

## Surface Mount Multilayer Ceramic Chip Capacitors for Telecom Applications



### FEATURES

- Replaces high voltage, leaded, film capacitors
- Rated for telecommunications voltages
- Saves board space and weight
- Surface mountable, precious metal technology, wet build process
- Wide band operation, excellent high frequency filtering


**RoHS**  
COMPLIANT

### APPLICATIONS

- Ideal for telephone line (Tip 'N Ring®) filtering
- Voice over Internet (VOI) cards

### ELECTRICAL SPECIFICATIONS

**Note:** Electrical characteristics at + 25 °C unless otherwise specified

**Operating Temperature:** - 55 °C to + 125 °C

**Capacitance Range:** 0.033 µF to 1.0 µF

**Voltage Rating:** 250 Vdc

**Temperature Coefficient of Capacitance (TCC):**  
± 15 % from - 55 °C to + 125 °C

**Dissipation Factor (DF):**  
2.5 % maximum at 1.0 V<sub>rms</sub> and 1 kHz

**Aging Rate:** 1 % maximum per decade

### Insulation Resistance (IR):

At + 25 °C and rated voltage 100 000 MΩ minimum or 1000 ΩF, whichever is less.

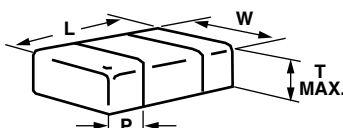
At + 125 °C and rated voltage 10 000 MΩ minimum or 100 ΩF, whichever is less.

### Dielectric Withstanding Voltage (DWV):

This is the maximum voltage the capacitors are tested for a 1 to 5 second period and the charge/discharge current does not exceed 50 mA

250 Vdc: DWV at 250 % of rated voltage

### DIMENSIONS in inches [millimeters]



PART ORDERING NUMBER	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATION PAD (P)	
				MINIMUM	MAXIMUM
VJ1812 (9427, 7427)	0.177 ± 0.010 [4.50 ± 0.25]	0.126 ± 0.010 [3.20 ± 0.25]	0.086 [2.18]	0.010 [0.25]	0.030 [0.76]
VJ1825 (9174, 7174)	0.177 ± 0.010 [4.50 ± 0.25]	0.252 ± 0.010 [6.40 ± 0.25]	0.086 [2.18]	0.010 [0.25]	0.030 [0.76]
VJ2225 (9253)	0.220 ± 0.010 [5.59 ± 0.25]	0.250 ± 0.010 [6.35 ± 0.25]	0.086 [2.18]	0.010 [0.25]	0.030 [0.76]

### ORDERING INFORMATION

VJ1812	Y	334	J	X	P	A	T	3T
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING <sup>(1)</sup>	MARKING	PACKAGING	PROCESS CODE
1812 (9427, 7427)	Y = X7R	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. <b>Example:</b> 334 = 330 000 pF	J = ± 5 % K = ± 10 % M = ± 20 %	X = Ni barrier with 100 % tin plated finish. F = AgPd	P = 250 V	A = Unmarked	T = 7" reel/ plastic tape R = 11 1/4" reel/ plastic tape	3T = Tip'N Ring
1825 (9174, 7174)								
2225 (9253)								

**Note:**

<sup>(1)</sup> DC voltage rating should not be exceeded in application



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for Telecom Applications

Vishay Vitramon

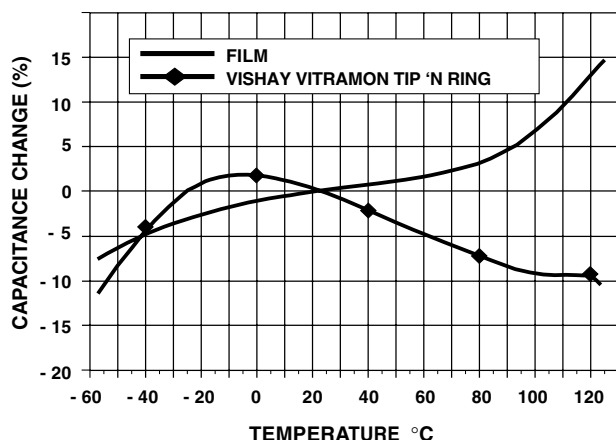
SELECTION CHART				
EIA TYPE		1812 <sup>(1)</sup>	1825 <sup>(1)</sup>	2225 <sup>(1)</sup>
PRODUCT DRAWING INFORMATION (PDI)		9427, 7427	9174, 7174	9253
VOLTAGE (Vdc)		250	250	250
CAP. CODE	CAP.			
333	0.033 $\mu$ F			•
393	0.039 $\mu$ F			•
473	0.047 $\mu$ F			•
563	0.056 $\mu$ F			•
683	0.068 $\mu$ F			•
823	0.082 $\mu$ F			•
104	0.10 $\mu$ F	•		•
124	0.12 $\mu$ F	•		•
154	0.15 $\mu$ F	•	•	•
184	0.18 $\mu$ F	•	•	•
224	0.22 $\mu$ F	•	•	•
274	0.27 $\mu$ F	•	•	•
334	0.33 $\mu$ F	•	•	•
394	0.39 $\mu$ F	•	•	•
474	0.47 $\mu$ F	•	•	•
564	0.56 $\mu$ F		•	•
684	0.68 $\mu$ F		•	•
824	0.82 $\mu$ F		•	•
105	1.0 $\mu$ F		•	•

