Capacitors - High Voltage, High Temperature

94SVPD SMD Solid Aluminum Capacitors with Conductive Polymer

KEY BENEFITS

- High-voltage, high-temperature in polymer technology
- Improved characteristics with up to 125 °C temperature capability and 35 V maximum voltage rating in a SMD package
- Improved damp heat (steady state) 85 °C x 85 % RH performance
- High ripple current up to 3.8 A at 100 kHz and 105 °C
- Low ESR down to 28 mΩ at 100 kHz
- RoHS-compliant, can support lead (Pb)-free reflow soldering (refer to datasheet for profile and maximum temperature)

APPLICATIONS

- Vehicle-mounted equipment (e.g., engine control, power management and conversion)
- Industrial (SMPS, measurement and control, automation)
- Telecom infrastructure

RESOURCES

- Datasheet: 94SVPD - http://www.vishay.com/doc?90022
- For technical questions contact aluminumcaps4@vishay.com
- Material categorization: For definitions of compliance please see http://www.vishay.com/doc?99912

RoHS COMPLIANT

94SVPD SMD Solid Aluminum Capacitors with Conductive Polymer

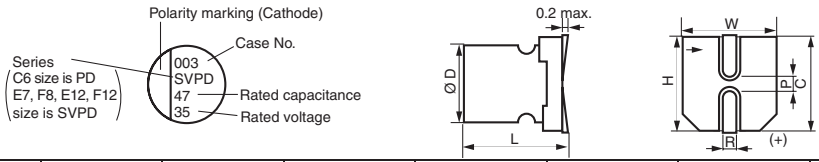
QUICK REFERENCE DATA

DESCRIPTION	CONDITIONS	VALUE		
Operating temperature range	-	- 55 °C to + 125 °C		
Capacitance tolerance	120 Hz	M: ± 20 %		
Tangent of loss angle (tan δ)	120 Hz	≤ values in standard ratings table		
Leakage current (μA/2 min) (or less) (1)	after 2 minutes	≤ values in standard ratings table		
ESR	-	≤ values in standard ratings table		
Characteristics of impedance ratio at high and low temperature	at 100 kHz, + 20 °C	- 55 °C	$Z/Z_{20\,°C}$	0.75 to 1.25
		+ 125 °C	$Z/Z_{20\,°C}$	0.75 to 1.0
Endurance	+ 125 °C, 2000 h rated voltage applied	ΔC/C	within ± 20 %	
		tan δ	2 x or < than an initial standard	
		ESR	2 x or < than an initial standard	
		Leakage current	below an initial standard	
Damp heat (Steady state)	+ 85 °C, 85 to 90 % RH, 1000 h rated voltage applied	ΔC/C	within ± 20 %	
		tan δ	2 x or < than an initial standard	
		ESR	2 x or < than an initial standard	
		Leakage Current	below an initial standard	
Solder heat resistance (2)	(VPS) (230 °C x 75 s)	ΔC/C	within ± 10 %	
		tan δ	1.3 x or < than an initial standard	
		ESR	1.3 x or < than an initial standard	
		Leakage Current	below an initial standard (after voltage procesing)	

Notes

(1) If any doubt arises, measure the current after applying voltage (voltage treatment). Voltage Treatment: the rated voltage is applied (10 to 35 V) for 120 minutes at 125 °C.

DIMENSIONS in millimeters



SIZE CODE	Ø D ± 0.5	L + 0.1 - 0.4	W ± 0.2	H ± 0.2	C ± 0.2	R	P ± 0.2
C6	6.3	5.9	6.6	6.6	7.3	0.6 to 0.8	2.1
E7	8.0	6.9	8.3	8.3	9.0	0.6 to 0.8	3.2
F8	10.0	7.9	10.3	10.3	11.0	0.6 to 0.8	4.6
E12	8.0	11.9	8.3	8.3	9.0	0.8 to 1.1	3.2
F12	10.0	12.6	10.3	10.3	11.0	0.8 to 1.1	4.6

STANDARD RATINGS

CASE CODE	PART NUMBER (1)	RATED VOLTAGE (V)	RATED CAP. (μF)	MAX. ESR (100 k to 300 kHz) (mΩ)	RATED RIPPLE CURRENT	ALLOWABLE RIPPLE CURRENT	MAX. TANGENT OF LOSS ANGLE	MAX. LEAKAGE CURRENT (μA) (2)
					100 kHz (mA) (3)			
					105 °C < Tx ≤ 125 °C	Tx ≤ 105 °C		
C6	94SVPD106X0025C6	25	10	65	474	1500	0.10	50
	94SVPD566X0010C6	10	56	45	538	1700	0.12	112
E7	94SVPD825X0035E7	35	8.2	70	400	1300	0.10	57
	94SVPD226X0025E7	25	22	48	580	1835	0.10	110
	94SVPD826X0016E7	16	82	40	670	2120	0.12	262
F8	94SVPD186X0035F8	35	18	60	550	1800	0.10	126
	94SVPD396X0025F8	25	39	45	664	2100	0.10	195
E12	94SVPD226X0035E12	35	22	50	700	2300	0.12	154
	94SVPD476X0025E12	25	47	30	943	2980	0.12	235
F12	94SVPD476X0035F12	35	47	30	1150	3650	0.12	329
	94SVPD826X0025F12	25	82	28	1202	3800	0.12	410

Notes

(1) Capacitance tolerance: M ± 20 %

(2) After 2 minutes

(3) Tx: Ambient temperature

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