

## T55 Single Digit mΩ ESR Sample Kit vPolyTan™ Polymer Surface Mount Chip Capacitors



### LINKS TO ADDITIONAL RESOURCES



Contents: 10 pieces each of 12 single digit mΩ ESR polymer tantalum ratings which differ in voltage, capacitance, and ESR.

### FEATURES

- Ultra 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
- Moisture sensitivity level 3
- 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)

### APPLICATIONS

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

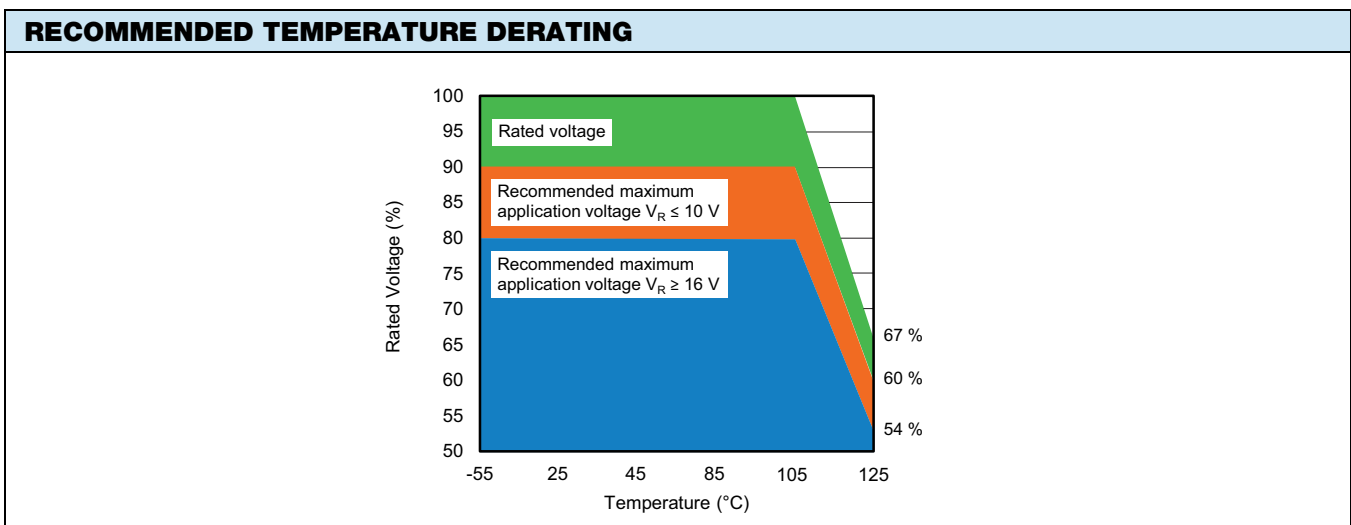
SPECIFICATIONS	
Part number	POLYTAN-ENGKIT-LOWESR
Capacitor type	Molded chip polymer tantalum
Capacitor tolerance	± 20 %
Operating temperature range	-55 °C to +105 °C
Termination finish	Ni / Pd / Au
Moisture sensitivity level	3
Number of capacitors	12 ratings of 10 capacitors each

DIMENSIONS in inches [millimeters]						
CASE CODE	EIA SIZE	L	W	H	I	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
T55D108M2R5C0006	1000	2.5	D	6	10
T55D108M2R5C0007	1000	2.5	D	7	10
T55D108M2R5C0008	1000	2.5	D	8	10
T55D687M004C0006	680	4	D	6	10
T55D687M004C0007	680	4	D	7	10
T55D687M004C0008	680	4	D	8	10
T55D477M6R3C0006	470	6.3	D	6	10
T55D477M6R3C0007	470	6.3	D	7	10
T55D477M6R3C0008	470	6.3	D	8	10
T55D337M010C0007	330	10	D	7	10
T55D337M010C0008	330	10	D	8	10
T55D337M010C0009	330	10	D	9	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





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 $\mu$ A which is greater
Surge voltage	105 °C, 1000 successive test cycles in series with a 1 k $\Omega$ resistor at the rate of 30 s ON, 30 s OFF; test voltage per table below:													Capacitance change	Within $\pm$ 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 $\pm$ 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 $\Omega$ for 1000 h or 2000 h <sup>(1)</sup>													Capacitance change	Within $\pm$ 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 $\pm$ 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 $\Omega$ /V.													1 % / 1000 h			

**Notes**

- Test conditions per JIS C5101-1
- (1) Test time, please refer to table “Standard Ratings”