AMS Sample Kit
vPolyTan™ Polymer Surface Mount Chip Capacitors

LINKS TO ADDITIONAL RESOURCES

3D Models | SPICE Models | Calculators

FEATURES

- Ultra low ESR
- High reliability processing including:
  - 100 % surge current tested
  - Accelerated voltage conditioning
  - Thermal shock
  - Statistical DC leakage screening at elevated temperature and voltage, covered by U.S. patent and worldwide patents pending. PATENT(S): www.vishay.com/patents
- High ripple current capability
- Stable capacitance in operating temperature range
- Better capacitance stability vs frequency
- No wear out effect
- Molded case 7343 EIA size
- Terminations: wraparound (T54), J-leads (T56)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

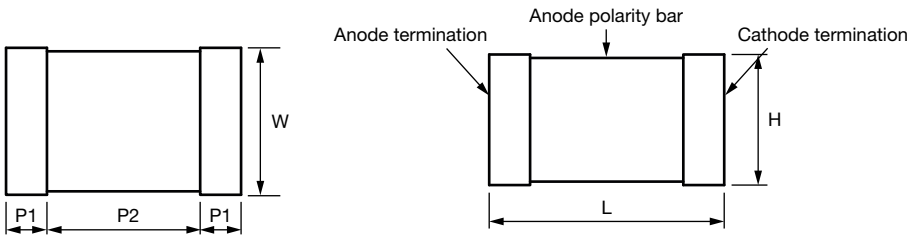
Pb-free RoHS COMPLIANT HALOGEN FREE GREEN (5-2008)

APPLICATIONS

- Decoupling, smoothing, filtering
- Switch mode and point of load power supply
- Infrastructure equipment
- Storage and networking

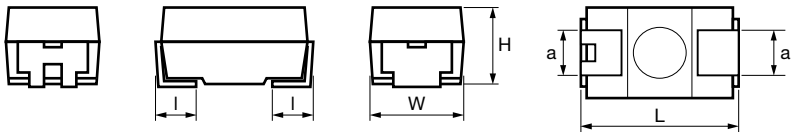
SPECIFICATIONS	
Part number	POLYTAN-KIT-AMS
Capacitor type	Conductive polymer
Capacitor tolerance	± 20 %
Operating temperature range	-55 °C to +125 °C (T54); -55 °C to +105 °C (T56)
Termination finish	Sn / Pb (T54), Ni / Pd / Au (T56)
Moisture sensitivity level	3
Number of capacitors	See Capacitance Value List table

T54 DIMENSIONS in inches [millimeters]



CASE CODE	EIA SIZE	H (MAX.)	L	W	P1	P2 (REF.)
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]

T56 DIMENSIONS in inches [millimeters]



CASE CODE	EIA SIZE	L	W	H	l	a
D	7343-31	0.287 ± 0.008 [7.3 ± 0.2]	0.169 ± 0.012 [4.3 ± 0.3]	0.110 ± 0.012 [2.8 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.3]	0.094 ± 0.008 [2.4 ± 0.2]

CAPACITANCE VALUE LIST

PART NUMBER	CAPACITANCE (µF)	VOLTAGE (V)	CASE CODE (SEE DIMENSIONS TABLE)	MAX. ESR AT +25 °C 1000 kHz (mΩ)	NUMBER OF CAPACITORS
T54EE337M016EZB025	330	16	EE	25	6
T54EE477M016EZB025	470	16	EE	25	6
T54EE157M030EZB075	150	30	EE	75	6
T54EE476M035EZB070	47	35	EE	70	6
T54EE226M050EZB100	22	50	EE	100	6
T54EE226M063EZB100	22	63	EE	100	6
T54EE156M075EZB100	15	75	EE	100	6
T56D227M010CZB025	220	10	D	25	10
T56D337M010CZB025	330	10	D	25	10
T56D106M025CZB120	10	25	D	120	10
T56D336M025CZB060	330	25	D	60	10
T56D107M025CZB060	100	25	D	60	10

RECOMMENDED VOLTAGE DERATING GUIDELINES

CAPACITOR VOLTAGE RATING	OPERATING VOLTAGE
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

T54 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
Life test at +125 °C	2000 h application of 2/3 rated voltage at 125 °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 limit
		Leakage current	Shall not exceed 1000 % of initial limit
Surge voltage	105 °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

T56 PERFORMANCE CHARACTERISTICS			
ITEM	**CONDITION**	**POST TEST PERFORMANCE**	
Life test	2000 h application of rated voltage at 105 °C, 2000 h application of 2/3 rated voltage at 125 °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	2000 h no voltage applied at 105 °C, 2000 h no voltage applied at 125 °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 At 85 °C / 85 % RH 500 h, rated voltage applied	Capacitance change	-5 % to +50 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit
Resistance to solder heat	MIL-STD-202, method 210, condition J (SnPb capacitors) and K (Pb-free capacitors)	Capacitance change	Within ± 20 % 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 -30 % 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 -50 % to +30 % 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 limit
		Leakage current	Shall not exceed 1000 % of initial limit
Surge voltage	105 °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 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
		There shall be no mechanical or visual damage to capacitors post-conditioning.	
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 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