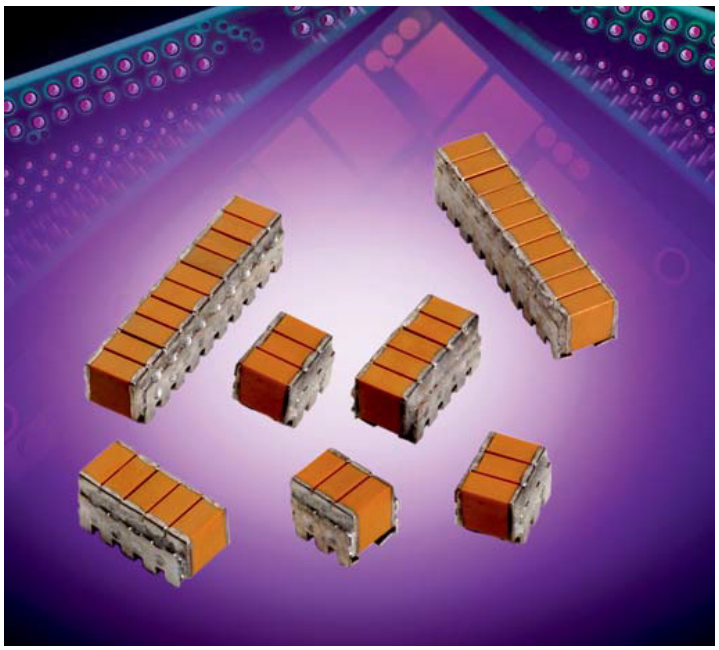
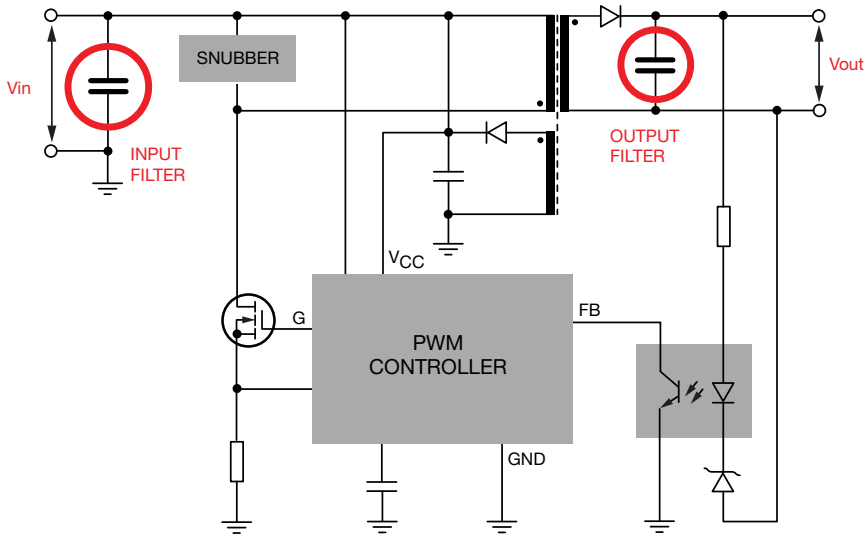


The TurboCap™, MLC capacitors from AVX Corporation are characterized with very high capacitance in a small volume. By vertical stacking of the ceramic elements, the footprint required for mounting the capacitors is greatly reduced. TurboCapsTM are ideally suited as filters in the input and output stages of switch mode power supplies (SMPS). With their ultra-low ESR, these capacitors are designed to handle high ripple current at high frequencies and high power levels. The DIP leads in either thru-hole or surface mount configurations offer superior stress relief to the ceramic elements. The leads effectively decouple the parts from the board and minimize thermally or mechanically induced stresses encountered during assembly, temperature cycling or other environmental conditions.

TYPICAL APPLICATION OF TURBOCAP™ SMPS CAPACITORS FOR INPUT AND OUTPUT FILTERS IN DC/DC CONVERTERS



Performance of SMPS capacitors can be simulated by downloading SpiCalci software program - http://www.avx.com/download/software/SpiCalci-AVX.zip
Custom values, ratings and configurations are also available.

