







# DATA SHEET

# Super High Voltage Disc Ceramic Capacitor

Serie: 123005

Range 681 = 680pf

**Tolerance** K= ±10%

Voltage 12000 Volt

Material Character. 5P

Body Diam. 14,5mm

Pitch 10mm

Body Thickn. 9,0mm

Super High Voltage Disc Ceramic Capacitor

Serie No.: **I23005** 

DRW: Jason CHKD Wilson MATL: Wilson **TOLERANCE** Mason DATE 30.04.2011 Customer: APPD: Schumi **FINISH** Sheet No. Jamy 1 from 14









#### **Features**

Wide rated Voltage range, wide nominal capacitance range Flame retardent, insulating coating applied Recomended Application Filter circuit of high voltage power High voltage circuit of television set and monitor High voltage circuit of various electronic equipment

Characteristics	Temp.Char. SL	Temp.Char. Y5P	Temp.Cl	har. Y5U	Temp.C	har. Y5V				
Operating Temperature		30°C	~ +85°C							
Rated Voltage	4KVDC ~ 6KVDC	4KVDC ~ 15KVDC	4KVDC ~	15KVDC	4KVDC ~	15KVDC				
Withstanding Voltage		1,5 times related voltage								
Capacitance	Within the specified tolerance, testing at 25°C, 1Vrms and 1KHz (at 1MHz for SL products)									
Capacitance	10 ~ 330pf	100 ~ 2200pf	470 ~ 3300pf		1000 ~ 10000pf					
Dissipation Factor	Cr<30pf, Q≥ 400+20Cr Cr≥30pf, Q≥1000	tg ≤ 2,5%		tg ≤ 3,5%						
Insulation Resistance		Charge at 500VDC for 6	0 seconds, Rj	≥ 1000MΩ						
Tomporatura	Temperatur Cha	rarcteristics Code	SL	Y5P	Y5U	Y5V				
Temperature Characteristics	Temperatur Coe	. +100 ~ - 1000 10-6/°C	. ± 10%	.+22 ~ +56%	.+22 ~ +82%					

#### **Rated Capacitance**

The first and second digits identify the first and second significant figures of the capacitance, the third digit identifies the multiplier. The capacitance unit is pf,

**Capacitance Tolerance** 

Letter Symbol	Capacitance Tolerance	Letter Symbol	Capacitance Tolerance
С	±0,25pf	K	±10%
D	±0,5pf	M	±20%
J	±5%	Z	.+80 ~ -20%

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	30.04.20
APPD:	Schumi			FINISH	Jamv		Shee	t No.	2 from 1

Super High	Voltage Disc
Ceramic	Capacitor
Dort No :	122005

Part No.: **I23005** 

Customer:

www.edcon-components.com email: info@edcon-components.com









Standard atmospheric condition

Temperature: 15~35°C Relative Humidity: 45~75%

Atmospheric pressure: 86~106KPa (860~1060mbar

Operating and storage temperature range

Operating Temperature:

Temperature	Lowest Operating	Highest Operating		
•				
Characteristics	Temperature	Temperature		
SL	25°C	.+85°C		
COH	25°C	.+85°C		
Y5P	25°C	.+85°C		
Y5U	25°C	.+85°C		
Y5U	25°C	.+85°C		
Y5V	25°C	.+85°C		
Z5U	10°C	.+85°C		
Z5V	10°C	.+85°C		
YR	25°C	.+125°C		

