

SVZ SERIES

NEC's SVZ series solid tantalum capacitors have low ESR value.

These capacitors are suitable for noise reduction in a high-frequency application with its low ESR.

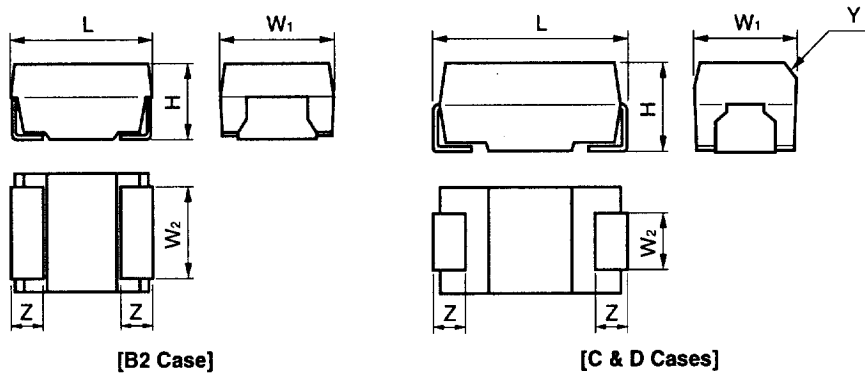
FEATURES

- Low Impedance ESR
- Same case sizes as NEC's R series are available

APPLICATIONS

- Decoupling Capacitor of CPU and HDD
- Mobile Telephone
- Modem

OUTLINE DRAWINGS AND DIMENSIONS



Unit : mm (inch)

Case Size	EIA Code	L	W ₁	W ₂	H	Z	Y
B2	3528	3.5±0.2 (0.138±0.008)	2.8±0.2 (0.110±0.008)	2.3±0.1 (0.091±0.004)	1.9±0.2 (0.075±0.008)	0.8±0.3 (0.031±0.012)	—
C	6032	6.0±0.3 (0.236±0.012)	3.2±0.3 (0.126±0.012)	2.2±0.1 (0.087±0.004)	2.5±0.3 (0.098±0.012)	1.3±0.3 (0.051±0.012)	0.4C (0.016)
D	7343	7.3±0.3 (0.287±0.012)	4.3±0.3 (0.169±0.012)	2.4±0.1 (0.094±0.004)	2.8±0.3 (0.110±0.012)	1.3±0.3 (0.051±0.012)	0.5C (0.020)

PERFORMANCE CHARACTERISTICS

Item		Specification			Test Method
Operating Temperature Range		-55 to +125°C			
Rated Voltage		4	6.3	10	Vdc Temperature: 85°C
Surge Voltage		5.2	8	13	Vdc Temperature: 85°C
Category Voltage		2.5	4	6.3	Vdc Temperature: 125°C (*1)
Capacitance Range		10 to 330 μF			Frequency: 120 Hz
Capacitance Tolerance		±20%			
Leakage Current (L.C.)		0.01 CV (μA) or 0.5 μA whichever is greater			5 min, after rated voltage applied
Tangent of Loss Angle (tan δ)		0.08 max. (*2)			Frequency: 120 Hz
Equivalent Series Resistance (ESR)		Refer to standard ratings			Frequency: 100 Hz
Surge Voltage Test		ΔC/C : ±5% (*3) tan δ : Initial Requirement L.C. : Initial Requirement			Temperature: 85°C Surge Voltage for 30 sec. Series Resistance: 1 kΩ Discharge Voltage for 5 min. 30 sec. 1000 cycles
Characteristics at High and Low Temperature	Temp.	-55°C	+85°C	+125°C	Step 1: 20°C Step 2: -55°C Step 3: 20°C Step 4: 85°C Step 5: 125°C Step 6: 20°C
	ΔC/C	0, -12%	+12, 0%	+15, 0%	
	tan δ	0.12 max. (*4)	Initial Requirement	0.10 max. (*5) Requirement	
	L.C.	-	0.1 CV or 5 μA whichever is greater	0.125 CV or 6.25 μA whichever is greater	
Rapid Change of Temperature		ΔC/C : ±5% (*3) tan δ : Initial Requirement L.C. : Initial Requirement			-55 to +125°C 5 cycles
Resistance to Soldering Heat		ΔC/C : ±5% (*3) tan δ : Initial Requirement L.C. : Initial Requirement			Fully immersion to solder, 260°C, 5 sec.
Damp Heat, Steady State		ΔC/C : ±5% (*3) tan δ : Initial Requirement × 1.5 L.C. : Initial Requirement			Temperature: 40°C 90 to 95% RH 500 hours
Endurance		ΔC/C : ±10% (*3) tan δ : Initial Requirement L.C. : Initial Requirement × 1.25			Temperature: 85°C Rated Voltage Applied Temperature: 125°C Category Voltage Applied 2000 hours
Failure Rate		λ ₀ = 1%/1000H			

