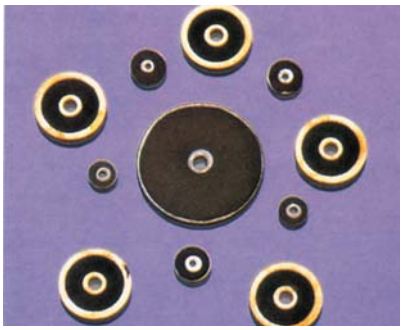
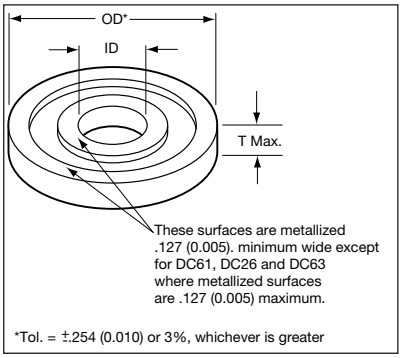
Discoidal MLC
Feed-Through Capacitors and Filters

DC Style (US Preferred Sizes)

APPLICATION INFORMATION ON DISCOIDAL





LOWEST CAPACITANCE IMPEDANCES TO GROUND

A discoidal MLC capacitor has very low impedance associated with its ground path since the signal is presented with a multi-directional path. These electrode paths, which can be as many as 100, allow for low ESR and ESL which are the major elements in impedance at high frequencies.

The assembled discoidal element or feed-thru allows signal to be fed in through a chassis or bulkhead, conditioned as it passes through the discoidal, and isolated by the chassis and discoidal from the original signal. An example of this application would be in an AFT circuit where the AC noise signal would be required to be stripped from the DC control signal. Other applications include single line EMI/RFI suppression, L-C filter construction, and coaxial shield bypass filtering.

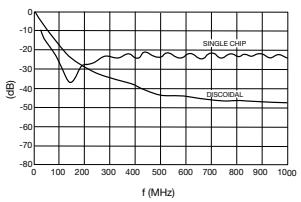
The shape of the discoidal lends itself to filter construction. The short length allows compact construction where L-C construction is desired. The size freedom associated with this element allows almost any inside/outside diameter combination. By allowing the inside diameter to equal the center insulator diameter of a coaxial signal line and special termination techniques, this device will allow bypass filtering of a floating shield to ground.

* Discoidal capacitors are available in two (2) temperature coefficients (C0G, X7R) and a variety of shapes and sizes, the most standard of which appear on pages 102 and 13.

* Custom designed capacitor arrays are available in an unlimited number of configuration with a wide range of rating voltages (50–2000) and temperature coefficients (NPO, BX, BR, X7R) please see page 121. For additional information please contact AVX.

AVX's DC Series 50V, 100V, 200V, C0G and X7R parts are capable of meeting the requirements of MIL-PRF-31033.

INSERTION LOSS



ELECTRICAL SPECIFICATIONS

Temperature Coefficient
C0G: A Temperature Coefficient - 0 ±30 ppm/°C, -55° +125°C
X7R: C Temperature Coefficient - ±15%, -55° to +125°C
Capacitance Test (MIL-STD-202 Method 305)
C0G: 25°C, 1.0±0.2 Vrms at 1KHz, for ≤100 pF use 1 MHz
X7R: 25°C, 1.0±0.2 Vrms at 1KHz
Dissipation Factor 25°C
C0G: 0.15% Max @ 25°C, 1.0±0.2 Vrms at 1KHz, for ≤100 pF use 1 MHz
X7R: 2.5% Max @ 25°C, 1.0±0.2 Vrms at 1KHz
Insulation Resistance 25°C (MIL-STD-202 Method 302)
C0G and X7R: 100K MΩ or 1000 MΩ-µF, whichever is less.

Insulation Resistance 125°C (MIL-STD-202 Method 302)
C0G and X7R: 10K MΩ or 100 MΩ-µF, whichever is less.
Dielectric Withstanding Voltage 25°C (Flash Test)*
C0G and X7R: 250% rated voltage for 5 seconds with 50 mA max charging current. 500V rated units will be tested at 750 VDC
Life Test (1000 hrs)
C0G and X7R: 200% rated voltage at +125°C (500 Volt units @ 600 VDC)
Moisture Resistance (MIL-STD-202 Method 106)
C0G, X7R: Ten cycles with no voltage applied.
Thermal Shock (MIL-STD-202 Method 107, Condition A)
Immersion Cycling (MIL-STD-202 Method 104, Condition B)

HOW TO ORDER

Not RoHS Compliant

DC61	5	A	561	K	A	5	1	06
AVX Style See Pages 119-120	**Voltage** 50V = 5 100V = 1 200V = 2 500V = 7	**Temperature Coefficient** C0G = A X7R = C	**Capacitance Code** (2 significant digits + no. of zeros) Examples: 10 pF = 100 100 pF = 101 1,000 pF = 102 22,000 pF = 223 220,000 pF = 224	**Capacitance Tolerance** C0G: J = ±5% K = ±10% M = ±20% X7R: K = ±10% M = ±20%	**Test Level** A = Standard	**Termination** 5 = Silver (AVX Standard) A = Unterminated 7 = SnNi w/Aµ Sputter (100µ inches)	**Inside Diameter** See Pages 117-119	**Maximum Thickness** 04 = 1.02 (0.040) 06 = 1.52 (0.060) 10 = 2.54 (0.100)

For dimensions, voltages or values not specified, please consult factory.

Discoidal MLC Feed-Through Capacitors and Filters

DC Style

SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: millimeters (inches)

EIA Characteristic	C0G																
AVX Style	**DC50**	**DC80**	**DC61**	**DC26**	**DC63**	**DC04**	**DC65**	**DC66**	**DC67**	**DC69**	**DC32**	**DC70**	**DC02**	**DC71**	**DC05**	**DC73**	**DC72**
Outside Diameter (OD)*	0.05 (0.002)	0.80 (0.003)	2.54 (0.100)	3.43 (0.135)	3.81 (0.150)	4.83 (0.190)	5.33 (0.210)	5.97 (0.235)	6.73 (0.265)	8.13 (0.320)	8.51 (0.335)	8.89 (0.350)	9.40 (0.370)	9.78 (0.385)	12.70 (0.500)	15.24 (0.600)	16.26 (0.640)
Thickness Maximum (T)	0.04 (0.002)	0.04 (0.002)	1.52 (0.060)	1.52 (0.060)	1.52 (0.060)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)
Inside Diameter No. (ID)	1	1,2	1,2	1,2,3	1,2,3,4	1,2,3	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4
Termination	Sputter	All															
Voltage	50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50
cap. in pF 10 12 15																	
18 22 27																	
33 39 47																	
56 68 82																	
100 120 150																	
180 220 270																	
330 390 470																	
560 680 820																	
1000 1200 1500																	
1800 2200 2700																	
3300 3900 4700																	
5600 6800 8200																	
10,000 12,000 15,000																	
18,000 22,000 27,000																	
33,000 39,000 47,000																	
56,000 68,000 82,000																	
100,000 120,000 150,000																	
180,000 220,000 270,000																	
330,000 390,000 470,000																	
560,000 680,000																	

DC50 termination can only be sputter Aμ

***Outside Diameter:**
Tolerance is ±0.254 (0.010) or 3% whichever is greater

Inside Diameter:

1 = $.635^{+.127}_{-.051}$ ($.025^{+.005}_{-.002}$)

2 = $.762^{+.127}_{-.051}$ ($.030^{+.005}_{-.002}$)

3 = $.914^{+.127}_{-.051}$ ($.036^{+.005}_{-.002}$)

4 = $1.07^{+.127}_{-.051}$ ($.042^{+.005}_{-.002}$)

5 = 1.27±.127 (0.050±.005)

6 = 1.52±.127 (0.060±.005)

7 = 1.73±.127 (0.068±.005)

Discoidal MLC Feed-Through Capacitors and Filters

DC Style

SIZE AND CAPACITANCE SPECIFICATIONS

Dimensions: millimeters (inches)

EIA Characteristic	X7R																
AVX Style	**DC50**	**DC80**	**DC61**	**DC26**	**DC63**	**DC04**	**DC65**	**DC66**	**DC67**	**DC69**	**DC32**	**DC70**	**DC02**	**DC71**	**DC05**	**DC73**	**DC72**
Outside Diameter (OD)*	0.05 (0.002)	0.08 (0.003)	2.54 (0.100)	3.43 (0.135)	3.81 (0.150)	4.83 (0.190)	5.33 (0.210)	5.97 (0.235)	6.73 (0.265)	8.13 (0.320)	8.51 (0.335)	8.89 (0.350)	9.40 (0.370)	9.78 (0.385)	12.70 (0.500)	15.24 (0.600)	16.26 (0.640)
Thickness Maximum (T)	0.04 (0.002)	0.04 (0.002)	1.52 (0.060)	1.52 (0.060)	1.52 (0.060)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)	2.54 (0.100)
Inside Diameter No. (ID)	1	1,2	1,2	1,2,3	1,2,3,4	1,2,3	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4	5,6,7 1,2,3,4
Termination	Sputter	All															
Voltage	50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50	500 200 100 50
cap. in pF 56 68 82																	
100 120 150																	
180 220 270																	
330 390 470																	
560 680 820																	
1000 1200 1500																	
1800 2200 2700																	
3300 3900 4700																	
5600 6800 8200																	
10,000 12,000 15,000																	
18,000 22,000 27,000																	
33,000 39,000 47,000																	
56,000 68,000 82,000																	
100,000 120,000 150,000																	
180,000 220,000 270,000																	
330,000 390,000 470,000																	
560,000 680,000 820,000																	
1.0 µF 1.2 µF 1.5 µF																	
1.8 µF 2.2 µF 2.7 µF																	
3.3 µF 3.9 µF 6.8 µF																	

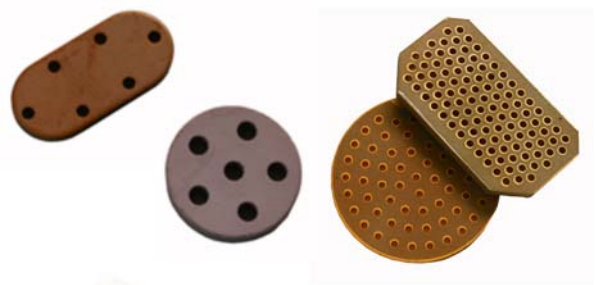
DC50 termination can only be sputter Aµ

***Outside Diameter:**
Tolerance is ±0.254 (0.010) or 3% whichever is greater

Inside Diameter:

1 = $.635^{+.127}_{-.051}$ ($.025^{+.005}_{-.002}$)
2 = $.762^{+.127}_{-.051}$ ($.030^{+.005}_{-.002}$)
3 = $.914^{+.127}_{-.051}$ ($.036^{+.005}_{-.002}$)
4 = $1.07^{+.127}_{-.051}$ ($.042^{+.005}_{-.002}$)
5 = 1.27±.127 (0.050±.005)
6 = 1.52±.127 (0.060±.005)
7 = 1.73±.127 (0.068±.005)

Custom Discoidal Arrays



Custom Applications requiring planar capacitor arrays designed to customer specific schematic including unique shapes, sizes, hole / pin configurations, multiple capacitor values, internal &/or external grounds, and more.

APPLICATIONS

- Implantable Medical
- Military
- Aerospace
- EMI Filters Assembly
- EMI Filter Arrays

PRODUCTS

These capacitor arrays form the basis for many custom filter assemblies. For full detail of these options, please follow the link below to our EMI filter master catalog.

http://www.avx.com/docs/masterpubs/emift.pdf

BENEFITS

- A custom designed filter bracket will help:
- To reduce your yield losses
- To eliminate filter rework in assemblies
- To reduce system assembly costs
- To minimize your inventory

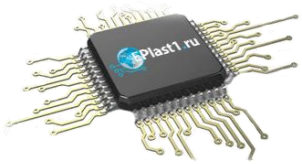
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.