Storage Temperature Range: -10 to + 40°C

Characteristics and test methods

Electrical characteristics and test methods

Wilson	TOLEF	RANCE	Mason	DATE	30.04.2011	Customer:	120000	
		,	wrapped on env	elope for 1 to 5	Super High Voltage Disc Ceramic Capacitor  Part No.:   123005			
Voltage Pr	oof	540V a 1000V t 3000V shall be voltage 1300 betw	The Voltage of 300% rated voltage (for rated voltage 40V and 500V) 200% rated voltage (for rated voltage 000V to 2000V), 175% rated voltage (for rated voltage No breakdown or flag 3000V), or 150% rated Voltage (for DCG or SBBLC) hall be applied between leads for 1 to 5seconds. The oltages of 250% rated voltage (for 50V capacitors) or 1300V (fort 500V, 1KV and over) shall be applied between leads connected together and metal foil				down or flashover	
Insulatio Resistan		voltage	ulation resistand (for Vr≤500VDC VDC)within 50±	c); 500VDC (for	1000M $\Omega$ min 1000M $\Omega$ min (for SBBLC)			
Quality fact dissipation f			The quality factor or dissipation factor shall be measured at the same conditions ab above				pacitance in unit of pf or Y5P,Y5U and Z5U max. (for YR) (for Y5V and Z5U ) SBBLC Y5V and Y5U) (for SBBLC Y5P)	
						Q≥100	20Cr (forCr<30pf) 00 (forCr<30pf)	
Capacitano tolerano	e &	The Ca	I test methods pacitance shall I rms (Class1), 1k Vrms (for Calss	(Hz and 1Vrms				

DRW:JasonCHKDWilsonMATL:WilsonTOLERANCEMasonDATE30.04.2011APPD:SchumiFINISHJamySheet No.3 from 14









	The capacitor shall be kept for enough time to reach thermal equilibrium at special temperature of each step in the following table.							
	The capacitance measurement shall be made only at the thermal equilibrium of each step.	Class I						
	Step Temperature Step Temperature	Temperature coefficient:						
	1 20 ± 2°C 4 85 ±2°C (125±2°C for YR)	Refer to specification sheet						
	225 ± 2°C 5 20 ± 2°C							
	3 20 ± 2°C	Within $\pm 1\%$ or $\pm 0.05$ pf						
	For temperature characteristics SL the steps 1 and step 2 may be omitted.	(Whichever is greater)						
	The temperature coeffizient and the capacitance drift shall be calculated by the following formulas.							
	( Cm - Co )							
	$= x10^6                                    $	Class II & III						
Temperature	Co (1- 10)	Temperature Permittin						
Characteristics	$C_0 - C_1$ $C_5 - C_0$ $C_5 - C_1$	Characteris capacitan						
•	= or	tics change						
	Co Co Co	Y5P ± 10%						
	Where	YR ± 15% to -30%						
	Co Capacitance at step 3	Y5U ± 22% to -56%						
	Cm Capacitance at step 2 and/or step 4	Z5U ± 22% to -56%						
	C1,C5 Capacitance at step 1 and step 5	Y5V ± 22% to -82%						
	To Measuring temperature at Step 3	Z5V ± 22% to -82%						
	T Measuring temperature at Step 2 and /or step 4							
	Pre-tratement:							
	The capacitor shall be stored at a temperature of 55 ±2°C and a relative humidity of 20% or less for 16 to 24 hours.							
	And then the capacitor shall be allowed immediately to cool in container using appropriate dryer such as activated carbon, silica gel  The capacitor body shall be held in such a manner so that axis of the lead is vertical. The tensile force of 10N (for Ø 0,6mm)	lead) The capacitor shal be no						
Robustness of	ot 5N (for Ø 0,5mm lead) shall be applied to the lead in a direction of ist axis and acting in a direction away from the body of	· · · · · · · · · · · · · · · · · · ·						
Termination	capacitor for 10 ±1 seconds.	no looseneed or cut off.						
		Super High Voltage Dis						
		Super right voltage Dis						

										i ait ivo
DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	30.04.2011	Cuctomor
APPD:	Schumi			FINISH	Jamy		Shee	t No.	4 from 14	Customer:

email: info@edcon-components.com

**Ceramic Capacitor** 

Part No.:

123005









Bending	The capacitor is held in such a manner so that axis of the lead is vertical. As mass applying a force of 5N (for Ø 0,6mm lead) or 2,5N (for Ø 0,5mm lead) is then suspended from the end of the lead. The body of the capacitor is then inclined within a period of 2 to 3 seconds, through an angle of approximately 90° in the vertical plane and then returned to its initial position over the same period of time. This operation constitutes one bend. The lead shall be subjected to a total of 2 alternating bends in to opposite directions.	The lea	The lead shall be no broken.		
Endurance characte	ristics and test methods.				
Solderability	Solder temperature: 235 ±5°C Immersion time; 2 ± 0,5 seconds Immersion speed: 25 ± 6mm/s	A new uniform coating of the surface being imm	of solder shall cover a minimum of 95% mersed.		
	Frequency range: 10~55Hz.	Apperance	No visible damage		
Vibration	Amplitutde (total excursion); 1,5mm	Capacitance change	Within specified tolerance		
VIDIALION	Total duration: 6hours. This motion shall be aplied for 2 hours in aech of three mutually perpendicular directions.	Quality factor or dissipation factor	Refer to clause 5.1.2		
	Solder temperature and immersion time: 260 ± 5°C, 10 ± 0,5 seconds.	Apperance	No visible damage		
Resistance to Soldering Heat	The immersing depth shall be a position 1,27mm from the seating plane.	Capacitance change	± 2,5% or ± 0,25pf (whichever is greater, for class I). ± 5% (for Y5P and YR). ±15% (for Y5U and Z5U). ±20% (for Y5V and Z5V).		
	Post treatment: The capacitor shall be preversed at the standard atmospheric condition for 24 ±	Voltage Proof ( for			
	2hours.	between leads only)			
Solvent resistance	The capacitor shall be immersed into isopropylalcohol. For 30 ± seconds.	Apperance	No visible damage legible marking		

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	30.04.2011
APPD:	Schumi			FINISH	Jamy		Shee	t No.	5 from 14

email: info@edcon-components.com

Part No.:

Customer:

Super High Voltage Disc Ceramic Capacitor

123005









							Apperand	ce	No visi	ble damage Legi	ible marking	
									± 5% c	r ± 0,5pf (whiche	ever is the greater fo	r class 1)
							Capacitance Change	± 10%	(Y5P and YR)			
							Capacitarice	Change	± 20%	(Y5U and Z5U)		
	The capacitor shall be placed in the test chamber at temperature of -25 $\pm$ 2°C for							± 30%	(Y5V and Z5V)			
									Q ≥ 20	0 + 10Cr ( for Cr	<10pf	
Temperature Cycle			om temperature for temperature for					Q ≥ 27	5 + 5/2Cr ( for 10	Opf ≤ CR<30pf		
Temperature Cycle			e subjected to a				Quality fact	tor or	Q ≥ 35	0 (for Cr ≥ 30pf)	1	
			ed at the standar				dissipation f	factor	5% ma	x. (Y5V & Z5V)		
	`	onan bo provoro	ou at the otaliaal	a annoopnono e		2 110010.			3% ma	x. (Y5P, YR, Y5I	U & Z5U)	
									7,5% n	nax. (SBBLC)		
							Inculation Dog	oiotonoo	1000M	$\Omega$ min.		
							Insulation Resistance		500M	Ω min. (SBBLC)		
					Voltage pr	roof	For be	tween leads only	<b>'.</b>			
				Apperand	ce	No visi	ble damage					
							Capacitance C	Change	As the	same		
	The	capacitor shall l	oe stored for 500	+24 hours at a te	emperature of 40	0 ± 2°C and a	Q or DF	F	As the	same		
Damp Heat	relative	•	to 95%. Post trea	•	•	reseved for 1 to			2500M	$\Omega$ min (Class I )		
		2 h	nours at the stand	dard atmospheri	ic condition.	dition. Insulation Resi				$\Omega$ min (Class II )	)	
									500M Ω min (Class III )			
							Voltage pr	roof	For between leads only.			
							Apperand	ce				
	The	voltage that is a	equal to 200% rat	ted voltage (for l	50\/ and 500\/ c	anacitors) or	Capacitance C					
			or 1KV~3KV cap				Quality fact		The same us before			
Endurance			ed continuously t				dissipation f	factor		• •	ne same as before	
			-	R) for 1000 <sup>+48</sup> ho	•	00 1 0 0 (120	Insulation Res	eistance				
			_ 0 0 101 11	, 101 1000	Jul 0.		insulation res	Distance				
							Voltage pr	roof	Super High Voltage Disc			Voltage Disc
												Capacitor
DDW.		OL II/D	10/21	5.4.5.T.	\A/:1	TOLERANGE	N/a	T 5:		1 00 04 0044	Part No.:	123005
	son	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DA	ΙĖ	30.04.2011	Customer:	
APPD: Sch	numi			FINISH	Jamy		Snee	et No.		6 from 14		









#### Structure and ROHs Materail request

The marking of class I temperature characteristics is the color block on top of the capacitor

