

# ANTREX Electronics

Electronic Components Sourcing Information

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## Product Reference Information

**Part Number:** VCAS04AP181R5DATWA  
**Manufacturer:** KYOCERA AVX  
**Package:** 0402 (1005 Metric)  
**Availability:** Please confirm with sales

**Product Page:**

<https://antrexco.com/product/details/kyocera-avx/vcas04ap181r5datwa.html>

**Request a Quote:**

[Submit RFQ for this part](#)



Scan for product page

## Contact Information

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WhatsApp: +86-186-8066-5326

Website: <https://antrexco.com>

## Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

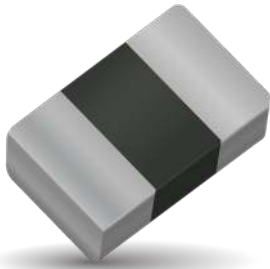
Secure sourcing support for OEM / EMS projects

**Note:**

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

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#### GENERAL DESCRIPTION

KYOCERA AVX ASPGuard® products are an ultra low capacitance extension of reliable AntennaGuard range with new voltage, capacitance and energy ratings. Designed for use in RF circuits, sensors, high-speed lines, optic circuits and capacitance sensitive applications.

The ability to handle larger transients makes the ASPGuard® series useful in applications where capacitance sensitive circuit needs to be protected against higher energy and AEC-Q200 qualification allows for use in automotive applications.

These low capacitance values have low insertion loss, low leakage current and unsurpassed reliability compared to diode options. These advantages combined with size advantages and bi-directional protection make the ASPGuard® the right choice for automotive and general applications, that are sensitive to capacitance.

#### GENERAL CHARACTERISTICS

- Operating Temperature: -55°C to +150°C
- Case Size: 0402, 0603
- Working Voltage: 18 - 70Vdc
- Capacitance: 1.5 - 4.7pF
- Energy: 0.02 - 0.04J
- Peak Current: 1 - 3A

#### FEATURES

- AEC-Q200 Qualified
- 25kV ESD rating
- Meet 48Vdc Jump Start requirements
- Multi-strike capability
- Sub 1nS response to ESD strike

#### APPLICATIONS

- RF Circuit
- Sensors
- Antennas
- Data lines
- Radars
- Bluetooth
- Ethernet (IEEE 802.3bw and IEEE 802.3bp)
- VCAS06AP303R3LAT

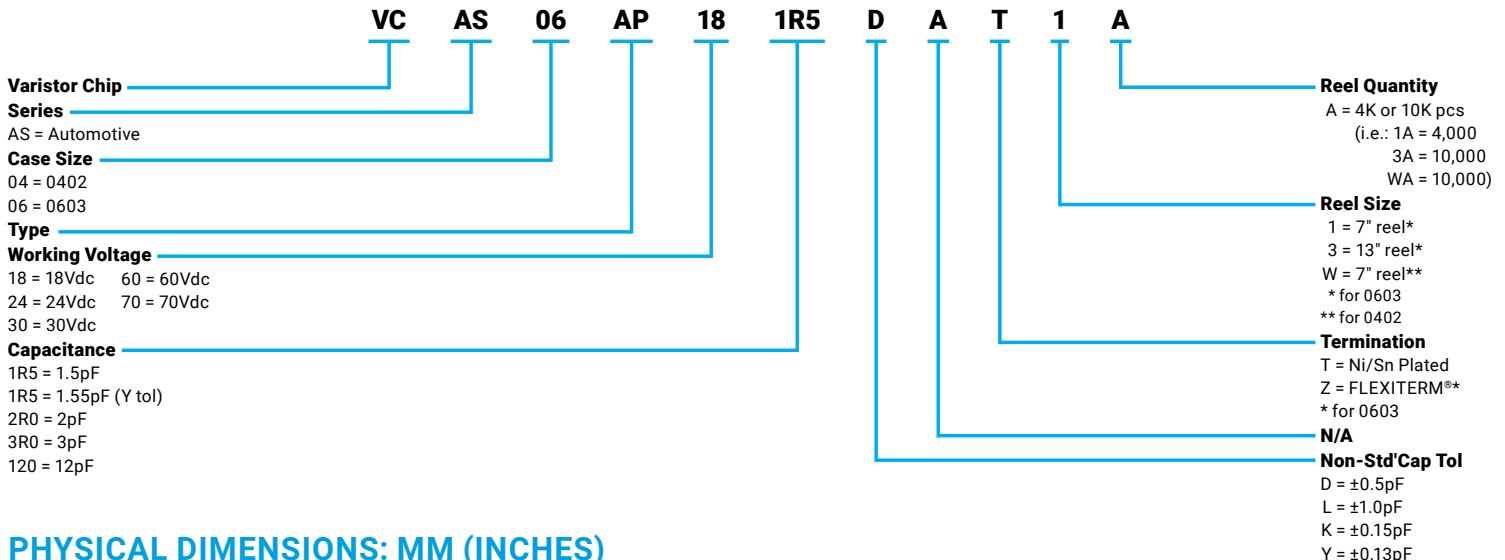
KYOCERA AVX is an adopting member of the OPEN Alliance to collaborate with other technology providers and the customers to further develop and standardize Ethernet-based networks in Automotive applications.

The following parts are fully compliant and qualified for OPEN Alliance Ethernet standards:

- 1000BASE-T1 Ethernet: VCAS04AP701R5YATWA
- 100BASE-T1 Ethernet: VCAS04AP704R7LATWA

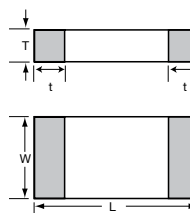


#### HOW TO ORDER



#### PHYSICAL DIMENSIONS: MM (INCHES)

| Size (EIA) | Length (L)                 | Width (W)                  | Max Thickness (T) | Land Length (t)            |
|------------|----------------------------|----------------------------|-------------------|----------------------------|
| 0402       | 1.00±0.10<br>(0.040±0.004) | 0.50±0.10<br>(0.020±0.004) | 0.60<br>(0.024)   | 0.25±0.15<br>(0.010±0.006) |
| 0603       | 1.60±0.15<br>(0.063±0.006) | 0.80±0.15<br>(0.031±0.006) | 0.90<br>(0.035)   | 0.35±0.15<br>(0.014±0.006) |



**ELECTRIAL CHARACTERISTICS**

| Part Number     | V <sub>w</sub> (DC) | V <sub>w</sub> (AC) | V <sub>B</sub> | V <sub>C</sub> | I <sub>L</sub> | E <sub>T</sub> | I <sub>P</sub> | Cap  | Cap Tolerance | V <sub>Jump</sub> | Case Size |
|-----------------|---------------------|---------------------|----------------|----------------|----------------|----------------|----------------|------|---------------|-------------------|-----------|
| VCAS04AP181R5KA | 18                  | 14                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.5  | ±0.15pF       | 48                | 0402      |
| VCAS04AP181R5DA | 18                  | 14                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.5  | ±0.5pF        | 48                | 0402      |
| VCAS04AP181R5YA | 18                  | 14                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.55 | ±0.13pF       | 48                | 0402      |
| VCAS04AP182R0LA | 18                  | 14                  | 80-140         | 300            | 0.1            | 0.02           | 1              | 2.0  | ±1.0pF        | 48                | 0402      |
| VCAS06AP181R5DA | 18                  | 14                  | 150-200        | 375            | 0.1            | 0.02           | 1              | 1.5  | ±0.5pF        | 48                | 0603      |
| VCAS06AP182R0LA | 18                  | 14                  | 150-200        | 350            | 0.1            | 0.03           | 2              | 2.0  | ±1.0pF        | 48                | 0603      |
| VCAS06AP243R3LA | 24                  | 17                  | 90-150         | 240            | 0.1            | 0.04           | 3              | 3.3  | ±1.0pF        | 48                | 0603      |
| VCAS04AP301R5KA | 30                  | 21                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.5  | ±0.15pF       | 48                | 0402      |
| VCAS04AP301R5DA | 30                  | 21                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.5  | ±0.5pF        | 48                | 0402      |
| VCAS04AP301R5YA | 30                  | 21                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.55 | ±0.13pF       | 48                | 0402      |
| VCAS06AP302R0LA | 30                  | 21                  | 150-200        | 350            | 0.1            | 0.03           | 2              | 2.0  | ±1.0pF        | 48                | 0603      |
| VCAS06AP303R3LA | 30                  | 21                  | 90-150         | 240            | 0.1            | 0.04           | 3              | 3.3  | ±1.0pF        | 48                | 0603      |
| VCAS04AP423R5LA | 42                  | 32                  | 50.4-61.6      | 135            | 10             | 0.03           | 2              | 3.5  | ±1.0pF        | 48                | 0402      |
| VCAS06AP423R54A | 42                  | 32                  | 50.4-61.6      | 135            | 10             | 0.03           | 2              | 3.5  | ±2.0pF        | 48                | 0603      |
| VCAS04AP601R5DA | 60                  | 42                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.5  | ±0.5pF        | 48                | 0402      |
| VCAS06AP602R0LA | 60                  | 42                  | 150-200        | 350            | 0.1            | 0.03           | 2              | 2.0  | ±1.0pF        | 48                | 0603      |
| VCAS06AP603R3LA | 60                  | 42                  | 90-150         | 240            | 0.1            | 0.04           | 3              | 3.3  | ±1.0pF        | 48                | 0603      |
| VCAS04AP701R5KA | 70                  | 52                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.5  | ±0.15pF       | 48                | 0402      |
| VCAS04AP701R5DA | 70                  | 52                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.5  | ±0.5pF        | 48                | 0402      |
| VCAS04AP701R5YA | 70                  | 52                  | 150-210        | 350            | 0.1            | 0.02           | 1              | 1.55 | ±0.13pF       | 48                | 0402      |
| VCAS04AP704R7LA | 70                  | 52                  | 90-110         | 190            | 1              | 0.03           | 1              | 4.7  | ±1pF          | 48                | 0402      |
| VCAS06AP701R5DA | 70                  | 52                  | 150-200        | 375            | 1              | 0.02           | 1              | 1.5  | ±0.5pF        | 48                | 0603      |
| MGAS04AP704R7LA | 70                  | 52                  | 102-138        | 225            | 10             | 0.02           | 3              | 4.7  | ±1pF          | 48                | 0405 2x   |

V<sub>w</sub> (DC) DC Working Voltage [V] VB

V<sub>w</sub> (AC) AC Working Voltage [V]

V<sub>B</sub> Breakdown Votage [V @ 1mA<sub>DC</sub>]

V<sub>C</sub> Clamping Votage [V @ 1A]

I<sub>L</sub> Maximum leakage current at the working voltage [μA]

E<sub>T</sub> Transient Energy Rating [J, 10x1000μS]

I<sub>P</sub> Peak Current Rating [A, 8x20μS]

