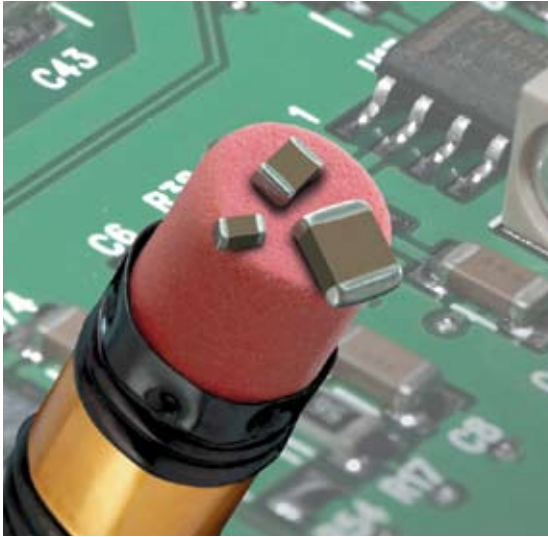


# TANCERAM® CHIP CAPACITORS



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. Tancerams® high DC breakdown voltage ratings offer improved reliability and eliminate large voltage de-rating common when designing with tantalums.

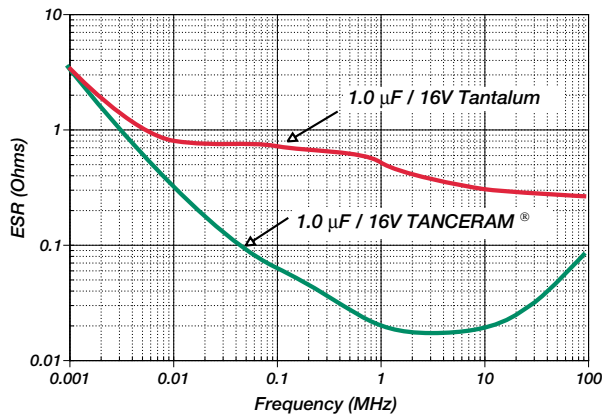
## ADVANTAGES

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

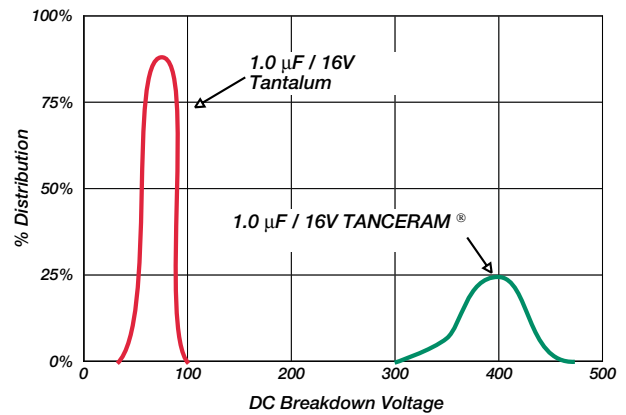
## APPLICATIONS

- 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®

<b>250</b>	<b>R18</b>	<b>Y</b>	<b>105</b>	<b>Z</b>	<b>V</b>	<b>4</b>	<b>E</b>
<b>VOLTAGE</b> 500 = 50 V 250 = 25 V 160 = 16 V 100 = 10 V 6R3 = 6.3 V	<b>CASE SIZE</b> See Chart	<b>DIELECTRIC</b> W = X7R X = X5R Y = Y5V	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros. 474 = 0.47 µF 105 = 1.00 µF	<b>TOLERANCE</b> Y5V Z = +80% -20% X7R/X5R K = ±10% M = ±20%	<b>TERMINATION</b> V = Ni barrier w/ 100% Sn Plating	<b>MARKING</b> 4 = Unmarked	<b>TAPE MODIFIER</b> Code Type Reel E Plastic 7" T Paper 7" Tape specifications conform to EIA RS481

P/N written: 250R18Y105ZV4E



# TANCERAM® CHIP CAPACITORS

## CAPACITANCE SELECTION

CASE SIZE			CAPACITANCE SELECTION																			
			50 V	25 V	16 V	10 V	6.3 V	50 V	25 V	16 V	10 V	6.3 V	50 V	25 V	16 V	10 V	6.3 V	50 V	25 V	16 V	10 V	6.3 V
			.047 $\mu$ F	0.10 $\mu$ F	0.22 $\mu$ F	0.33 $\mu$ F	0.47 $\mu$ F	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							
0402 R07		Inches	(mm)																			
	L	.040 ±.004	(1.02 ±.10)																			
	W	.020 ±.004	(0.51 ±.10)																			
	T	.025 Max.	(0.64)																			
	E/B	.008 ±.004	(0.20±.10)																			
0603 R14		Inches	(mm)																			
	L	.063 ±.008	(1.60 ±.20)																			
	W	.032 ±.008	(0.81 ±.20)																			
	T	.035 Max.	(0.89)																			
	E/B	.010±.005	(.25±.13)																			
0805 R15		Inches	(mm)																			
	L	.080 ±.010	(2.03 ±.25)																			
	W	.050 ±.010	(1.27 ±.25)																			
	T	.060 Max.	(1.52)																			
	E/B	.020±.010	(0.51±.25)																			
1206 R18		Inches	(mm)																			
	L	.125 ±.010	(3.17 ±.25)																			
	W	.062 ±.010	(1.57 ±.25)																			
	T	.070 Max.	(1.78)																			
	E/B	.020 +.015-0.10	(0.51+.38-.25)																			
1210 S41		Inches	(mm)																			
	L	.125 ±.010	(3.18 ±.25)																			
	W	.095 ±.010	(2.41 ±.25)																			
	T	.110 Max.	(2.8)																			
	E/B	.020 +.015-0.10	(0.51+.38-.25)																			
1812 S43		Inches	(mm)																			
	L	.175 ±.010	(4.45 ±.25)																			
	W	.125 ±.010	(3.17 ±.25)																			
	T	.110 Max.	(2.8)																			
	E/B	.035±.020	(0.89±.51)																			
	* T	.140 Max.	(3.55)																			

**DIELECTRIC**

X7R

X5R

Y5V

## ELECTRICAL CHARACTERISTICS

	X7R	X5R	Y5V
Temperature Coefficient:	±15% (-55 to +125°C)	±15% (-55 to +85°C)	+22%, -82% (-30 to +85°C)
Dissipation Factor:	For ≥ 50 VDC: 5% max. For ≤ 25 VDC: 10% max.	For ≥ 50 VDC: 5% max. For ≤ 25 VDC: 10% max.	For ≥ 10 VDC: 16% max. For 6.3 VDC: 20% max.
Insulation Resistance (Min. @ 25°C, WVDC)	500 $\Omega$ F or 10 G $\Omega$ , whichever is less		
Dielectric Strength:	2.5 X WVDC, 25°C, 50mA max.		
Test Conditions:	Capacitance values ≤ 22 $\mu$ F: 1.0kHz±50Hz @ 1.0±0.2 Vrms Capacitance values > 22 $\mu$ F: 120Hz±10Hz @ 0.5V±0.1 Vrms		
Other:	See page 20 for additional dielectric specifications.		