**Note:**

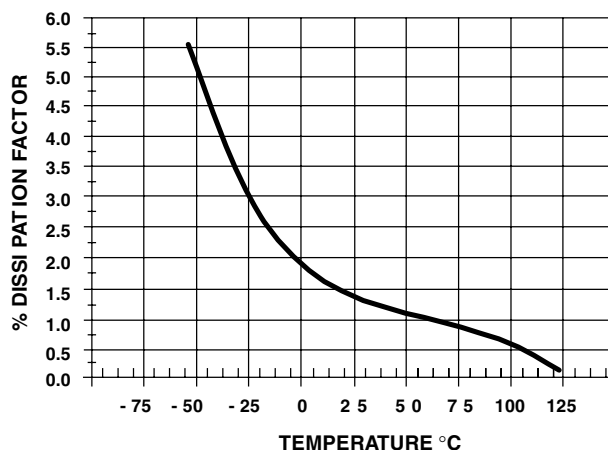
<sup>(1)</sup> See soldering recommendations within this data book, or visit [www.vishay.com/doc?45034](http://www.vishay.com/doc?45034)

## TIP'N RING® - TYPICAL PARAMETERS

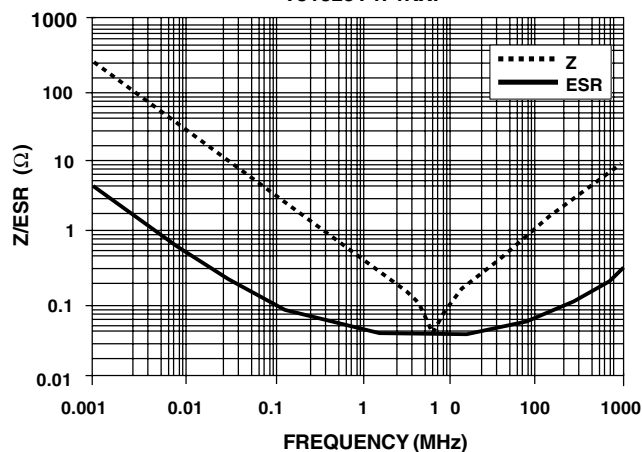
CAPACITANCE COMPARISONS FILM  
VS. VISHAY VITRAMON VJ1825Y474KXP TIP'N RING  
0.47  $\mu$ F, 250 V



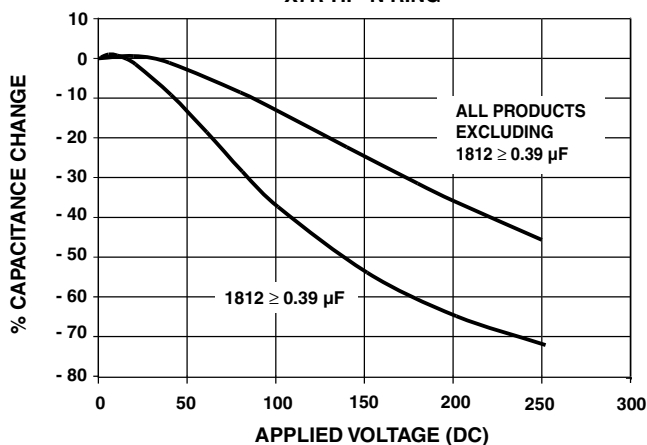
X7R - DISSIPATION FACTOR VS. TEMPERATURE



IMPEDANCE VS. FREQUENCY  
VISHAY VITRAMON TIP'N RING  
VJ1825Y474KXP



VOLTAGE COEFFICIENT OF CAPACITANCE  
X7R TIP'N RING



## STANDARD PACKAGING QUANTITIES (1) (2) (3)

BODY SIZE	TAPE SIZE	7" REEL QUANTITIES		11 1/4" AND 13" REEL QUANTITIES		BULK QUANTITIES	
		PAPER TAPE PACKAGING CODE "C"	PLASTIC TAPE PACKAGING CODE "T"	PAPER TAPE PACKAGING CODE "P"	PLASTIC TAPE PACKAGING CODE "R"	VIAL PACKAGING CODE "B"	WAFFLE PACKAGING CODE "W"
1812 (9427, 7427)	12 mm	N/a	1000	N/a	5000	N/a	N/a
1825 (9174, 7174)	12 mm	N/a	1000	N/a	4000	N/a	N/a
2225 (9253)	12 mm	N/a	1000	N/a	4000	N/a	N/a

### Notes:

(1) Vishay Vitramon uses embossed plastic carrier tape

(2) REFERENCE: EIA Standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"

(3) N/a = Not available



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Vishay:

[VJ9427Y334KXPAT](#) [VJ9253Y684KXPAT](#) [VJ9427Y104JXPAT](#) [VJ9427Y104MXPAR](#) [VJ2225Y105KXPAT3T](#)  
[VJ1825Y684KXPAT3T](#) [VJ1812Y334KXPAT3T](#) [VJ1825Y474KXPAT3T](#) [VJ1812Y104KXPAT3T](#)