27	5%	3DF0Q27	N1500	.290 (7.4)	.220 (5.6)	.250 (6.4)
33	5%	3DF0Q33	N1500	.290 (7.4)	.195 (5.0)	.250 (6.4)
39	5%	3DF0Q39	N1500	.290 (7.4)	.190 (4.8)	.250 (6.4)
47	5%	3DF0Q47	N1500	.330 (8.4)	.225 (5.7)	.250 (6.4)
56	5%	3DF0Q56	N2000	.290 (7.4)	.210 (5.3)	.250 (6.4)
68	5%	3DF0Q68	N2000	.290 (7.4)	.190 (4.8)	.250 (6.4)
82	5%	3DF0Q82	N2000	.290 (7.4)	.185 (4.7)	.250 (6.4)
100	10%	3DF0T10	N2500	.290 (7.4)	.205 (5.2)	.250 (6.4)
120	10%	3DF0T12	N2500	.290 (7.4)	.190 (4.8)	.250 (6.4)
150	10%	3DF0T15	N2800	.290 (7.4)	.200 (5.1)	.250 (6.4)
180	10%	3DF0T18	N2800	.290 (7.4)	.190 (4.8)	.250 (6.4)
220	10%	3DF0T22	N2500	.330 (8.4)	.190 (4.8)	.250 (6.4)
270	10%	3DF0T27	N2800	.330 (8.4)	.205 (5.2)	.250 (6.4)
330	10%	3DF0T33	N2800	.330 (8.4)	.190 (4.8)	.250 (6.4)
390	10%	3DF0T39	N2800	.400 (10.2)	.215 (5.5)	.250 (6.4)
470	10%	3DF0T47	N2800	.400 (10.2)	.195 (5.0)	.250 (6.4)
560	10%	3DF0T56	N2800	.430 (10.9)	.200 (5.1)	.250 (6.4)
680	10%	3DF0T68	N2800	.460 (11.7)	.195 (5.0)	.250 (6.4)
820	10%	3DF0T82	N2800	.490 (12.5)	.195 (5.0)	.250 (6.4)
1000	10%	3DF0D10	N2800	.530 (13.5)	.190 (4.8)	.250 (6.4)
1200	10%	3DF0D12	N2800	.560 (14.2)	.190 (4.8)	.375 (9.5)
1500	10%	3DF0D15	N2800	.620 (15.8)	.190 (4.8)	.375 (9.5)
1800	10%	3DF0D18	N2800	.680 (17.3)	.190 (4.8)	.375 (9.5)
2200	10%	3DF0D22	N2800	.720 (18.3)	.190 (4.8)	.375 (9.5)
2300	10%	3DF0D23	N2800	.720 (18.3)	.190 (4.8)	.375 (9.5)
2400	10%	3DF0D24	N2800	.790 (20.1)	.195 (5.0)	.375 (9.5)
2500	10%	3DF0D25	N2800	.790 (20.1)	.195 (5.0)	.375 (9.5)
2700	10%	3DF0D27	N2800	.790 (20.1)	.190 (4.8)	.375 (9.5)
3300	10%	3DF0D33	N2800	.900 (22.9)	.200 (5.1)	.375 (9.5)
3900	10%	3DF0D39	N2800	.900 (22.9)	.190 (4.8)	.375 (9.5)
4700	10%	3DF0D47	N2800	.950 (24.1)	.185 (4.7)	.375 (9.5)

**Note 3**

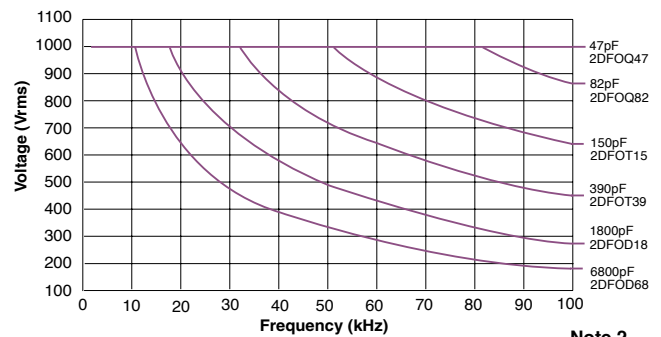
Alternate lead spacing of 5mm, 7.5mm, and 10mm are available bulk or tape & reel.

Power Rating - 1DFO Series 500 Vrms Low DF - Note 1



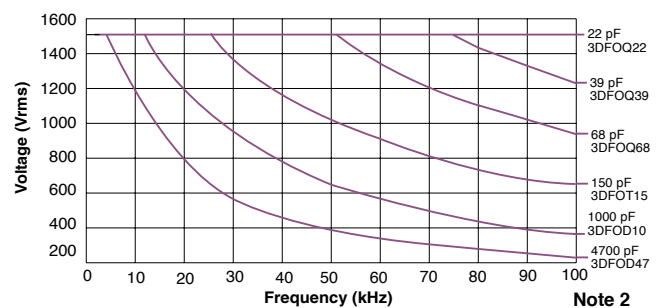
Note 2

Power Rating - 2DFO Series 1000 Vrms Low DF - Note 1



Note 2

Power Rating - 3DFO Series 1500 Vrms Low DF - Note 1



Note 2

Temperature Characteristics for 1DFO, 2DFO & 3DFO Series