LEGEND

CV : Product of capacitance in μF and voltage in V
ΔC/C: Capacitance Change Ratio

*1: Category voltage at 85°C or more is calculated by following expression.

$$U_T = U_R - \frac{U_R - U_C}{40} (T - 85)$$

U_R : Rated Voltage

U_C : Category Voltage at 125°C

*2: $\tan \delta$ of the specific products of SVZ series is shown in the following table

Product	$\tan \delta$
D case: 10 V/150 μ F	0.10 max.
D case: 6.3V/220 μ F	0.12 max.
D case: 4 V/330 μ F	0.14 max.

*3: The specific products of SVZ series in the following table are applied to Capacitance change of $\pm 12\%$

Case Size	Product
D	4 V/330 μ F, 6.3 V/220 μ F, 10 V/150 μ F

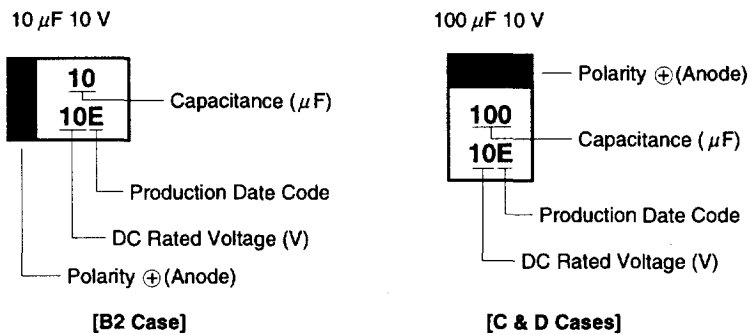
*4: $\tan \delta$ of the specific products of SVZ series is shown in the following table

Product	$\tan \delta$
D case : 4 V/330 μ F, 6.3 V/220 μ F, 10 V/150 μ F	0.18 max.

*5: $\tan \delta$ of the specific products of SVZ series is shown in the following table

Product	$\tan \delta$
D case : 10 V/150 μ F	0.12 max.
D case : 6.3 V/220 μ F	0.14 max.
D case : 4 V/330 μ F	0.16 max.

MARKING



[Marking of Production Date Code]

Month Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1998	N	P	Q	R	S	T	U	V	W	X	Y	Z
1999	a	b	c	d	e	f	g	h	j	k	l	m
2000	n	p	q	r	s	t	u	v	w	x	y	z
2001	A	B	C	D	E	F	G	H	J	K	L	M

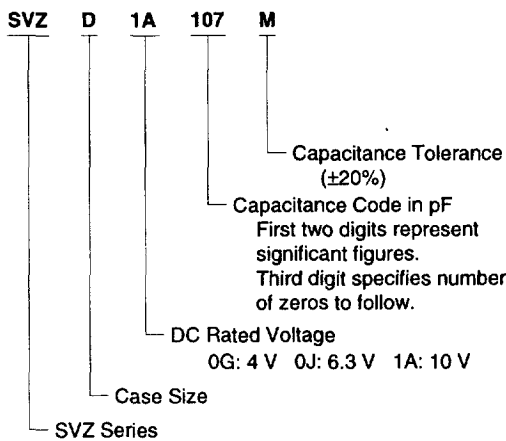
Date code will resume beginning in 2002.

