



DID YOU KNOW?

HOW TO AVOID OVER-SPECIFYING DURING COMPONENT SHORTAGES

A New MLCC Replacement Guide from Vishay

In many designs the voltage ratings of multilayer ceramic capacitors (MLCC) are over-specified. The reasons for this are many, including reducing the number of part numbers on the PCB board and designing common part numbers into the circuit.

During shortages, however, this over-specification can result in more costly substitution / replacement devices being ordered. Vishay has developed a quick reference guide for many common case size and applied voltage options to better meet the “real” requirements of the design and therefore enable more cost-effective solutions to be identified.

On this quick guide webpage, the information is organized by applied voltage, case size, and capacitance. Please note, applied voltage is the DC bias voltage level that will be present on the capacitor during operation. For example, for a capacitor with an applied voltage of 12 V, devices with a rated voltage of 16 V will be offered. Polymer capacitors require a 20 % voltage derating. Please note that applied voltage is not a maximum voltage as long as the 20 % derating is met (e.g. $16\text{ V} * 80\% = 12.8\text{ V}$).

[Go to the MLCC - Polymer Replacement Guide](#)

MLCC - Polymer / Tantalum Substitution

A Guide to Substituting Surface-Mount MLCCs with Solid Tantalum or Tantalum Polymer Capacitors

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Select Your Applied Voltage to Get Started

2 V 3.3 V 5 V 12 V 28 V

NEED HELP? PART NOT COVERED?
If you have any questions about this information or wish to have our team of experts propose a cross for a part not covered here, please contact tantalum@vishay.com.

Please note, any Vishay part number returned by this cross-reference tool is not guaranteed to be an exact technical or mechanical equivalent of the component part. Please review the Vishay datasheet for detailed specifications.

QUICK REFERENCE

MLCC Cross-Reference
[View Guide >](#)

Engineering Considerations for Substitution of Tantalum and Polymer for MLCCs
[Read More >](#)

MLCC - Polymer / Tantalum Substitution

APPLIED VOLTAGE: 28 V (OR LESS) (DC BIAS)

MLCC Case Size / EIA Metric	APPROX DROP-IN CASE SIZES					ALTERNATE CASE SIZES	Footprint / Pad Layout
	6402 / 1605	6603 / 1608	8005 / 2012	1206 / 3216	1210 / 3225		
1 µF		T58M150M03CC3500 1µF 20V 100°C 3528	T58W100M03CC6500 1µF 20V 100°C 3528				<ul style="list-style-type: none"> MM-case 1608-10 (0003) WP-case 2013-09 (0005) B-case 3528-21 (1411) V-case 7343-20 (2917) D-case 7343-31 (2917)
2.2 µF							
6.8 µF				T58M150M03CC3206 6.8µF 20V 100°C 3528			
10 µF				T58B100M03CC3206 10µF 20V 100°C 3528			
15 µF					T59V150M03CC0125 15µF 20V 100°C 27343		
22 µF					T59V220M03CC0175 22µF 20V 100°C 27343		
33 µF					T59D330M03CC0100 33µF 20V 100°C 27343		

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