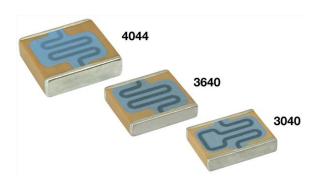


www.vishay.com

Vishay Vitramon

Surface Mount Multilayer Ceramic Chip Capacitors with Integrated Resistor for High Pulse Current Applications



FEATURES

Integrated resistor on the surface of the capacitor



- Low electrostrictive ceramic formulation for repeated charge and discharge cycles
- · High pulse discharge currents
- Excellent reliability and high voltage performance
- Available with tin/lead barrier termination (code "L")
- · Wet built process
- Reliable Noble Metal Electrode (NME) system
- Made with a combination of design, materials and tight process control to achieve very highly field reliability
- Resistor glass overglaze contains lead
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Note

^t This datasheet provides information about parts that are RoHS-compliant and/or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information/tables in this datasheet for details.

APPLICATIONS

- · Detonation devices (munitions, pyrotechnic, blasting)
- Down hole drilling
- · Electronic fuzing

ELECTRICAL SPECIFICATIONS

Note

Electrical characteristics at + 25 °C unless otherwise specified

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

Capacitance Range: 33 nF to 560 nF

Voltage Range: $1000 V_{DC}$ to $1500 V_{DC}$

Temperature Coefficient of Capacitance (TCC):

X5P: \pm 10 % from - 55 °C to + 85 °C, with 0 V_{DC} applied X7R: \pm 15 % from - 55 °C to + 125 °C, with 0 V_{DC} applied

Parallel Resistor: $500 \text{ M}\Omega \pm 30 \%$

Dissipation Factor (DF):

2.5 % maximum at 1.0 V_{RMS} and 1 kHz

Aging Rate: 1 % maximum per decade

Insulation Resistance (IR):

At + 25 °C without resistor: 100 000 M Ω minimum or 1000 Ω F, whichever is less.

At + 125 °C without resistor: 10 000 M Ω minimum or 100 Ω F, whichever is less.

Dielectric Strength Test:

Performed per Method 103 of EIA 198-2-E.

Applied test voltages:

1000 V_{DC}/1500 V_{DC}-rated: 120 % of rated voltage



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QUICK REFERENCE DATA						
DIELECTRIC	CASE	MAXIMUM VOLTAGE	CAPACITANCE			
DIELECTRIC		(V)	MINIMUM	MAXIMUM		
	3040	1500	33 nF	220 nF		
X7R (X5P)	3640	1500	47 nF	330 nF		
	4044	1500	100 nF	560 nF		

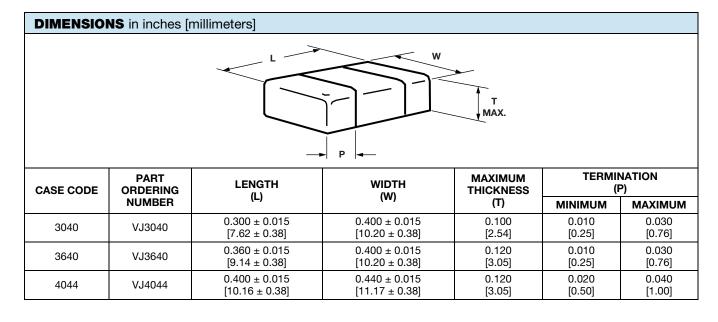
Note

• Detail ratings see "Selection Chart"

ORDER	ORDERING INFORMATION							
VJ3640 (3)	Υ	184	K	Х	R	Α	Т	8R ⁽²⁾
CASE CODE 1 3040 3640 4044	DIELECTRIC Y = X7R (X5P)	CAPACITANCE NOMINAL CODE I Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. Examples: 184 = 180 nF 334 = 330 nF	CAPACITANCE TOLERANCE I $J = \pm 5 \%$ $K = \pm 10 \%$ $M = \pm 20 \%$	X = Ni barrier 100 % tin plate matte finish L = Ni barrier with tin lead plated finish min. 4 % lead	DC VOLTAGE RATING (1) I G = 1000 V R = 1500 V	MARKING A = Unmarked	PACKAGING T = 7" reel/p	PROCESS CODE

Notes

- (1) DC voltage rating should not be exceeded in application. Other application factors may affect the MLCC performance. Consult for questions: mlcc@vishay.com
- (2) Process Code must be added to control special requirements
- (3) Size designator may be replaced by four digit drawing number used to control non-standard products and/or special requirements



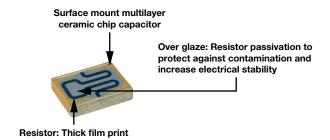
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STYLE VJ3040 (¹¹) VJ3044 (¹¹) ISON (¹¹)

Notes

RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"

CONSTRUCTION



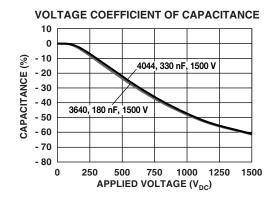
Plastic tape

⁽¹⁾ See soldering recommendations within this data book, or visit <u>www.vishay.com/doc?45034</u>

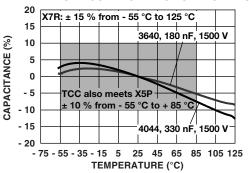


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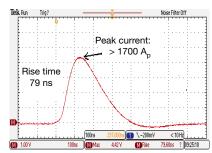
TYPICAL PARAMETERS



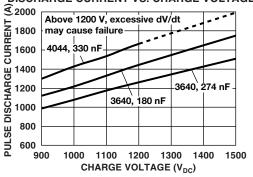
TEMPERATURE COEFFICIENT OF CAPACITANCE



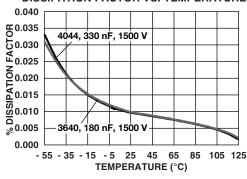




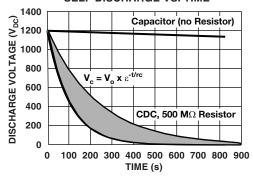
DISCHARGE CURRENT VS. CHARGE VOLTAGE



DISSIPATION FACTOR VS. TEMPERATURE



SELF DISCHARGE VS. TIME





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STANDARD PACKAGING QUANTITIES (1)(2)(3)				
		7" REEL QUANTITIES		
CASE CODE	TAPE SIZE	PLASTIC TAPE PACKAGING CODE "T"		
3040	16 mm	500		
3640	16 mm	500		
4044	24 mm	300		

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

STORAGE AND HANDLING CONDITIONS

- (1) Store the components at 5 °C to + 40 °C ambient temperature and ≤ 70 % related humidity conditions.
- (2) The product is recommended to be used within a time-frame of 2 years after shipment. Check solderability in case extended shelf life beyond the expiry date is needed.

Precautions:

- a. Do not store products in an environment containing corrosive elements, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. This may cause corrosion or oxidization of the terminations, which can easily lead to poor soldering.
- b. Store products on the shelf and avoid exposure to moisture or dust.
- c. Do not expose products to excessive shock, vibration, direct sunlight and so on.



RoHS COMPLIANCE UPDATE

The RoHS compliance of the parts in this datasheet is currently under review. For more information, please contact your local Vishay sales representative.



Legal Disclaimer Notice

Vishay

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Revision: 02-Oct-12 Document Number: 91000

ПОСТАВКА ЭЛЕКТРОННЫХ КОМПОНЕНТОВ

многоканальный

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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