PRODUCT LINE-UP AND CASE SIZE

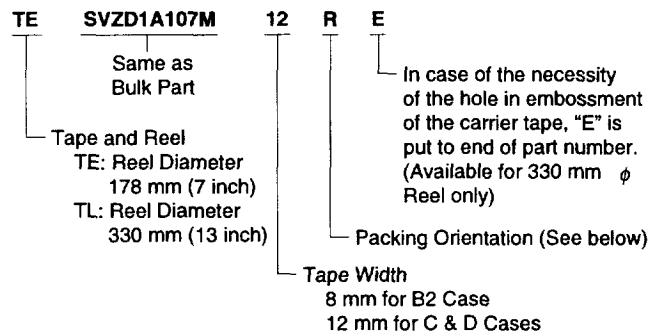
Capacitance (μF) \ Rated Voltage (V dc)	4	6.3	10
10			B2
15			
22		B2	C
33			C
47			C
68			
100			D
150		D	D
220	D	D	
330	D		

PART NUMBERING SYSTEM

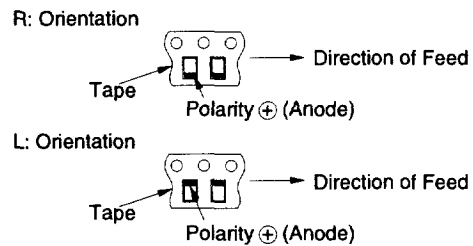
- Bulk -



- Tape and Reel -



- Packing Orientation -

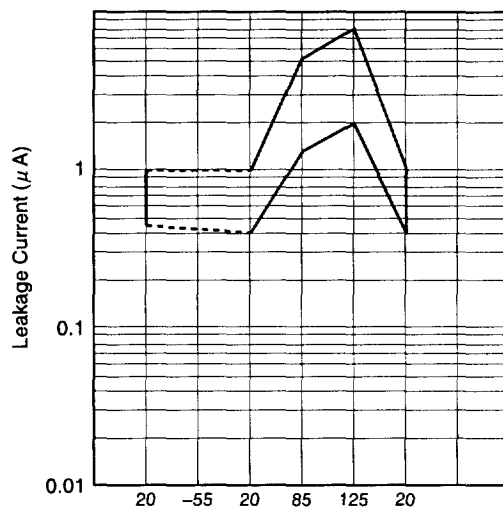
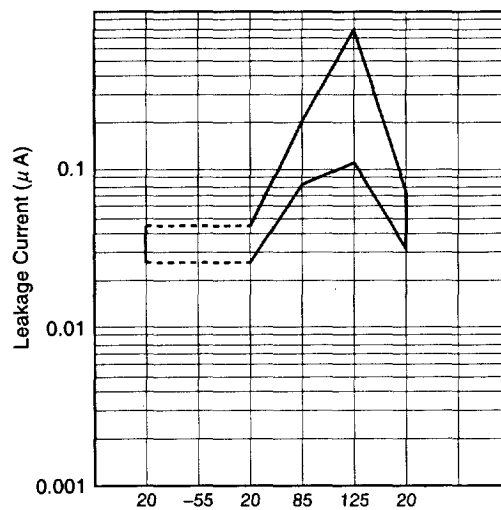
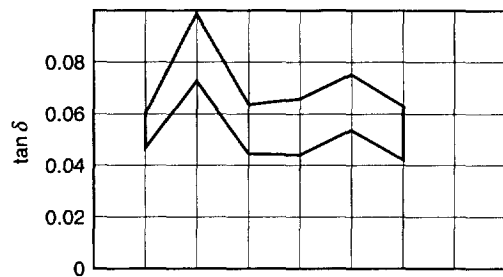
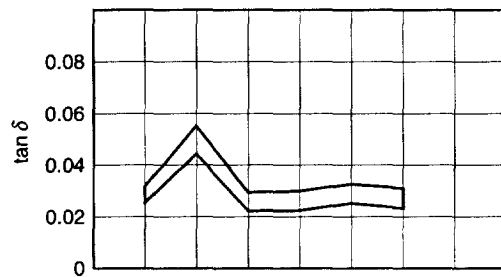
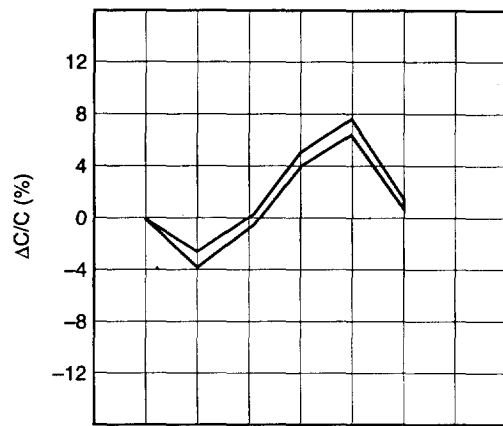
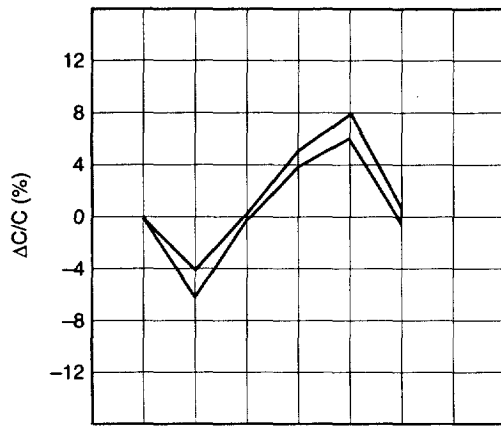


RATINGS

DC Rated Voltage @85°C (125°C) Vdc	Capacitance @20°C, 120 Hz μF	Case Size	Part Number	Leakage Current @20°C μA Max.	tan δ @20°C, 120 Hz % Max.	ESR @20°C, 100 kHz Ω Max.
4 (2.5)	220	D	SVZD0G227M	8.8	8	100
	330	D	SVZD0G337M	13.2	14	100
6.3 (4)	22	B2	SVZB20J226M	1.3	8	800
	150	D	SVZD0J157M	9.4	8	100
	220	D	SVZD0J227M	13.8	12	100
10 (6.3)	10	B2	SVZB21A106M	1.0	8	900
	22	C	SVZC1A226M	2.2	8	500
	33	C	SVZC1A336M	3.3	8	400
	47	C	SVZC1A476M	4.7	8	300
	100	D	SVZD1A107M	10.0	8	100
	150	D	SVZD1A157M	15.0	10	100

CHARACTERISTICS DATA

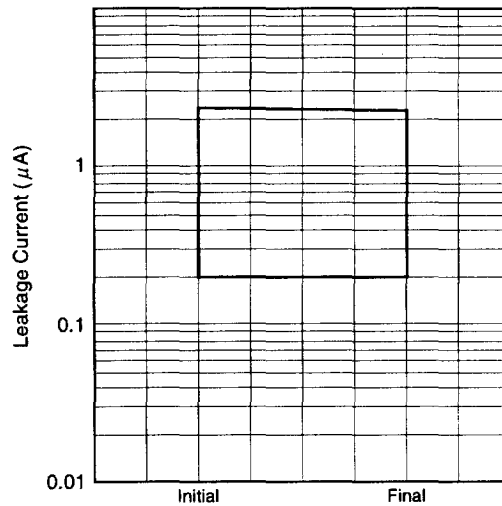
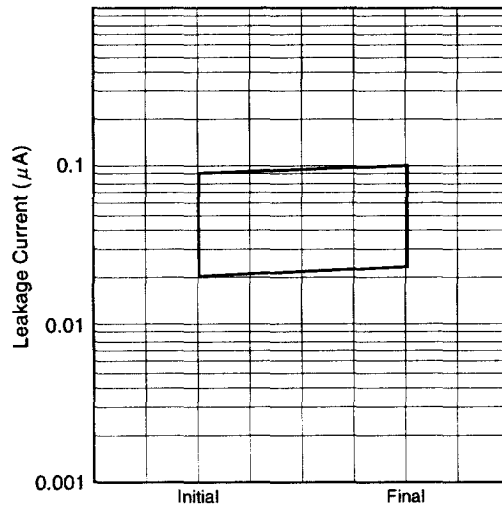
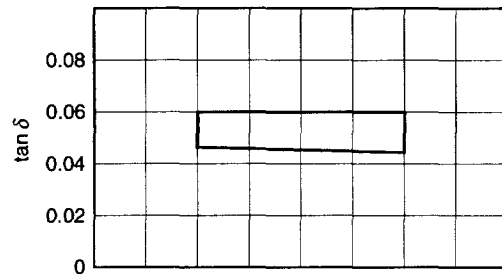
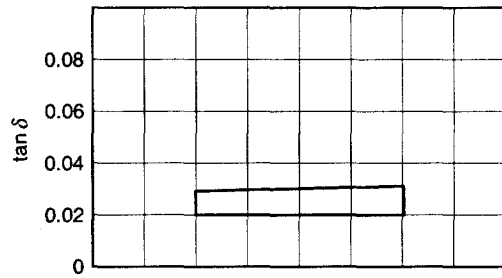
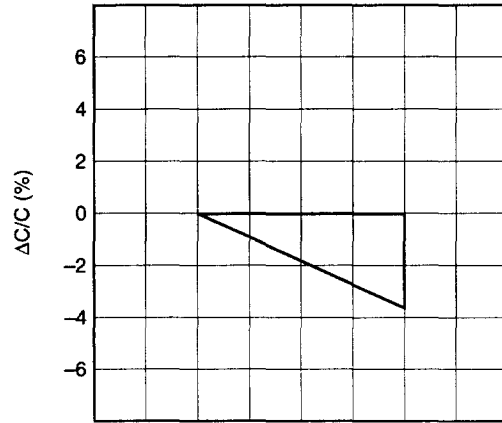
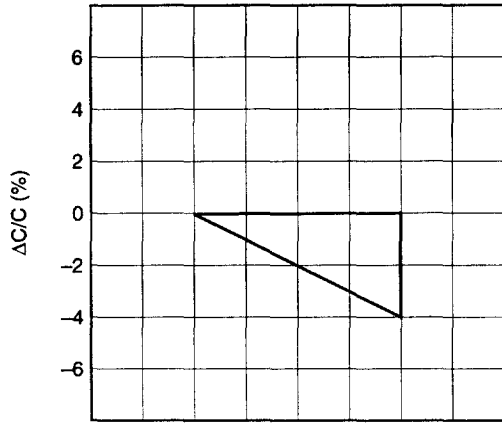
Characteristics at High and Low Temperature



Temperature (°C)
22 $\mu F/6.3 V$ B2 Case

Temperature (°C)
100 $\mu F/10 V$ D Case

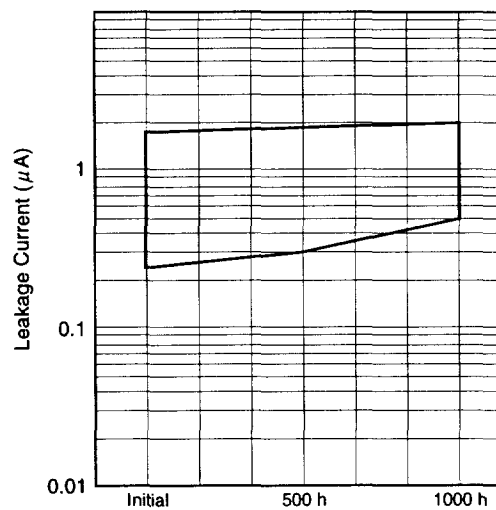
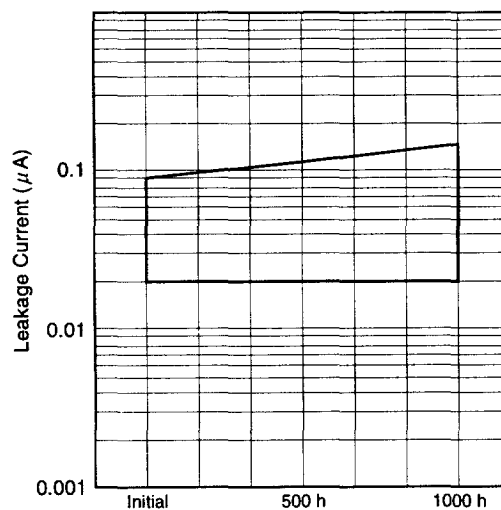
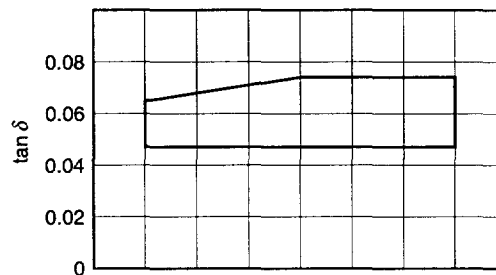
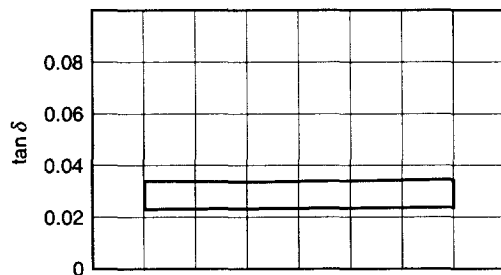
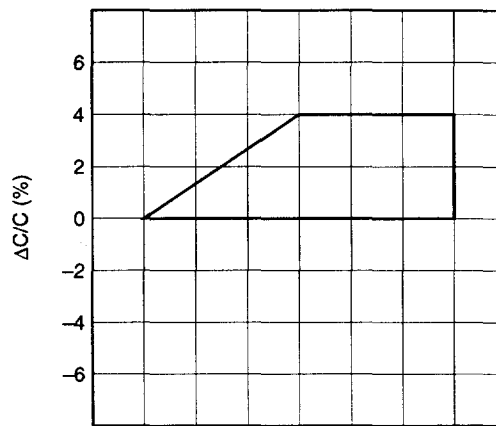
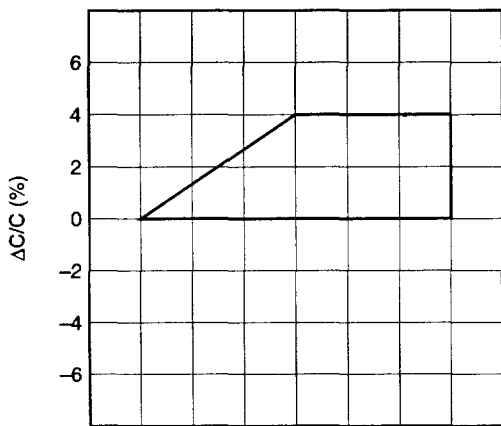
Resistance to Soldering Heat (Immersing for 10 sec. at 260°C)