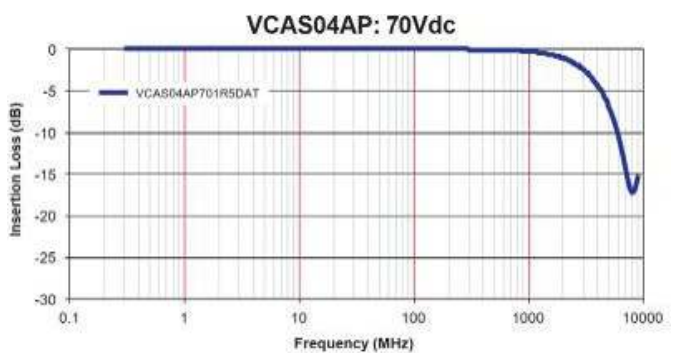
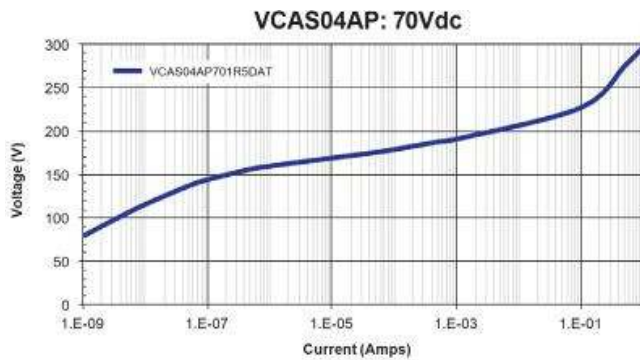
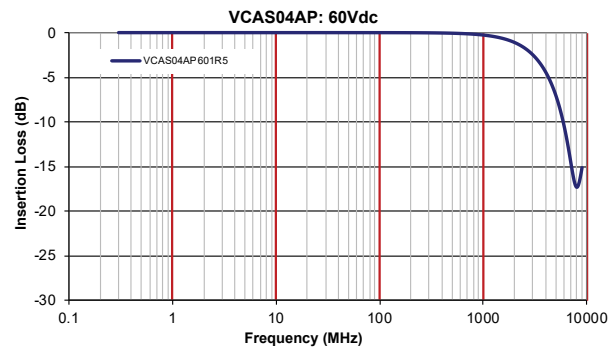
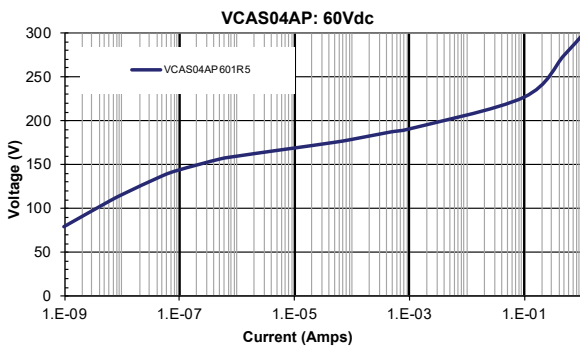
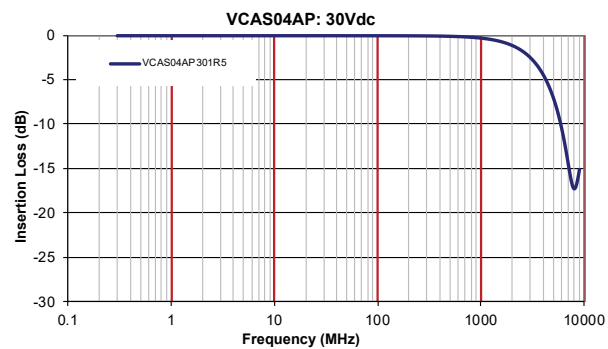
