



Solid State Drive (SSD) 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 7343 EIA size
- Terminations: undertab
- Operating temperature: -55 °C to +105 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

LINKS TO ADDITIONAL RESOURCES



APPLICATIONS

- Decoupling, smoothing, filtering
- Bulk energy storage in solid state drives (SSD)
- Infrastructure equipment
- Storage and networking
- Computer motherboards
- Smartphones and tablets

SPECIFICATIONS	
Part number	POLYTAN-KIT-SSD
Capacitor type	Conductive polymer
Capacitor tolerance	± 20 %
Operating temperature range	-55 °C to +105 °C
Termination finish	Ni / Pd / Au (T55), Sn (T52)
Moisture sensitivity level	3
Number of capacitors	See Capacitance Value List table

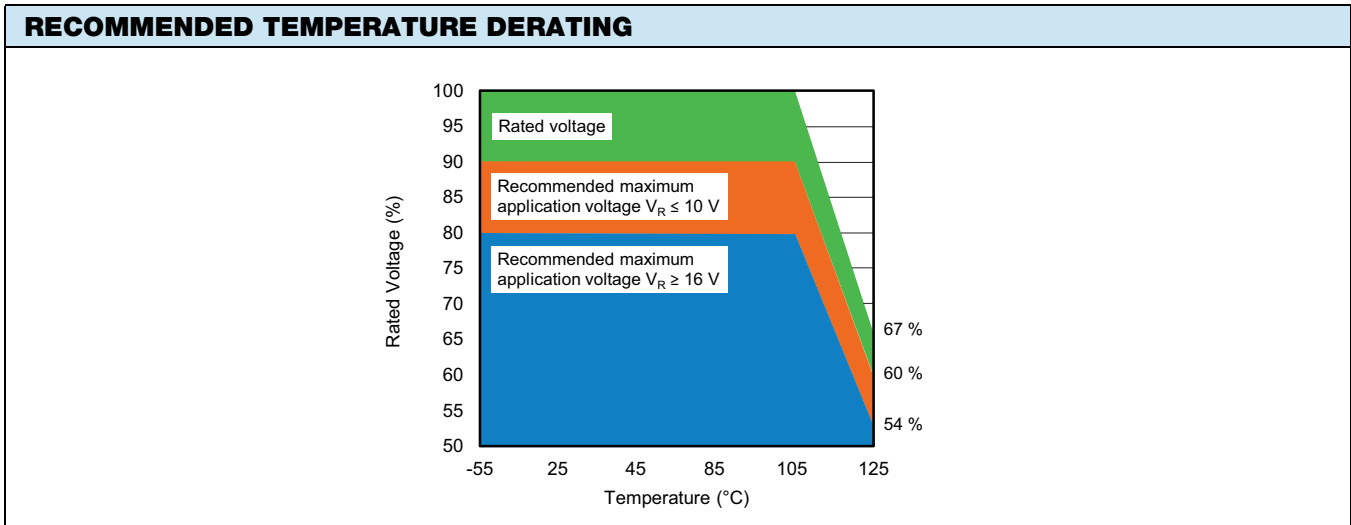
T52 DIMENSIONS in inches [millimeters]									
CASE CODE	EIA SIZE	H (MAX.)	L	W	P1	P2 (REF.)	C	B (REF.)	D (REF.)
E5	7343-15	0.059 [1.5]	0.287 ± 0.012 [7.3 ± 0.3]	0.169 ± 0.012 [4.3 ± 0.3]	0.051 ± 0.008 [1.3 ± 0.2]	0.191 [4.85]	0.094 ± 0.008 [2.4 ± 0.2]	-	-
M1	7360-20	0.079 [2.0]	0.287 ± 0.012 [7.3 ± 0.3]	0.236 ± 0.012 [6.0 ± 0.3]	0.075 ± 0.008 [1.9 ± 0.2]	0.138 [3.5]	0.177 ± 0.008 [4.5 ± 0.2]	0.079 [2.0]	0.020 [0.5]



T55 DIMENSIONS in inches [millimeters]						
CASE CODE	EIA SIZE	L	W	H	l	a
Z	7343-19	0.287 ± 0.008 [7.3 ± 0.2]	0.169 ± 0.012 [4.3 ± 0.3]	0.071 ± 0.004 [1.8 ± 0.1]	0.051 ± 0.012 [1.3 ± 0.3]	0.094 ± 0.008 [2.4 ± 0.2]
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
T52E5157M016C0055	150	16	E5	55	10
T52M1227M016C0055	220	16	M1	55	10
T52M1337M016C0040	330	16	M1	40	10
T52M1157M025C0070	150	25	M1	70	10
T52E5476M035C0070	47	35	E5	70	10
T52E5476M035C0055	47	35	E5	55	10
T52M1107M035C0055	100	35	M1	55	10
T55Z476M016C0045	47	16	Z	45	10
T55Z107M016C0050	100	16	Z	50	10
T55D157M016C0015	150	16	D	15	10
T55Z476M020C0070	47	20	Z	70	10
T55Z336M025C0050	33	25	Z	50	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



T52 PERFORMANCE CHARACTERISTICS			
ITEM	CONDITION	POST TEST PERFORMANCE	
Life test at +105 °C	2000 h (according to Standard Ratings table) 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 +40 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 1000 % of initial value
	105 °C	Capacitance change	Within 0 % to +40 % 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
Temperature cycling	1000 cycles (-55 °C to +125 °C)	Capacitance change	Within ± 20 % of initial value
		Dissipation factor	Within initial limit
		Leakage current	Shall not exceed 300 % of initial limit



T52 PERFORMANCE CHARACTERISTICS			
ITEM	CONDITION	POST TEST PERFORMANCE	
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	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

T55 PERFORMANCE CHARACTERISTICS					
ITEM	CONDITION	POST TEST PERFORMANCE			
Temperature characteristics	Measure the specified characteristics in each stage		Specified initial value	-55 °C	+105 °C
		Capacitance change	-	-30 % to 0 %	0 % to +50 %
		Dissipation factor shown in Standard Ratings table or less	8 to 10	14	-
		Leakage current	Refer to Standard Ratings table	-	Not more than 1 CV or 30 µA which is greater
Surge voltage	105 °C, 1000 successive test cycles in series with a 1 kΩ resistor at the rate of 30 s ON, 30 s OFF; test voltage per table below:	Capacitance change	Within ± 20 % of initial value		
	Rated voltage: 2.5 4.0 6.3 7.0 10 12.5 16 20 25 35 50 63	Dissipation factor	Within initial limit		
	Surge voltage: 3.2 5.2 8.2 9.0 13 16.2 20 23 29 40 57 72	Leakage current	Shall not exceed 300 % of initial limit		
Solder heat resistance	Reflow board surface peak temperature: less than 260 °C Time: 5 s max.	Capacitance change	Within ± 20 % of initial value		
		Dissipation factor	Initial specified value or less		
		Leakage current	Shall not exceed 300 % of initial specified value		
Moisture resistance no load	Leave at 60 °C and 90 % RH for 500 h	Capacitance change	$V_R \leq 4 V$	Relative to the value before test +50 % to -20 %	
			$V_R \geq 6.3 V$	Relative to the value before test +40 % to -20 %	
		Dissipation factor	Initial specified value or less		
		Leakage current	Shall not exceed 300 % of initial specified value		
High temperature load	105 °C. The rated voltage is applied through a protective resistor of 3 Ω for 1000 h or 2000 h	Capacitance change	Within ± 20 % of initial value		
		Dissipation factor	Initial specified value or less		
		Leakage current	Shall not exceed 300 % of initial specified value		
Thermal shock	Leave at -55 °C, normal temperature, 105 °C, and normal temperature for 30 min., 15 min. 30 min., and 15 min. Repeat this operation 5 times running.	Capacitance change	Within ± 20 % of initial value or less		
		Dissipation factor	Initial specified value or less		
		Leakage current	Shall not exceed 300 % of initial specified value		
Failure rate	105 °C. The rated voltage is applied through a protective resistor of 1 Ω/V.	1 % / 1000 h			

Note

- Test conditions per JIS C5101-1