

Capacitor Type

ST



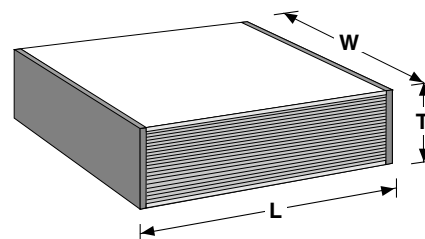
Electrical
Schematic

Non-polarized

- **Pb free machined terminations**
- **Multilayer metallized polymer surface mount chips**

- **EIA Chip sizes**
- **Reflow solderable**
- **Made in U.S.A.**

ST2824/ST3827 CHIP STYLE



100 VDC / 80 VAC

PF Code	Value μ F	L	T MAX	W MAX	Case	Part Number
105	1.0	.280 - .305 (7.1 – 7.7)	.175 (4.4)	.256 (6.5)	ST2824	105K100ST2824T
225	2.2	.380 - .405 (9.6 – 10.3)	.200 (5.1)	.286 (7.3)	ST3827	225K100ST3827T

Dimensions in inches, metric (mm) in parenthesis.

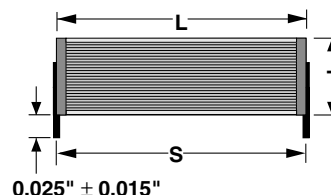
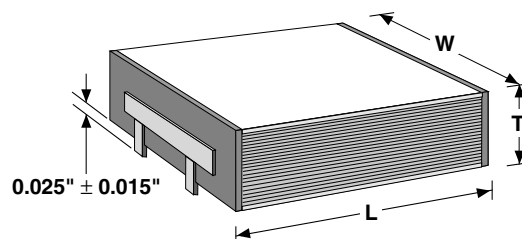
RoHS-6 Compliant

RoHS-6 product does not contain any of the six RoHS banned materials (Hg, CrVI, Cd, PBB, PBDE and Pb) in levels exceeding the industry defined limits

ST3/ST4 LEAD FRAME STYLE

Lead Frame Pins

Thickness	0.010"	± 0.005 "
Width	0.020"	± 0.005 "
Pitch	0.100"	± 0.015 "
Height	0.025"	± 0.015 "
# of Pins	2	



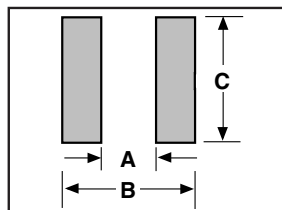
100 VDC / 80 VAC

PF Code	Value μ F	L	T MAX	W MAX	Case	Part Number
105	1.0	.280 - .310 (7.1 – 7.9)	.175 (4.4)	.256 (6.5)	ST3	105K100ST3T
225	2.2	.380 - .410 (9.6 – 10.4)	.200 (5.1)	.286 (7.3)	ST4	225K100ST4T

Dimensions in inches, metric (mm) in parenthesis.

RoHS-5 Compliant

RoHS-5 product does not contain five of the RoHS banned materials (Hg, CrVI, Cd, PBB, and PBDE) in levels exceeding the industry defined limits. Component lead frame pin-outs are plated with Sn /Pb and match conventional SnPb board assembly requirements



Recommended Pad Sizes (inches)

Case Code	A	B	C
ST2824/ST3	0.210	0.365	0.275
ST3827/ST4	0.310	0.465	0.305

Surfilm® Capacitors Type ST Performance Characteristics

Electrical

Capacitance Range	1.0 & 2.2µF @1KHz
Voltage Range	100 VDC
Tolerance	±10% (K)
Dissipation Factor	≤1.0% @ 1KHz
Insulation Resistance	≥ 1K MegOhms x µF, measured after 1 minute of electrification at 10 VDC
Dielectric Strength	1.3 x Rated Voltage
Temperature Coef.	+6.0% from -55°C to 85°C (typical)
Dielectric Absorption	0.30% (typical)
Self Inductance	6.0nH (typical) ST2824/ST3 9.0nH (typical) ST3827/ST4