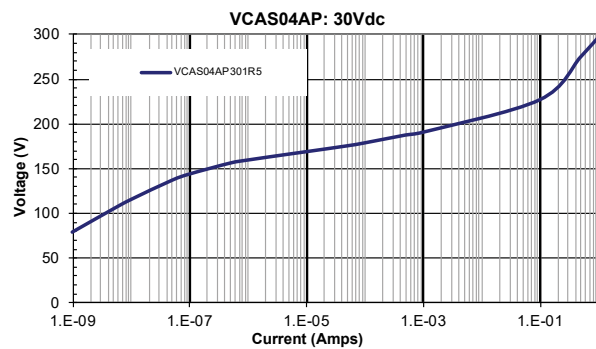
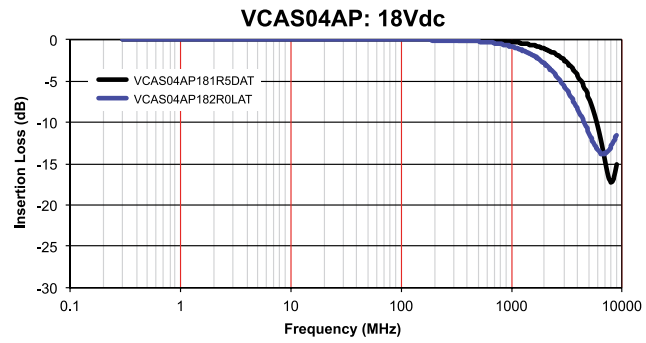
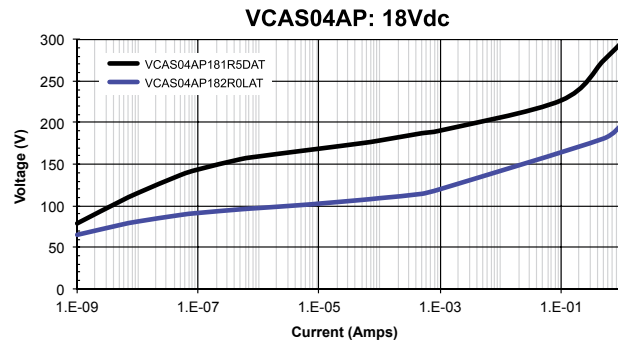
Cap Capacitance [pF] @ 1MHz specified and 0.5VRMS

Cap Tol Capacitance tolerance (pF) from Typ value

V<sub>Jump</sub> Jump Start (V, 5min)

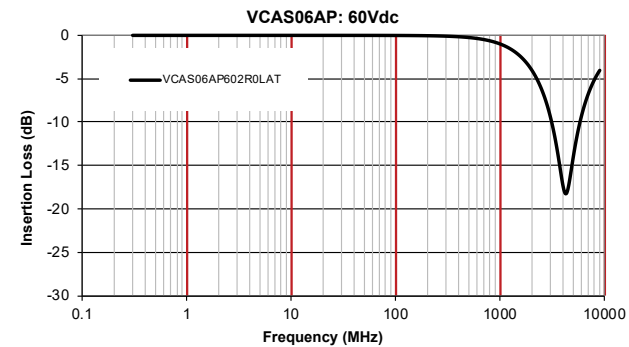
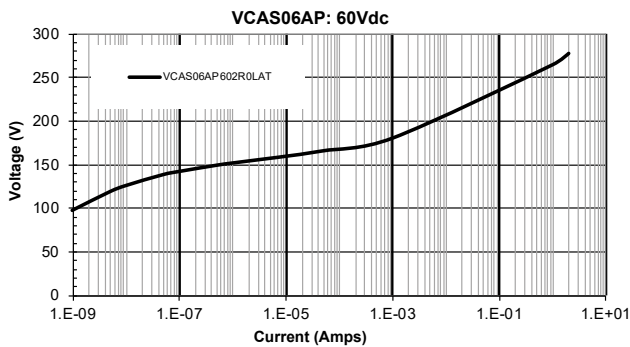
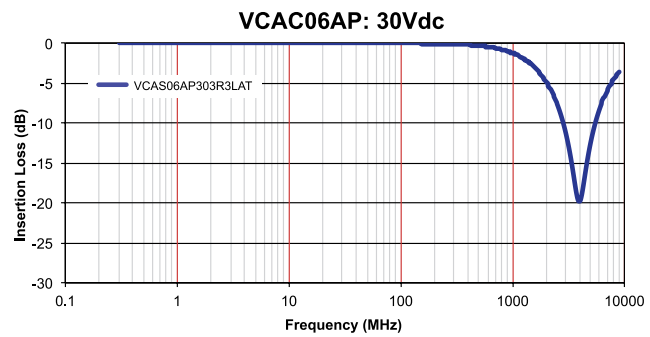
