

## Industrial Sample Kit vPolyTan™ Polymer Surface Mount Chip Capacitors



### FEATURES

- Low ESR
- 100 % surge current tested
- Accelerated voltage conditioning
- High ripple current capability
- Stable capacitance in operating temperature range
- Better capacitance stability vs frequency
- No wear out effect
- Molded case 3528 and 7343 EIA size
- Terminations: wraparound
- Operating temperature: -55 °C to +105 °C
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### LINKS TO ADDITIONAL RESOURCES



### APPLICATIONS

- Decoupling, smoothing, filtering
- Bulk energy storage
- Infrastructure equipment
- Storage and networking
- Computer motherboards
- Smartphones and tablets

SPECIFICATIONS	
Part number	POLYTAN-ENGKIT-IND
Capacitor type	Molded chip polymer tantalum
Capacitor tolerance	± 20 %
Operating temperature range	-55 °C to +105 °C
Termination finish	Sn/Pb (T59), Sn (T58)
Moisture sensitivity level	3
Number of capacitors	See Capacitance Value List table

DIMENSIONS in inches [millimeters]						
CASE CODE	EIA SIZE	H (MAX.)	L	W	P1	P2
BB	3528-20	0.079 [2.0]	0.138 ± 0.012 [3.5 ± 0.2]	0.110 ± 0.008 [2.8 ± 0.2]	0.031 ± 0.008 [0.8 ± 0.2]	0.077 [1.95]
EE	7343-43	0.169 [4.3]	0.287 ± 0.012 [7.3 ± 0.3]	0.169 ± 0.012 [4.3 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.3]	0.191 [4.85]



<b>CAPACITANCE VALUE LIST</b>					
<b>PART NUMBER</b>	<b>CAPACITANCE (μF)</b>	<b>VOLTAGE (V)</b>	<b>CASE CODE (SEE DIMENSIONS TABLE)</b>	<b>MAX. ESR AT +25 °C 1000 kHz (mΩ)</b>	<b>NUMBER OF CAPACITORS</b>
T59EE227M016C0025	220	16	EE	25	6
T59EE337M016C0025	330	16	EE	25	6
T59EE477M016C0020	470	16	EE	20	6
T59EE157M030C0075	150	30	EE	75	6
T59EE476M035C0055	47	35	EE	55	6
T59EE226M050C0100	22	50	EE	100	3
T59EE156M063C0100	15	63	EE	100	3
T59EE226M063C0100	22	63	EE	100	6
T59EE156M063C0100	15	63	EE	100	6
T59EE226M075C0100	22	75	EE	100	6
T58BB476M016C0090	47	16	BB	90	6
T58BB226M025C0100	22	25	BB	100	6

<b>RECOMMENDED VOLTAGE DERATING GUIDELINES</b>	
<b>CAPACITOR VOLTAGE RATING</b>	<b>OPERATING VOLTAGE</b>
2.5	2.3
4.0	3.6
6.3	5.7
7.0	6.3
10	9.0
12.5	11.2
16	12.8
20	16
25	20
35	28
50	40
63	50



T59 PERFORMANCE CHARACTERISTICS			
ITEM	CONDITION	POST TEST PERFORMANCE	
Life test at +105 °C	2000 h application of rated voltage at 105 °C, MIL-STD-202 method 108	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limits
		Leakage current	Shall not exceed 300 % of initial limit
Shelf life test at +105 °C	2000 h no voltage applied at 105 °C, MIL-STD-202 method 108	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limits
		Leakage current	Shall not exceed 300 % of initial limit
Humidity tests	At 60 °C / 90 % RH 500 h, no voltage applied	Capacitance change	-20 % to +40 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit
Stability at low and high temperatures	-55 °C	Capacitance change	Within -20 % to 0 % of initial value
		Dissipation factor	Shall not exceed 150 % of initial limit
		Leakage current	n/a
	25 °C	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Within initial limit
	85 °C	Capacitance change	Within -0 % to +50 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 1000 % of initial value
	105 °C	Capacitance change	Within -0 % to +50 % of initial value
		Dissipation factor	Within initial limits
		Leakage current	Shall not exceed 1000 % of initial limits
Surge voltage	85 °C, 1000 successive test cycles at 1.3 of rated voltage in series with a 33 Ω resistor at the rate of 30 s ON, 30 s OFF	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit
Shock (specified pulse)	MIL-STD-202, method 213, condition E, 1000 g peak	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit
Vibration	MIL-STD-202, method 204, condition D, 10 Hz to 2000 Hz 20 g peak	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit
		There shall be no mechanical or visual damage to capacitors post-conditioning.	
Shear test	Apply a pressure load of 17.7 N for 10 s ± 1 s horizontally to the center of capacitor side body	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit



T58 PERFORMANCE CHARACTERISTICS			
ITEM	CONDITION	POST TEST PERFORMANCE	
Life test at +105 °C	2000 h application of rated voltage at 105 °C, MIL-STD-202 method 108	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limits
		Leakage current	Shall not exceed 300 % of initial limit
Humidity tests	At 60 °C / 90 % RH 500 h, no voltage applied	Capacitance change	-20 % to +40 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit
Stability at low and high temperatures	-55 °C	Capacitance change	Within -20 % to 0 % of initial value
		Dissipation factor	Shall not exceed 150 % of initial limit
		Leakage current	n/a
	25 °C	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Within initial limit
	105 °C	Capacitance change	Within -50 % to +30 % of initial value
		Dissipation factor	Within initial limits
		Leakage current	Shall not exceed 1000 % of initial limits
Surge voltage	85 °C, 1000 successive test cycles at 1.3 of rated voltage in series with a 1 kΩ resistor at the rate of 30 s ON, 30 s OFF	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit
Shock (specified pulse)	MIL-STD-202, method 213, condition I, 100 g peak	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit
Vibration	MIL-STD-202, method 204, condition D, 10 Hz to 2000 Hz 20 g peak	There shall be no mechanical or visual damage to capacitors post-conditioning.	
Shear test	Apply a pressure load of 5 N for 10 s ± 1 s horizontally to the center of capacitor side body	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit