



Click [here](#) for the 3D model.

#### General Information

|                          |                                             |
|--------------------------|---------------------------------------------|
| Series                   | T489                                        |
| Dielectric               | MnO <sub>2</sub> Tantalum                   |
| Style                    | SMD Chip                                    |
| Description              | SMD, MnO <sub>2</sub> , Molded, Low Leakage |
| Features                 | Low Leakage                                 |
| RoHS                     | Yes                                         |
| Termination              | Tin                                         |
| AEC-Q200                 | No                                          |
| Typical Component Weight | 107.45 mg                                   |
| Shelf Life               | 156 Weeks                                   |
| MSL                      | 1                                           |

#### Specifications

|                    |                                |
|--------------------|--------------------------------|
| Capacitance        | 22 uF                          |
| Tolerance          | 10%                            |
| Voltage DC         | 16 VDC (85C), 10.72 VDC (125C) |
| Temperature Range  | -55/+125°C                     |
| Rated Temperature  | 85°C                           |
| Dissipation Factor | 6% 120Hz 25C                   |
| Failure Rate       | N/A                            |
| ESR                | 1100 mOhms (100kHz 25C)        |
| Ripple Current     | 278 mA (rms, 100kHz 25C)       |
| Leakage Current    | 2.6 uA (5min 25°C)             |

#### Dimensions

|   |                    |
|---|--------------------|
| L | 3.5mm +/-0.2mm     |
| W | 2.8mm +/-0.2mm     |
| H | 1.9mm +/-0.2mm     |
| T | 0.13mm REF         |
| S | 0.8mm +/-0.3mm     |
| F | 2.2mm +/-0.1mm     |
| A | 1.9mm MIN          |
| B | 0.4mm +/-0.15mm    |
| E | 2.2mm REF          |
| G | 1.8mm REF          |
| P | 0.5mm REF          |
| R | 1mm REF            |
| X | 0.1mm +/-0.1mm REF |

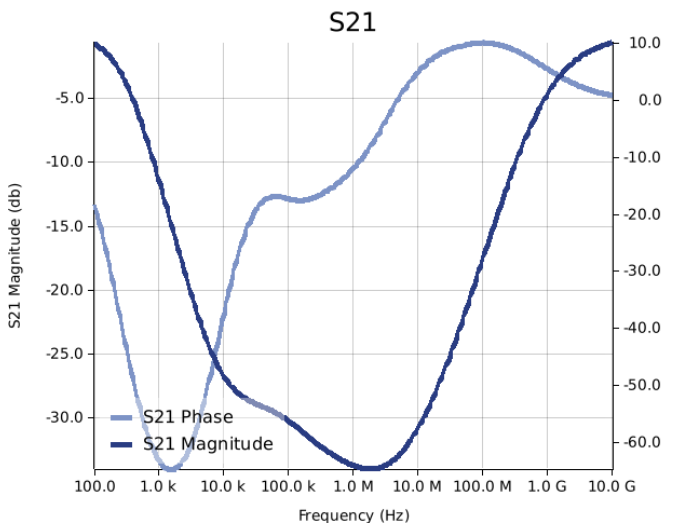
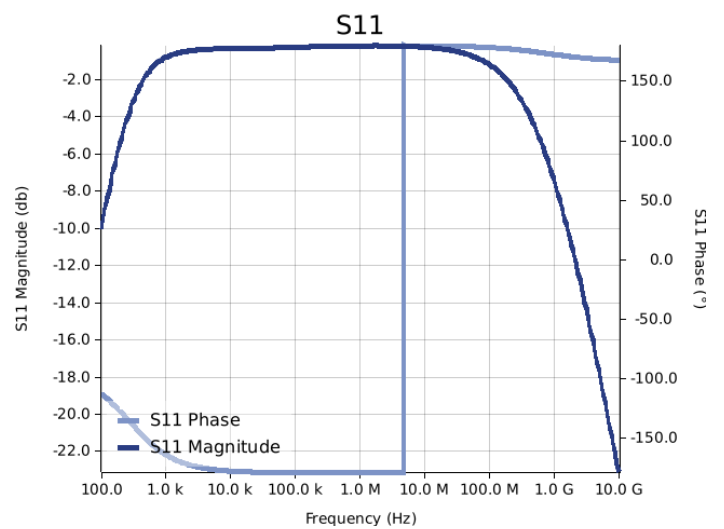
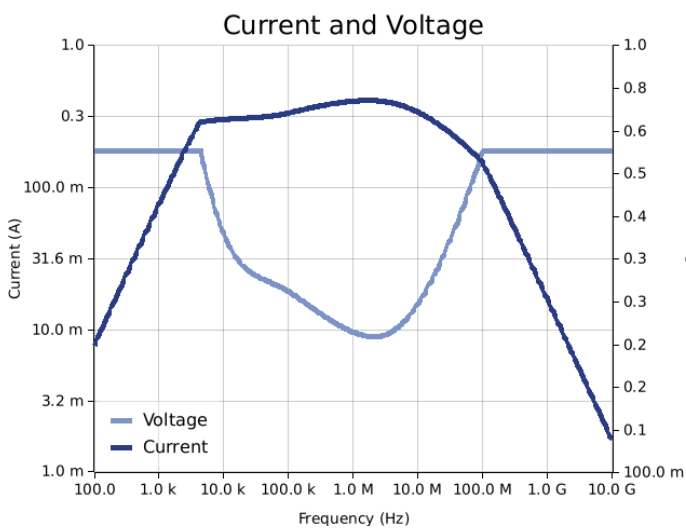
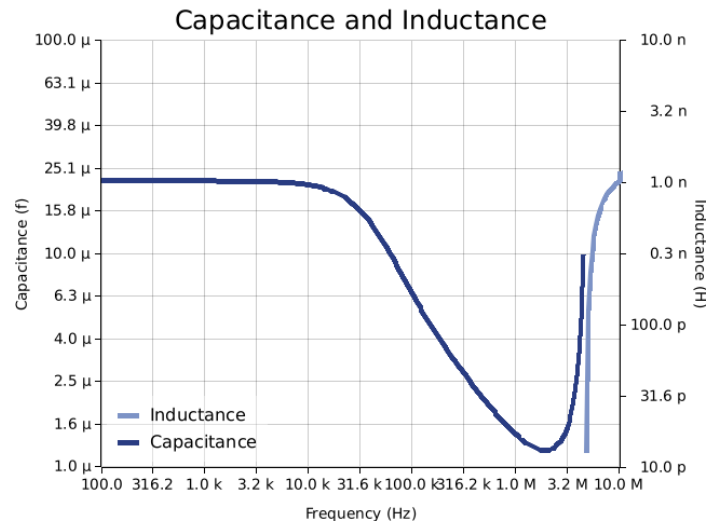
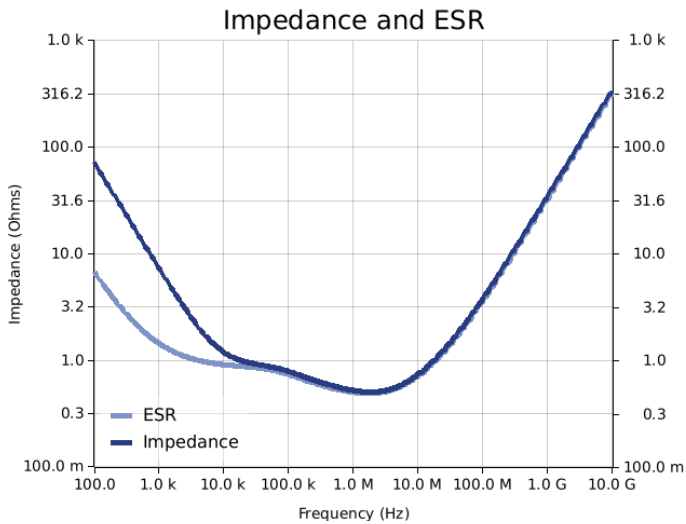
#### Packaging Specifications

|                    |            |
|--------------------|------------|
| Packaging          | T&R, 178mm |
| Packaging Quantity | 2000       |

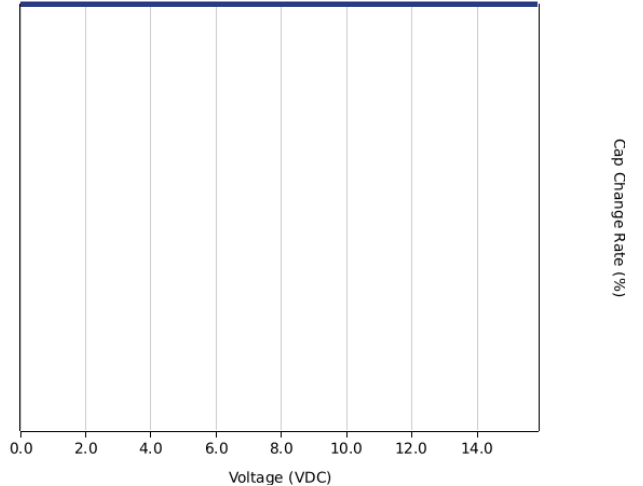
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## Simulations

For the complete simulation environment please visit [Y-SIM](#).



### Capacitance Change vs. DC Voltage Bias



**These are simulations.**  
This is not a specification!

The responses shown represent the typical response for each part type. Specific responses may vary, depending on manufacturing variation effects of all parameters involved, including the specified tolerances applied to capacitance and unspecified variations of ESR, ESL, and leakage resistance.

The responses shown do not represent a specified or implied maximum capability of the device for all applications.

- The ESR used for ripple "Ripple Current/Voltage vs. Frequency" plots is the ESR at ambient temperature.
- The ESR in the "Temperature Rise vs. Ripple Current" plots is adjusted to each incremental temperature rise before the power and ripple current is calculated.
- The effects shown herein are based on measured data from a multiple part sample of the parts in question.
- Ripple capability of this device will be factored by thermal resistance (R<sub>th</sub>) created by circuit traces (addi affects of all parameters involved, including the specified tolerances applied to capacitance and unspecified variations of ESR, ESL, and leakage resistance).
- The peak voltages generated in the "Temperature Rise vs. Combined Ripple Currents" plot are calculated for each frequency and are not combined with voltages generated at any other harmonics.
- Please consult with the catalog or field applications engineer for maximum capability of the device in specific applications.

All product information and data (collectively, the "Information") are subject to change without notice.

KEMET K-SIM is designed to simulate behavior of components with respect to frequency, ambient temperature, and DC bias levels. The responses shown represent the typical response for each part type. Specific responses may vary, depending on manufacturing variation effects of all parameters involved, including the specified tolerances applied to capacitance and unspecified variations of ESR, ESL, and leakage resistance.

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If you have any questions please contact K-SIM.