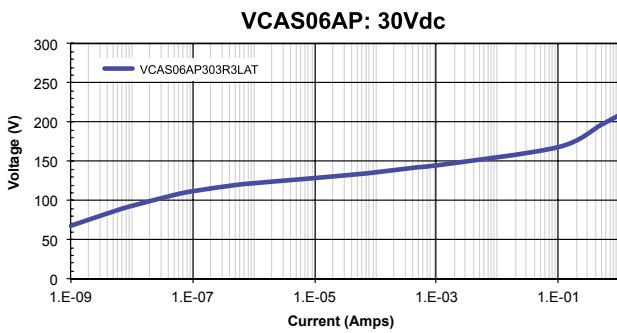
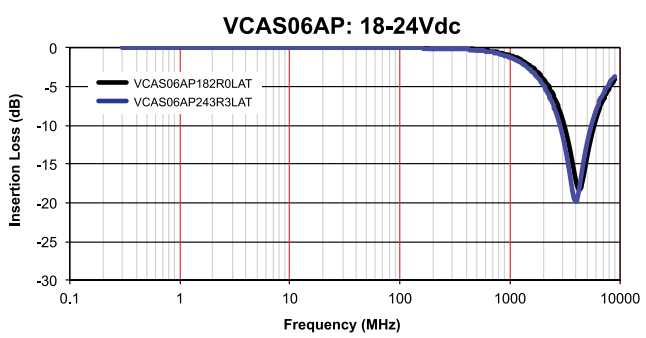
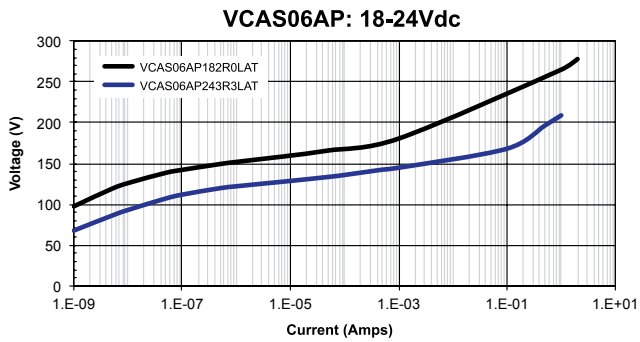
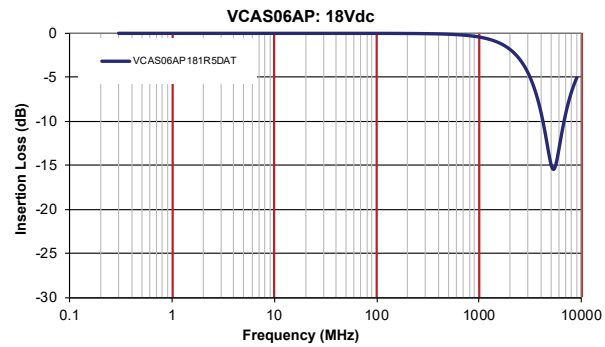
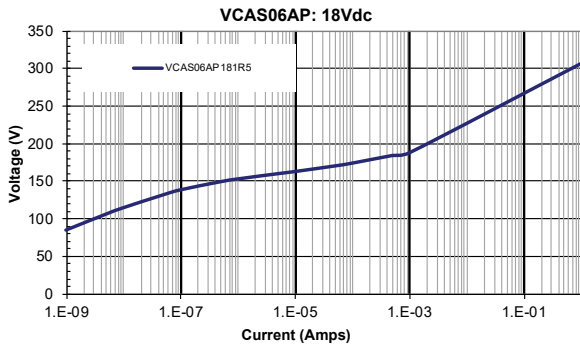
## V/I CHARACTERISTICS

## S21 CHARACTERISTICS



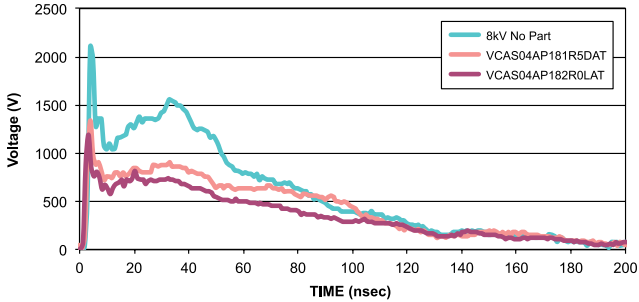
## V/I CHARACTERISTICS

## S21 CHARACTERISTICS

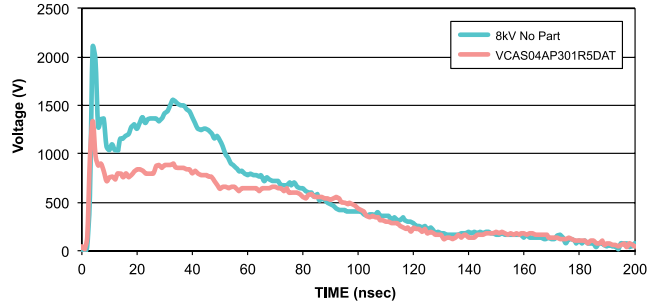


## ESD CHARACTERISTIC

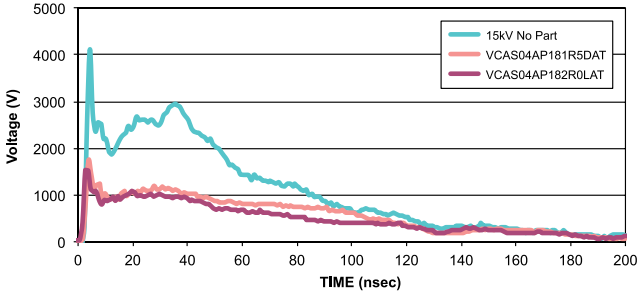
**8kV ESD Vc Wave Capture  
(150pF/330ohm Network)**



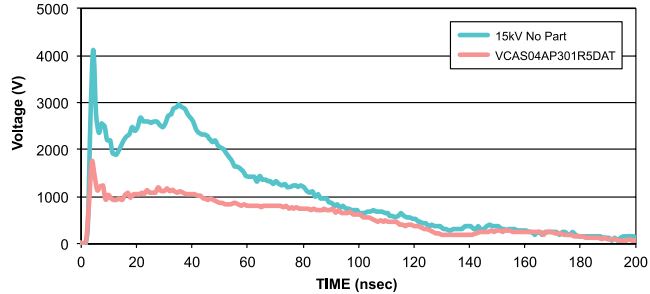
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(150pF/330ohm Network)**



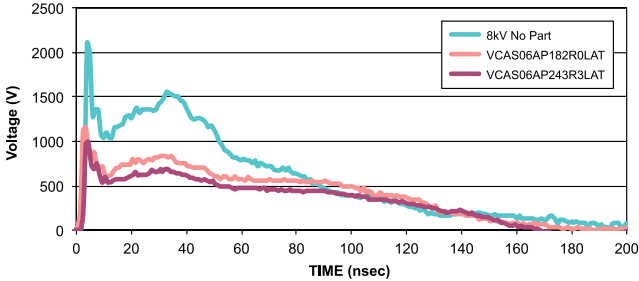
**15kV ESD Vc Wave Capture  
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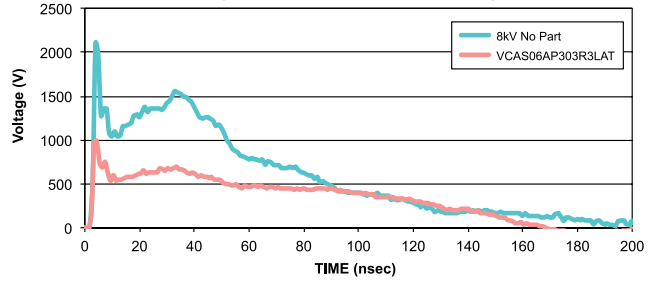
**15kV ESD Vc Wave Capture  
(150pF/330ohm Network)**



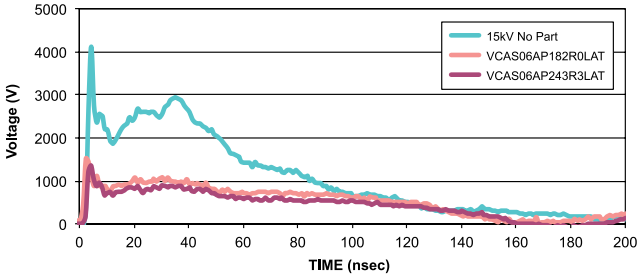
**8kV ESD Vc Wave Capture  
(150pF/330ohm Network)**



**8kV ESD Vc Wave Capture  
(150pF/330ohm Network)**



**15kV ESD Vc Wave Capture  
(150pF/330ohm Network)**



**15kV ESD Vc Wave Capture  
(150pF/330ohm Network)**

