



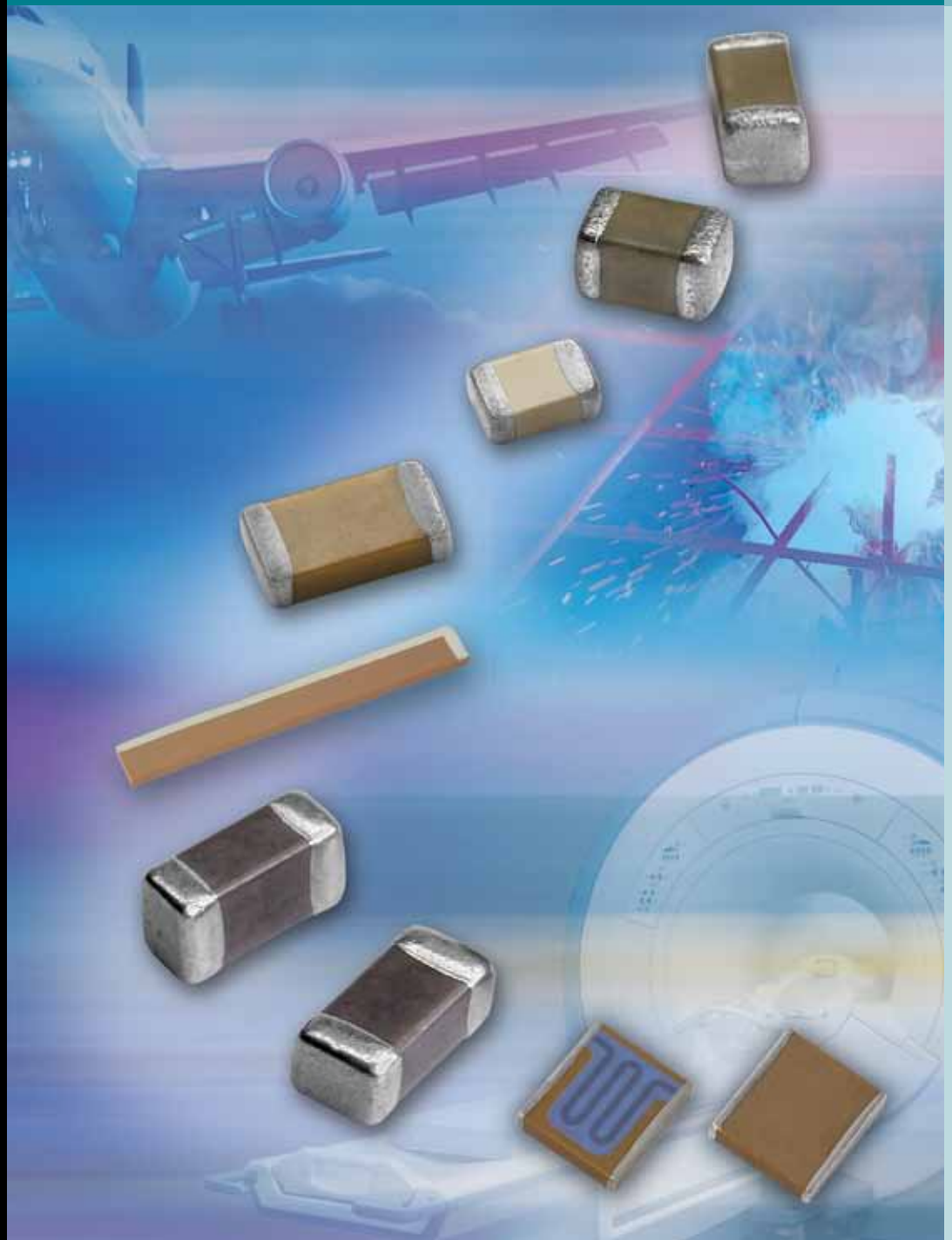
VISHAY INTERTECHNOLOGY, INC.

# MULTILAYER CERAMIC CHIP CAPACITOR PRODUCT ROAD MAP

Vishay Vitramon

CAPACITORS

PRODUCT OVERVIEW





# MULTILAYER CERAMIC CHIP CAPACITORS PRODUCTS ROAD MAP

Vishay Vitramon

## Surface-Mount Products

- **Vishay Vitramon Chip Capacitor** – VJ series surface-mount product, a reliable replacement for leaded capacitors
- **High-Q Series** – C0G (NP0) ultra-stable, high-frequency capacitors
- **Medical Grade Capacitors** – For implantable cardiovascular control applications
- **Automotive Grade Capacitors** – Qualified to AEC-Q200 guidelines for reliable automotive electronics
- **MIL-PRF-55681** – Complies with Department of Defense specification requirements for CDR military grade series
- **High-Voltage Series** – For application voltages above 200 V
- **X8R Dielectric** – Stable capacitance with reliable performance up to + 150 °C
- **Tip ‘N Ring® Series** – Replaces high-voltage leaded film capacitors in telecommunications line filtering
- **VTOP Series** – Low-profile controlled thickness to less than 0.026" [0.66 mm]
- **Low Inductance Series** – Typically half the inductance of standard products
- **Cassette Packaging** – Bulk case package increases pick and place productivity, reduces storage area and packaging materials
- **Cer-F Series** – An alternative to film capacitors with stable temperature coefficient of capacitance
- **RuGGed Chip Series** – Advanced X7R dielectric, low power consumption, high voltage breakdown compared to standard designs, and excellent thermal shock performance
- **Open Mode Design Capacitors (OMD-Cap)** – Reduces risk of shorts and low insulation resistance from capacitor cracks due to board flex, with high voltage breakdown compared to standard designs
- **High-Reliability Series** – A broad product range manufactured with a combination of design, materials, and tight process controls to achieve high field reliability
- **Tin/Lead (Sn/Pb) Termination Finish for CDR, DSCC, High-Reliability Series** – Base metallization 100 % tin plate barrier with tin/lead plate matte finish with a minimum 4 % lead
- **DSCC Part Numbers** – 03029 (0402 case size), 03028 (0603 case size), 05006 (0805 case size), 05007 (1206 case size)
- **HVArc Guard® Capacitor Series** – Higher capacitance, surface-mountable, high-voltage, multilayer ceramic capacitors designed to prevent surface arc-over
- **CDR Solder Coat Termination** – Base metallization-barrier metal-solder-coated tin/lead alloy (Sn/Pb), with a minimum of 4 % percent lead. Solder has a melting point + 200 °C or less. Solder coat thickness is a minimum of 60 micro-inches
- **Flexible Polymer Terminations** – Enhance the robustness of the terminations to resist board flexure failures
- **VJ...W1BC** – Basic commodity series with base metal electrode (BME) for X7R/X5R/Y5V and noble metal electrodes (NME) for NP0 dielectric
- **Chip Arrays** – Chip arrays for space-constrained applications and filtering in data communication lines. Four capacitors in one package, built on NP0, X7R or Y5V dielectric
- **Ultra-Small 0201** – Ultra-small series - Built with NP0, X5R, X7R and Y5V dielectric for miniaturization in portable applications
- **0402 High-Q** – Excellent Q-factor and low ESR enable miniaturization in wireless data communication applications
- **Surface-Mount Chip Antenna** – With ultra-small outline, omni-directional, linear polarization and complete UHF band coverage (470 MHz to 860 MHz) up to 1.1 GHz for mobile devices