High-CV SMPS Capacitors

TurboCap™

ELECTRICAL SPECIFICATIONS

Temperature Coefficient
Temperature Coefficient ±15%, -55° to +125°C

Capacitance Test (MIL-STD-202 Method 305)
25°C, 1.0±0.2 Vrms (open circuit voltage) at 1KHz

Dissipation Factor 25°C
2.5% Max @ 25°C, 1.0±0.2 Vrms (open circuit voltage) at 1KHz

Insulation Resistance 25°C (MIL-STD-202 Method 302)
500 MΩ-µF, whichever is less.

Insulation Resistance 125°C (MIL-STD-202 Method 302)
50 MΩ-µF, whichever is less.

Dielectric Withstanding Voltage 25°C (Flash Test)
250% rated voltage for 5 seconds with 50 mA max charging current.

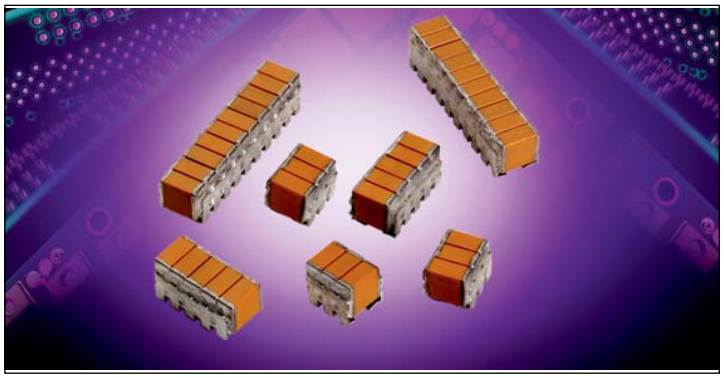
Life Test (1000 hrs)
X7R: 150% rated voltage at +125°C.

Moisture Resistance (MIL-STD-202 Method 106)
Ten cycles with no voltage applied.

Thermal Shock (MIL-STD-202 Method 107, Condition A)

Immersion Cycling (MIL-STD-202 Method 104, Condition B)

Resistance To Solder Heat (MIL-STD-202, Method 210, Condition B, for 20 seconds)



Typical ESR Performance (Ω)			
	27µF	47µF	100µF
ESR @ 10KHz	0.007	0.004	0.003
ESR @ 50KHz	0.003	0.002	0.0015
ESR @ 100KHz	0.002	0.0015	0.001

Not RoHS Compliant

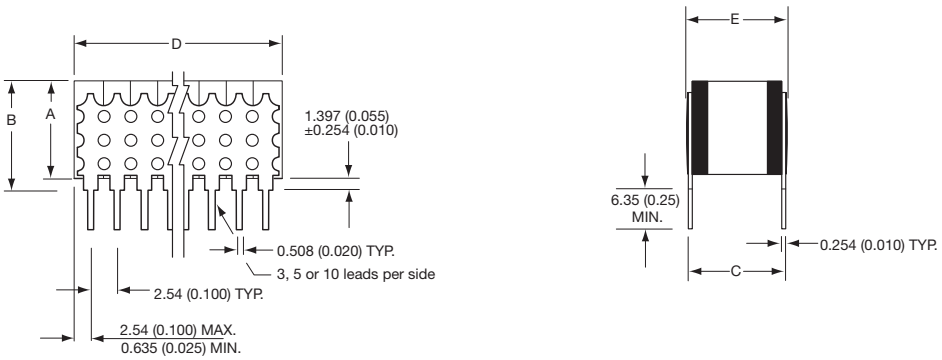
HOW TO ORDER

AVX Styles: ST12 and ST20

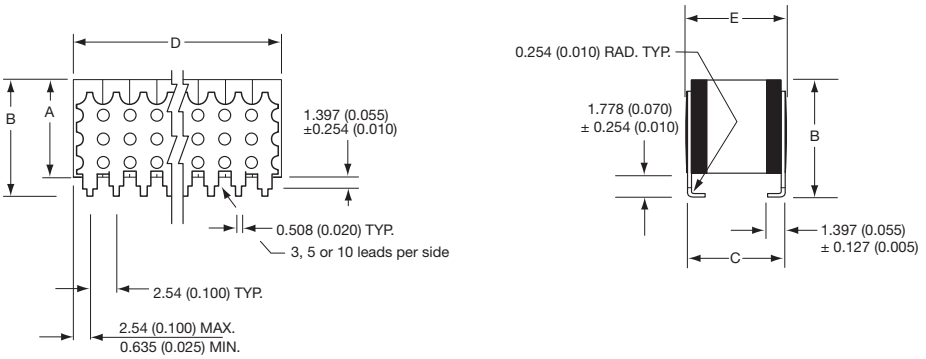
ST12	5	C	186	M	A	N	03
AVX Style ST12 ST20	**Voltage** 25V = 3 50V = 5 100V = 1	**Temperature Coefficient** X7R = C	**Capacitance Code** (2 significant digits + number of zeros) 1 µF = 105 10 µF = 106 100 µF = 107	**Capacitance Tolerance** M = ±20%	**Test Level** A = Standard	**Termination** N = Straight Lead J = Leads formed in L = Leads formed out	**Number of Leads Per Side** 03 = 3 05 = 5 10 = 10

CAPACITANCE (MF)

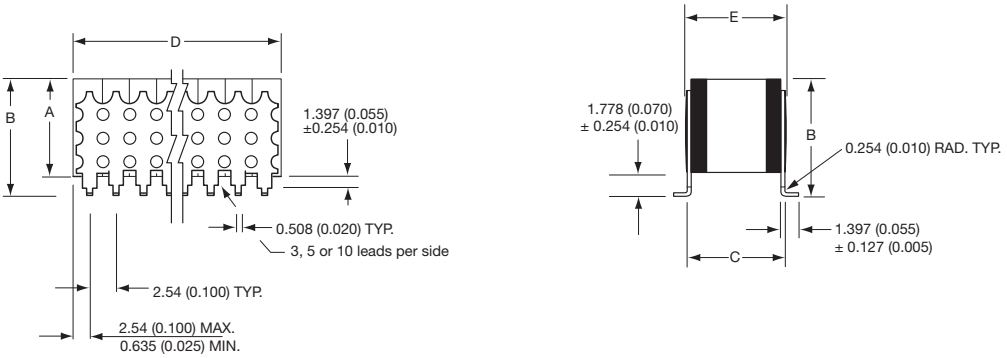
	ST12		ST20		
	Voltage				
Cap (µF)	50V	100V	25V	50V	100V
.82					
1.3					
2.7					
8.2		...03			
12		...05			
14					...03
18	...03				
22		...10			...05
27	...05			...03	
47				...05	...10
50	...10				
68			...03		
100			...05	...10	
220			...10		



"N" STYLE LEADS



"J" STYLE LEADS



"L" STYLE LEADS

DIMENSIONS

millimeters (inches)

Style	A (max.)	B (max.)*	C ± 0.635 (± 0.025)	D (max.)	E (max.)	Lead Style	No. of Leads Per Side
ST125C***M*N03	3.56 (0.140)	5.21 (0.205)	5.08 (0.200)	10.8 (0.425)	6.35 (0.250)	N	03
ST125C***M*N05	3.56 (0.140)	5.21 (0.205)	5.08 (0.200)	15.9 (0.625)	6.35 (0.250)	N	05
ST125C***M*N10	3.56 (0.140)	5.21 (0.205)	5.08 (0.200)	27.9 (1.100)	6.35 (0.250)	N	10
ST205C***M*N03	5.59 (0.220)	7.24 (0.285)	6.35 (0.250)	9.5(0.375)	7.62 (0.300)	N	03
ST205C***M*N05	5.59 (0.220)	7.24 (0.285)	6.35 (0.250)	14.6 (0.575)	7.62 (0.300)	N	05
ST205C***M*N10	5.59 (0.220)	7.24 (0.285)	6.35 (0.250)	27.3 (1.075)	7.62 (0.300)	N	10

*The "B" dimension is defined for the "N" Style leads. The "L" and "J" Style Leads are 0.381 (0.015) longer. The ST12 will be 5.89 (0.220), the ST20 will be 7.62 (0.300).