Physical

Construction	Non-inductively constructed with metallized polyester dielectric (polyethylene terephthalate). Parallel plate-multilayer polymer (MLP) design. Electrode: Aluminum metallization		
ST2824/ST3827	Chip Style		
	Tin-based solderable surface		
ST3/ST4	Lead Frame Style		
	Tin Cu Alloy Lead Frame, "I" lead configuration for SMD butt joint mounting		
Enclosure	Self-encased		
Marking	Parts are not marked. ITW, capacitance code, tolerance and rated voltage are printed on container.		
Temperature Range	-55°C to 125°C, derate voltage 1.25% / °C above 85°C		
Packaging	Tape/Reel. Dry packed with dessicant in moisture barrier bag. JEDEC level on package.		
Quantity per reel	ST2824	1200	
	ST3827	850	
	ST3	800	
	ST4	700	

Solder Attachment

	Yes	No
Conductive Reflow	√	
Convection Reflow	√	
IR Reflow	√	
Soldering Iron (220°C)	√	
Wave Solder		√
See Soldering Guidelines Spec. for details.		

Performance

Accelerated DC Voltage Life Test:

Test Conditions

Temperature	85°C ±5°C
Applied Voltage	1.25 x Rated Voltage
Test Duration	1000 hours

Performance Requirements

Capacitance	delta of ≤ 5.0%
Dissipation Factor	≤ 1.00%
Insulation Resistance	> 50% of specification

Humidity:

Test conditions

Temperature	85°C ± 5°C
Applied Voltage	Zero voltage
Humidity	85%
Test Duration	21 days

Performance Requirements

Capacitance	delta of ≤ 7.0%
Dissipation Factor	≤1.00%
Insulation Resistance	≥ 50% of specification

Solderability (Convection Reflow):

Test Conditions

Solder Temperature	220°C +0°C, -10°C
Test Duration	30 seconds ±1

Performance Requirements

Capacitance	delta of ≤ 5.0%
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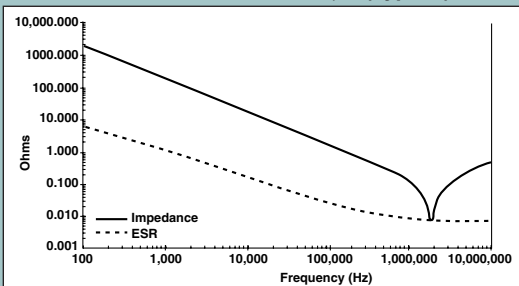
Terminal Adhesion:

0.5 Kg through hole in substrate, centered. Solder fillets ≥ 1/3 T, 5 seconds with no damage.

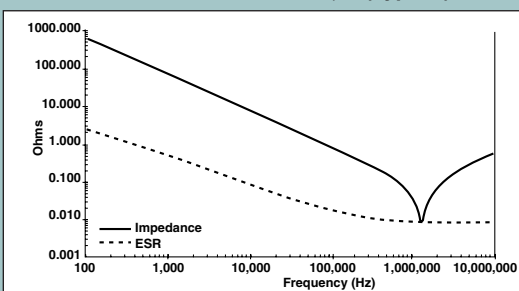
Long Term Stability:

≤ 2.0% over two years at a temperature of between 0°C and 35°C and a RH of between 35% and 65%.

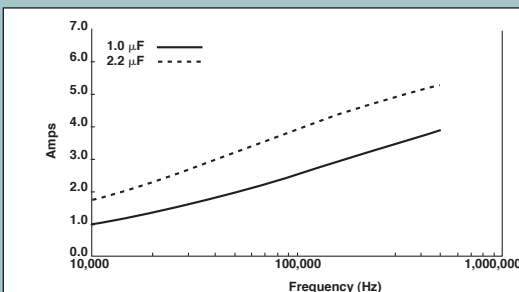
Impedance & ESR vs Frequency
ST2824/ST3 100VDC 1.0 µF (Typical)



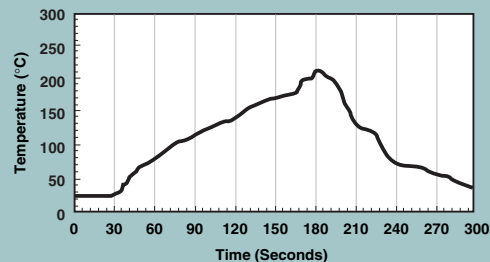
Impedance & ESR vs Frequency
ST3827/ST4 100VDC 2.2 µF (Typical)



Maximum RMS Current
ST2824/ST3 1.0 µF &
ST3827/ST4 2.2 µF (Typical)



Convection Reflow Profile (Typical)



IR Reflow Profile (Typical)