## Hybrid Products

- **Silver/Palladium (Ag/Pd) Terminations** – Used for conductive epoxy assembly

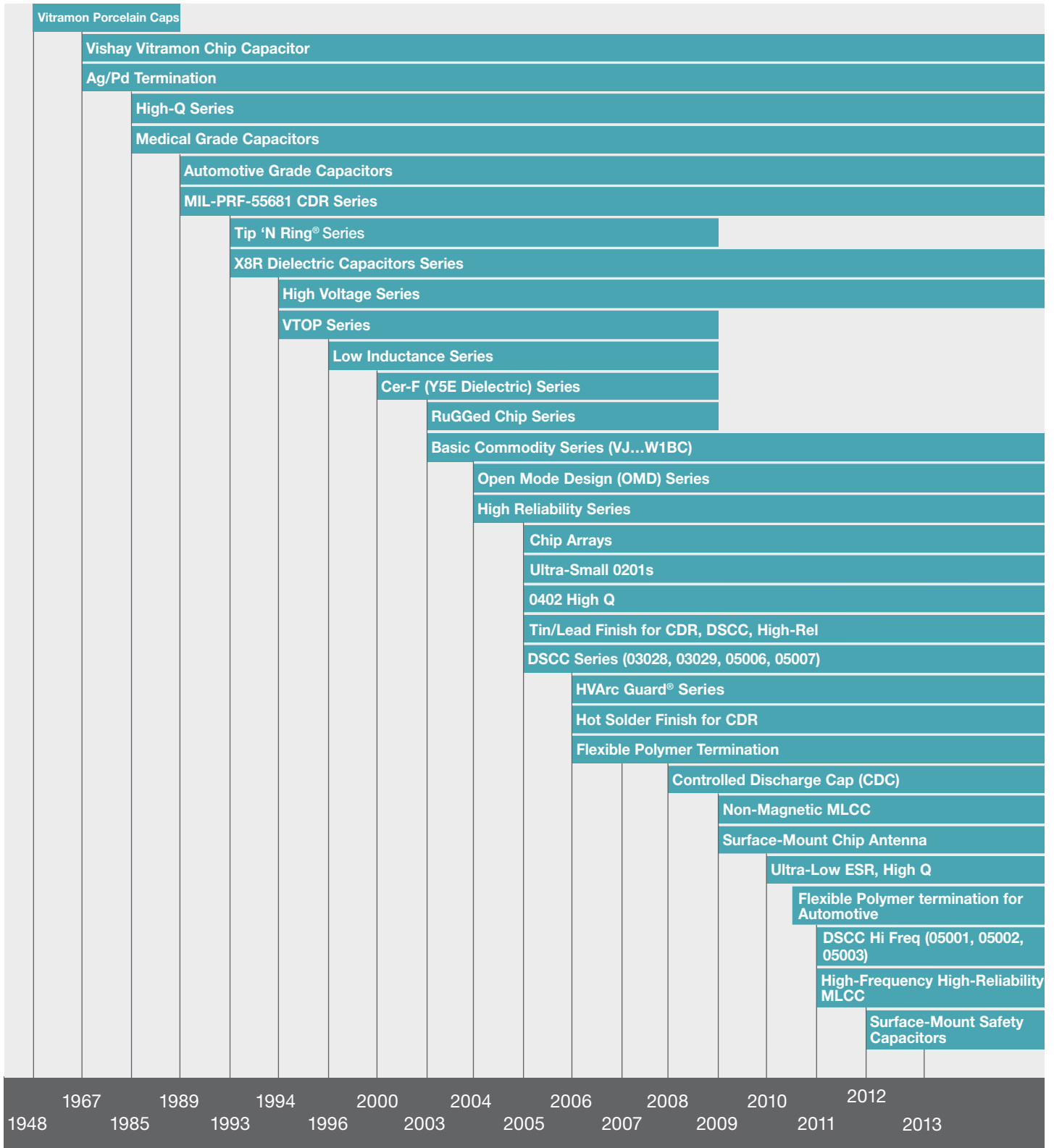
**DISCLAIMER** All product specifications and data are subject to change without notice. Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product. Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications. Product names and markings noted herein may be trademarks of their respective owners.

# MULTILAYER CERAMIC CHIP CAPACITORS PRODUCTS ROAD MAP

Vishay Vitramon



## Surface-Mount Products



## SEMICONDUCTORS:

Rectifiers • High-Power Diodes and Thyristors • Small-Signal Diodes • Zener and Suppressor Diodes  
• FETs • Optoelectronics • ICs • Modules

## PASSIVE COMPONENTS:

Resistive Products • Magnetics • Capacitors



One of the World's Largest Manufacturers of  
**Discrete Semiconductors and Passive Components**

## WORLDWIDE SALES CONTACTS

### THE AMERICAS

#### UNITED STATES

VISHAY AMERICAS  
ONE GREENWICH PLACE  
SHELTON, CT 06484  
UNITED STATES  
PH: +1-402-563-6866  
FAX: +1-402-563-6296

### ASIA

#### SINGAPORE

VISHAY INTERTECHNOLOGY ASIA PTE LTD.  
37A TAMPINES STREET 92 #07-00  
SINGAPORE 528886  
PH: +65-6788-6668  
FAX: +65-6788-0988

#### P.R. CHINA

VISHAY CHINA CO., LTD.  
15D, SUN TONG INFOPORT PLAZA  
55 HUAI HAI WEST ROAD  
SHANGHAI 200030  
P.R. CHINA  
PH: +86-21-5258 5000  
FAX: +86-21-5258 7979

#### JAPAN

VISHAY JAPAN CO., LTD.  
SHIBUYA PRESTIGE BLDG. 4F  
3-12-22, SHIBUYA  
SHIBUYA-KU  
TOKYO 150-0002  
JAPAN  
PH: +81-3-5466-7150  
FAX: +81-3-5466-7160

### EUROPE

#### GERMANY

VISHAY ELECTRONIC GMBH  
GEHEIMRAT-ROSENTHAL-STR. 100  
95100 SELB  
GERMANY  
PH: +49-9287-71-0  
FAX: +49-9287-70435

#### FRANCE

VISHAY S.A.  
199, BLVD DE LA MADELEINE  
06003 NICE, CEDEX 1  
FRANCE  
PH: +33-4-9337-2727  
FAX: +33-4-9337-2726

#### UNITED KINGDOM

VISHAY LTD.  
SUITE 6C, TOWER HOUSE  
ST. CATHERINE'S COURT  
SUNDERLAND ENTERPRISE PARK  
SUNDERLAND SR5 3XJ  
UNITED KINGDOM  
PH: +44-191-516-8584  
FAX: +44-191-549-9556

Build **Vishay**  
into your **Design**

[www.vishay.com](http://www.vishay.com)

VMN-PL0380-1007