22 μF/6.3 V B2 Case

100 μF/10 V D Case

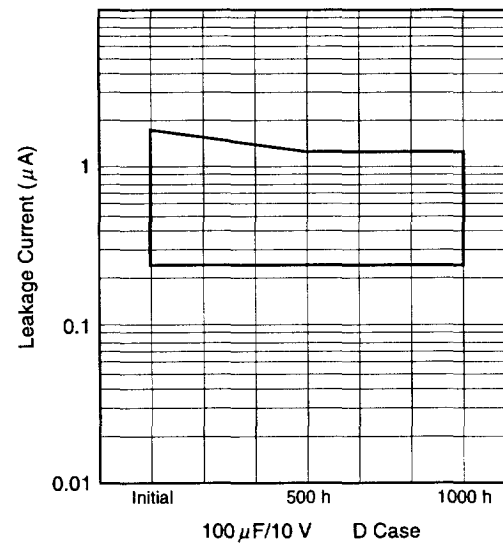
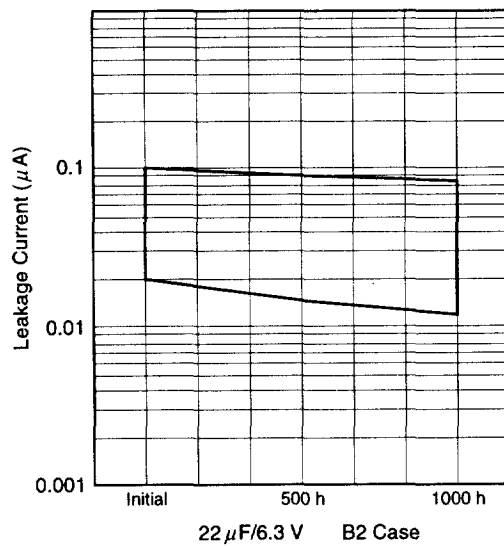
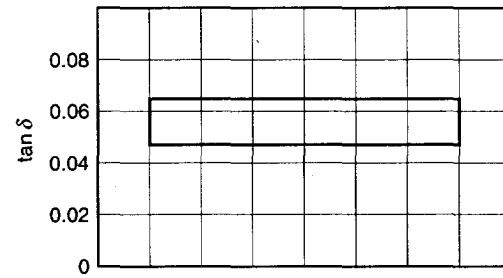
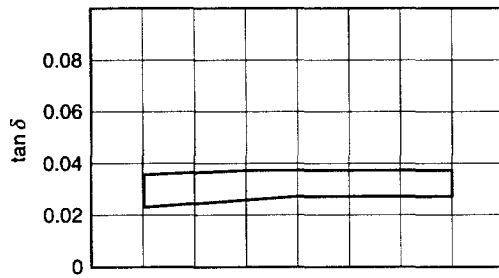
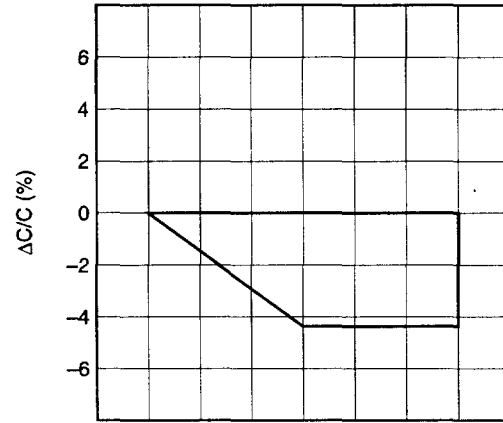
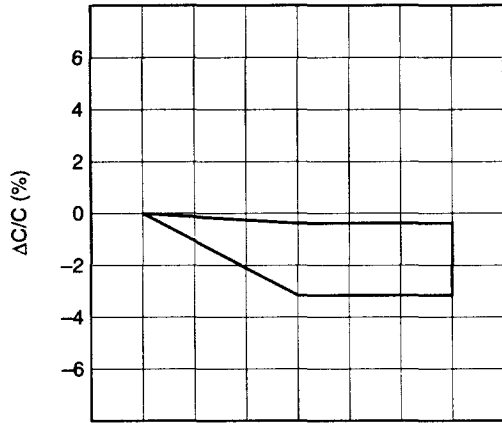
Damp Heat, Steady State (65°C, 90 to 95% RH)



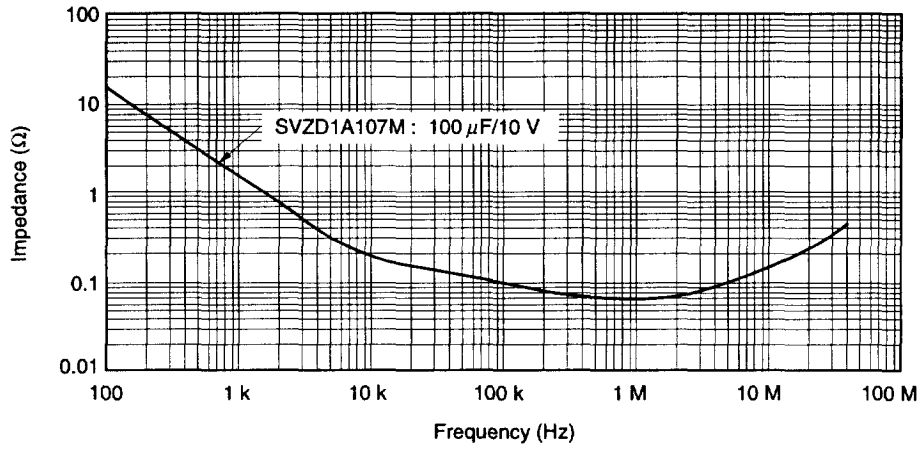
22 μF/6.3 V B2 Case

100 μF/10 V D Case

Endurance (85°C Rated Voltage × 1.3 Applied)



Impedance – Frequency Characteristics



ESR – Frequency Characteristics