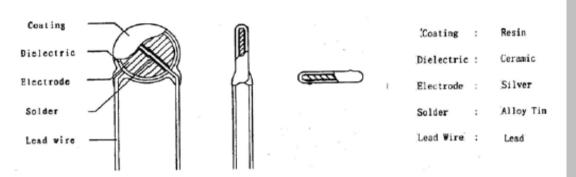
Temperature	C	Ο Δ	SL					
Characteristics	Bla	ack	None					
The marking of class II & III temperature characteristics is symbols specified in following table:								
Temperature         Y5P         Y5U / Z5U         Y5V / Z5V         YR								
Characteristics	Black	E	F HRR&R					

#### Capacitance

When rated capacitcance is under 1ßßpf the capacitance marking is value being rated capacitance in unit pf. When rated capacitance is 100pf or over the capacitance marking is made in third digit method.

#### Tolerance:

					_		
The tolerance							
table.							
Tolerance:	± 0,25pf	±0,5pf	±5%	±10%	±20%		
Symbol	C D J K M						
The tolerance							
following table	e.						
Tolerance:	± 10%	± 20%	.+50%, -20%	.+100%, 0%	.+80%, -20%		
Symbol	K	М	SL	Р	Z		



	Components	Material	ROHS request	Remark
ĺ	Coating	Resin	Cd <100ppm;	
ĺ	Dielectric	Ceramic	Pb <100ppm;	Appendix 1; SGS report
ĺ	Electrode	Silver	HO OF BBB BBBE	(Availbale as customer request or See Appendix
ĺ	Solder	Alloy tin	HG, Ctr PBBs, PBDEs, N.D	1
ĺ	Lead Wire	Lead	14,5	

#### Rated Voltage

When rated voltage is 50V the voltage marking is symbol "\_\_\_\_" under capcitance marking.

When rated voltage is 500V the voltage marking is symbol "\_\_" over capcitance marking.

When rated voltage is 1000Vor over, the voltage marking is symbols 1KV, 2KV, 3KV, 6KV..... over capacitance marking.

Super High	Voltage Disc
Ceramic	Capacitor

Part No.: 123005

•	Customore
	Customer:
1	

DRW: CHKD Wilson MATL: 30.04.2011 Jason Wilson **TOLERANCE** Mason DATE APPD: FINISH Schumi Sheet No. 7 from 14 Jamy



271J

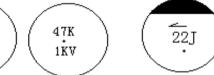




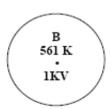


#### Example of marking (Class I)



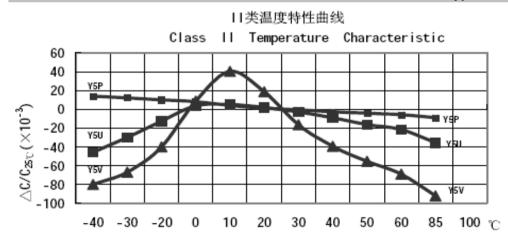


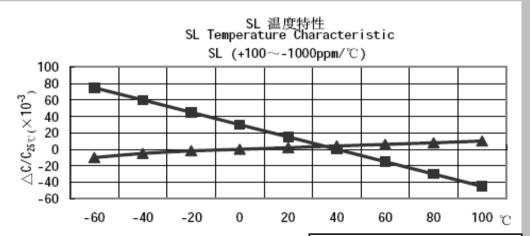
#### Example of marking (Class II & III) over 1000 Volt





#### **Typical Characteristics Graph**





	gh Voltage Disc lic Capacitor
Part No.:	123005

Customer:

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	30.04.2011
APPD:	Schumi			FINISH	Jamy		Shee	t No.	8 from 14



