

TANCERAM® chip capacitors can replace tantalum capacitors in many applications and offer several key advantages over traditional tantalums. Because TANCERAM® capacitors exhibit extremely low ESR, equivalent circuit performance can often be achieved using considerably lower capacitance values. Low DC leakage reduces current drain, extending the battery life of portable products. TANCERAM® high DC breakdown voltage ratings offer improved reliability and eliminate large voltage de-rating common when designing with tantalums.

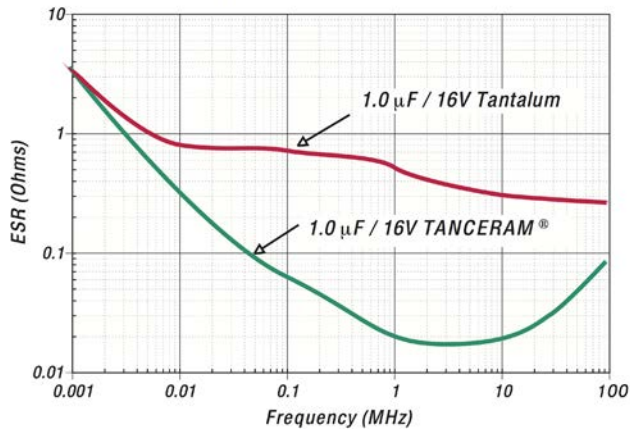
## ADVANTAGES

- Low ESR
- Higher Surge Voltage
- Reduced CHIP Size
- Higher Insulation Resistance
- Low DC Leakage
- Non-polarized Devices
- Improved Reliability
- Higher Ripple Current

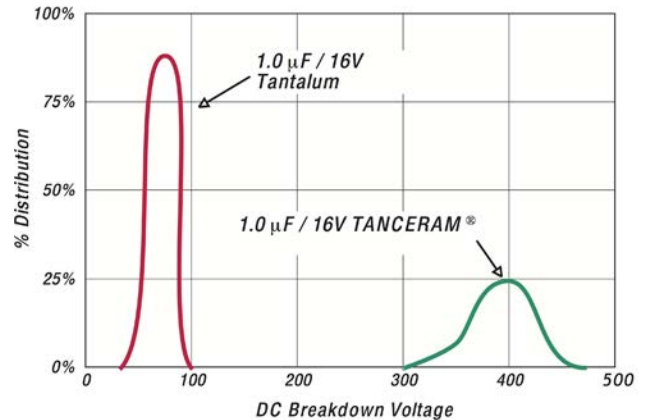
## APPLICATIONS

- Switching Power Supply Smoothing (Input/Output)
- DC/DC Converter Smoothing (Input/Output)
- Backlighting Inverters
- General Digital Circuits

Typical ESR Comparison



Typical Breakdown Voltage Comparison



## HOW TO ORDER TANCERAM®

Part number written: 100R15X106MV4E

**100**

VOLTAGE

6R3 = 6.3 V  
100 = 10 V  
160 = 16 V  
250 = 25 V  
500 = 50 V  
101 = 100 V

**R15**

SIZE

See Chart

**X**

DIELECTRIC

W = X7R  
X = X5R

**106**

CAPACITANCE

1st two digits are significant; third digit denotes number of zeros.  
105 = 1.00 µF  
476 = 47.0 µF  
107 = 100 µF

**M**

TOLERANCE

K = ±10%  
M = ±20%

**V**

TERMINATION

V = Nickel Barrier with 100% Tin Plating (Matte)

T = SnPb\*  
(\*available on select parts)

**4**

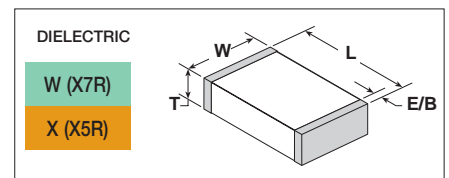
MARKING

4 = Unmarked

**E**

PACKING

Code Type Reel  
E Plastic 7"  
T Paper 7"  
Tape specifications conform to EIA RS481



## CASE SIZE

## CAPACITANCE SELECTION

EIA / JDI	INCHES	(mm)	VDC	1.0 $\mu$ F	2.2 $\mu$ F	3.3 $\mu$ F	4.7 $\mu$ F	10 $\mu$ F	22 $\mu$ F	47 $\mu$ F	100 $\mu$ F		
				105	225	335	475	106	226	476	107		
0402 R07	L	.040 $\pm$ .004	(1.02 $\pm$ .10)										
	W	.020 $\pm$ .004	(0.51 $\pm$ .10)										
	T	.025 Max.	(0.64)										
	EB	.008 $\pm$ .004	(0.20 $\pm$ .10)										
0603 R14	L	.063 $\pm$ .008	(1.60 $\pm$ .20)										
	W	.032 $\pm$ .008	(0.81 $\pm$ .20)										
	T	.035 Max.	(0.89)										
	EB	.010 $\pm$ .005	(.25 $\pm$ .13)										
0805 R15	L	.080 $\pm$ .010	(2.03 $\pm$ .25)										
	W	.050 $\pm$ .010	(1.27 $\pm$ .25)										
	T	.060 Max.	(1.52)										
	EB	.020 $\pm$ .010	(0.51 $\pm$ .25)										
	VDC			50									
1206 R18	L	.125 $\pm$ .013	(3.17 $\pm$ .35)										
	W	.062 $\pm$ .010	(1.57 $\pm$ .25)										
	T	.070 Max.	(1.78)										
	EB	.020 +.015-.010	(0.51+.38-.25)										
	VDC			50									
1210 S41	L	.126 $\pm$ .016	(3.20 $\pm$ .40)										
	W	.098 $\pm$ .012	(2.50 $\pm$ .30)										
	T	.110 Max.	(2.8)										
	EB	.020 +.015-.010	(0.51+.38-.25)										
	VDC			100									
1812 S43	L	.177 $\pm$ .016	(4.50 $\pm$ .40)										
	W	.126 $\pm$ .015	(3.20 $\pm$ .38)										
	T	.140 Max.	(3.55)										
	EB	.035 $\pm$ .020	(0.89 $\pm$ 0.51)										
			VDC	50									
			VDC	25									
				W	X	W	X	W	X	W	X		
				"K" OR "M" TOLERANCE						ONLY "M" TOLERANCE			

## ELECTRICAL CHARACTERISTICS

DIELECTRIC:	X7R	X5R
TEMPERATURE COEFFICIENT:	$\pm$ 15% (-55 to +125°C)	$\pm$ 15% (-55 to +85°C)
DISSIPATION FACTOR:	For $\geq$ 50 VDC: 5% max. For $\leq$ 35 VDC: 10% max.	For $\geq$ 50 VDC: 5% max. For $\leq$ 35 VDC: 10% max.
INSULATION RESISTANCE (MIN. @ 25°C, WVDC)	100 $\Omega$ F or 10 G $\Omega$ , whichever is less	
DIELECTRIC STRENGTH:	2.5 X WVDC, 25°C, 50mA max.	
TEST CONDITIONS:	Capacitance values $\leq$ 10 $\mu$ F: 1.0kHz $\pm$ 50Hz @ 1.0 $\pm$ 0.2 Vrms Capacitance values $>$ 10 $\mu$ F: 120Hz $\pm$ 10Hz @ 0.5V $\pm$ 0.1 Vrms	
OTHER:	See page 79 for additional dielectric specifications.	

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