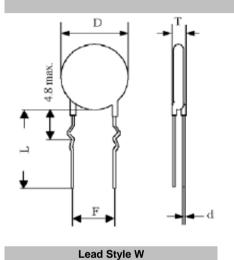


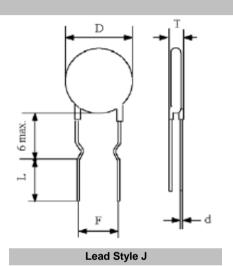


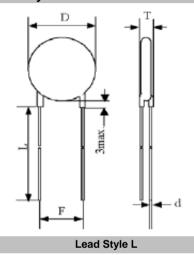


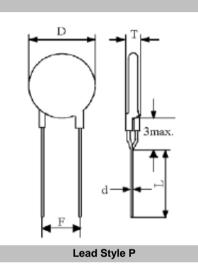
A MEMBER OF EDCON-GROUP

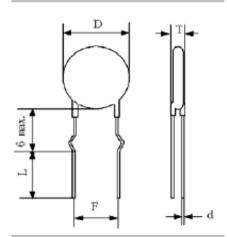
#### **Lead Style**











Super High Voltage D	isc
Ceramic Capacitor	

Part No.: **I23005** 

Customer:

Lead Style K

CHKD Wilson MATL: DRW: Wilson TOLERANCE Mason Jason DATE 30.04.2011 APPD: FINISH Schumi Sheet No. 9 from 14 Jamy

www.edcon-components.com

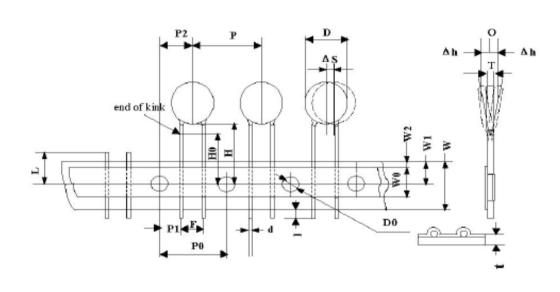


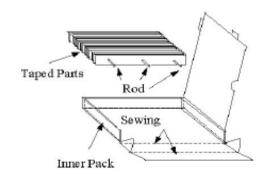






#### Packing Style F





Symbol	Dimension (mm)
P0	12,7 ±0,2
P0	12,7 ±1,0
F	5,0 +0,5/-0,2
P1	3,85 ±0,4
P2	6,35 ±0,4
H0	16,0 ±0,5
Н	20,0 ±0,5
W	18,0 ±0,5
W0	8,0 min
W1	9,0 ±0,3
W2	3,0max.
t	0,7 ±0,2
D	To comply with individual sheet
D0	4,0 ±0,2
d	To comply with individual sheet
I	2,0 max.
L	11 max.
Т	To comply with individual sheet
ΔS	0,5 max
ΔΗ	0,5 max

Super High	Voltage Disc
Ceramic	Capacitor

Part No.: **I23005** 

DRW: CHKD Wilson MATL: Wilson TOLERANCE Mason Jason DATE 30.04.2011 Customer: APPD: Schumi FINISH Sheet No. 10 from 14 Jamy

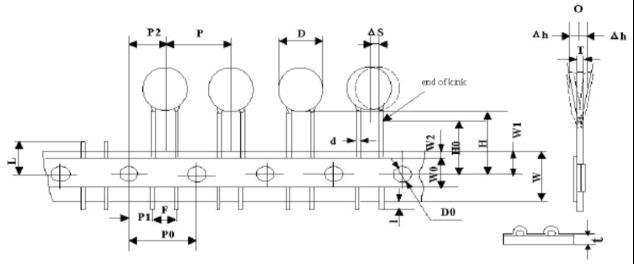




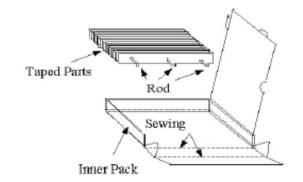




#### Packing Style V



Symbol	Dimension (mm)
P0	15,0 ±0,2
P0	15,0 ±1,0
F	7,5 +0,5/-0,2
P1	3,75 ±0,4
P2	7,5 ±0,4
H0	16,0 ±0,5
Н	20,0 ±0,5
W	18,0 ±0,5
W0	11,5 min
W1	9,0 ±0,3
W2	3,0max.
t	0,7 ±0,2
D	To comply with individual sheet
D0	4,0 ±0,2
d	To comply with individual sheet
I	2,0 max.
L	11 max.
Т	To comply with individual sheet
ΔS	0,5 max
ΔΗ	0,5 max



Super High Voltage Disc Ceramic Capacitor

Part No.: I23005

CHKD Wilson MATL: DRW: Wilson TOLERANCE Mason Jason DATE 30.04.2011 APPD: FINISH Schumi Sheet No. 11 from 14 Jamy

email: info@edcon-components.com

Customer:

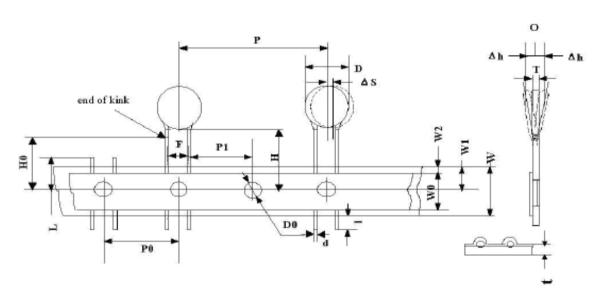


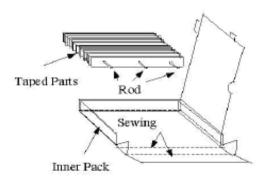






#### Packing Style U





Symbol	Dimension (mm)
P0	12,7 ±0,2
P0	25,4 ±1,0
F	10,0 +0,5/-0,2
P1	7,7 ±0,4
P2	
H0	16,0 ±0,5
Н	20,0 ±0,5
W	18,0 ±0,5
W0	11,5 min
W1	9,0 ±0,3
W2	3,0max.
t	0,7 ±0,2
D	To comply with individual sheet
D0	4,0 ±0,2
d	To comply with individual sheet
I	2,0 max.
L	11 max.
Т	To comply with individual sheet
ΔS	0,5 max
ΔΗ	0,5 max

# Super High Voltage Disc Ceramic Capacitor

Part No.: **I23005** 

CHKD Wilson MATL: DRW: Wilson TOLERANCE Mason Jason DATE 30.04.2011 Customer: APPD: FINISH Sheet No. Schumi 12 from 14 Jamy









#### **Ordering Informations**

Serie
122005

Range	Tolerance Code	Material Code	Voltage Code	Lead Length	Lead Style	Lead Pitch	Lead Diameter	ROHS	Packing Code
-------	-------------------	------------------	--------------	-------------	------------	------------	------------------	------	-----------------

123005

681	K	5P	Α	11	L	D	8	R	BU

<b>681=</b> 680pf	<b>K=</b> ±10%	<b>5P=</b> Y5P	<b>A=</b> 12KV	<b>11</b> = 11mm	L= Style L	<b>D</b> = Pitch 10mm	<b>8=</b> 0,80mm	R= ROHS Conform	<b>BU=</b> Bulk Ware
,				<b>25=</b> 25mm	P= Style P			<b>N</b> = NON ROHS	<b>TF=</b> Tape Style F
					<b>W=</b> Style W			Conform	<b>TV=</b> Tape Style U
					<b>J=</b> Style J				<b>TU=</b> Tape Style U
					K= Style K			'	-

Super High Voltage Disc Ceramic Capacitor

Part No.: **I23005** 

Customer:

DRW: Jason CHKD Wilson MATL: Wilson TOLERANCE Mason DATE 30.04.2011 APPD: FINISH Sheet No. Schumi Jamy 13 from 14



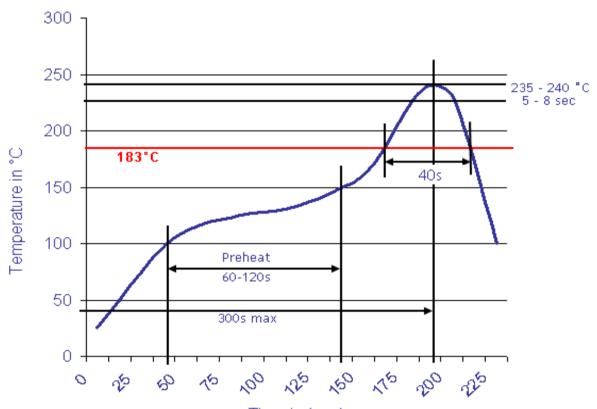






#### **Soldering Profile Curve**

# Classification Reflow Profile (JEDEC J-STD-020C)



Time in (sec)

Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	30.04.2011
Schumi			FINISH	Jamy		Sheet No.		14 from 14

**Super High Voltage Disc Ceramic Capacitor** 

Part No.: 123005

Customer:

www.edcon-components.com

Schu

DRW:

APPD: