

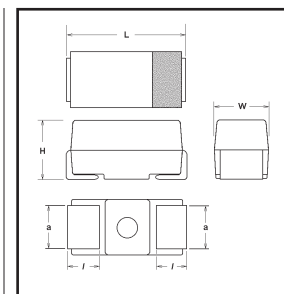
## SAJ SERIES

### INTRODUCTION

The SAJ series Tantalum Chip Capacitors cover a wide range of values and applications. The Extended range of this series cover higher capacitance values in smaller case sizes. Also included are low profile capacitors developed for special applications where height is critical.

### FEATURES:

- HIGH SOLDER HEAT RESISTANCE - 269°C, 5 TO 10 SECS.
- ULTRA COMPACT SIZES IN EXTENDED RANGE (**BOLD PRINT**) ALLOWS HIGH DENSITY COMPONENT MOUNTING.
- LOW PROFILE CAPACITORS WITH HEIGHT 1.2MM MAX (A2 & B2) AND 1.5MM MAX (C2) FOR USE ON PCB'S, WHERE HEIGHT IS CRITICAL.
- COMPONENTS MEET IEC SPEC QC 300801/US0001 AND EIA 535BAAC. REEL PACKING STDS- EIAJ RC-1009B /EIA 481/IEC 286-3.
- EPOXY MOLDED COMPONENTS WITH CONSISTENT DIMENSIONS AND SURFACE FINISH. ENGINEERED FOR AUTOMATIC ONsertION.
- COMPATIBLE WITH ALL POPULAR HIGH SPEED ASSEMBLY MACHINES.



### GENERAL SPECIFICATIONS

**CAPACITANCE RANGE:** 0.1  $\mu$ F To 330  $\mu$ F. **VOLTAGE RANGE:** 4VDC to 50VDC. **CAPACITANCE TOLERANCE:**  $\pm 20\%$ (M),  $\pm 10\%$ (K), ( $\pm 5\%$ (J) - UPON REQUEST). **TEMPERATURE RANGE:** -55 TO +125°C WITH DERATING ABOVE 85°C. **ENVIRONMENTAL CLASSIFICATION:** 55/125/56 (IEC68-2). **DISSIPATION FACTOR:** 0.1 TO 1  $\mu$ F 4% MAX, 1.5 TO 6.8  $\mu$ F 6% MAX, 10 TO 330  $\mu$ F 8% MAX. **LEAKAGE CURRENT:** NOT MORE THAN 0.01CV  $\mu$ A or 0.5  $\mu$ A WHICHEVER IS GREATER. **FAILURE RATE:** 1% PER 1000 HRS.

### LIFE TEST DETAILS

CAPACITORS SHALL WITHSTAND RATED DC VOLTAGE APPLIED AT 85°C FOR 2000 HRS OR DERATED DC VOLTAGE APPLIED AT 125°C FOR 1000 HRS. AFTER THE TEST:

1. CAPACITANCE CHANGE SHALL NOT EXCEED  $\pm 10\%$  OF INITIAL VALUE.
2. DISSIPATION FACTOR SHALL BE WITHIN THE NORMAL SPECIFIED LIMITS.
3. DC LEAKAGE CURRENT SHALL BE WITHIN 125% OF NORMAL LIMIT.
4. NO REMARKABLE CHANGE IN APPEARANCE. MARKINGS TO REMAIN LEGIBLE.

CASE DIMENSIONS IN MILLIMETERS (INCHES)						
CASE	EIA/IEC	L	W	H	I	a
<b>R</b>	2012	2.05 $\pm$ 0.2 (0.08 $\pm$ 0.008)	1.3 $\pm$ 0.2 (0.05 $\pm$ 0.008)	1.2 $\pm$ 0.2 (0.047 $\pm$ 0.008)	0.5 $\pm$ 0.3 (0.020 $\pm$ 0.012)	1.2 $\pm$ 0.1 (0.047 $\pm$ 0.004)
<b>A2</b>	3216L	3.2 $\pm$ 0.2 (0.126 $\pm$ 0.008)	1.6 $\pm$ 0.2 (0.063 $\pm$ 0.008)	1.2 $\pm$ 0.2 (0.047 $\pm$ 0.008)	0.7 $\pm$ 0.3 (0.028 $\pm$ 0.012)	1.2 $\pm$ 0.1 (0.047 $\pm$ 0.004)
<b>A</b>	3216	3.2 $\pm$ 0.2 (0.126 $\pm$ 0.008)	1.6 $\pm$ 0.2 (0.063 $\pm$ 0.008)	1.6 $\pm$ 0.2 (0.063 $\pm$ 0.008)	0.8 $\pm$ 0.3 (0.032 $\pm$ 0.012)	1.2 $\pm$ 0.1 (0.047 $\pm$ 0.004)
<b>B2</b>	3528L	3.5 $\pm$ 0.2 (0.138 $\pm$ 0.008)	2.8 $\pm$ 0.2 (0.110 $\pm$ 0.008)	1.2 $\pm$ 0.2 (0.047 $\pm$ 0.008)	0.7 $\pm$ 0.3 (0.028 $\pm$ 0.012)	1.8 $\pm$ 0.1 (0.071 $\pm$ 0.004)
<b>B</b>	3528	3.5 $\pm$ 0.2 (0.138 $\pm$ 0.008)	2.8 $\pm$ 0.2 (0.110 $\pm$ 0.008)	1.9 $\pm$ 0.2 (0.075 $\pm$ 0.008)	0.8 $\pm$ 0.3 (0.031 $\pm$ 0.012)	2.2 $\pm$ 0.1 (0.087 $\pm$ 0.004)
<b>H</b>	4726	4.8 $\pm$ 0.2 (0.189 $\pm$ 0.008)	2.6 $\pm$ 0.2 (0.102 $\pm$ 0.008)	1.8 $\pm$ 0.2 (0.071 $\pm$ 0.008)	0.8 $\pm$ 0.3 (0.032 $\pm$ 0.012)	1.8 $\pm$ 0.1 (0.071 $\pm$ 0.004)
<b>C2</b>	6032L	5.8 $\pm$ 0.2 (0.228 $\pm$ 0.008)	3.2 $\pm$ 0.2 (0.126 $\pm$ 0.008)	1.5 $\pm$ 0.2 (0.059 $\pm$ 0.008)	0.7 $\pm$ 0.3 (0.028 $\pm$ 0.012)	2.2 $\pm$ 0.1 (0.087 $\pm$ 0.004)
<b>C</b>	6032	6.0 $\pm$ 0.3 (0.236 $\pm$ 0.012)	3.2 $\pm$ 0.3 (0.126 $\pm$ 0.012)	2.5 $\pm$ 0.3 (0.098 $\pm$ 0.012)	1.3 $\pm$ 0.3 (0.051 $\pm$ 0.012)	2.2 $\pm$ 0.1 (0.087 $\pm$ 0.004)
<b>D2</b>	6045	5.8 $\pm$ 0.3 (0.228 $\pm$ 0.012)	4.5 $\pm$ 0.3 (0.177 $\pm$ 0.012)	3.1 $\pm$ 0.3 (0.122 $\pm$ 0.012)	1.3 $\pm$ 0.3 (0.051 $\pm$ 0.012)	3.1 $\pm$ 0.1 (0.122 $\pm$ 0.004)
<b>D</b>	7343	7.3 $\pm$ 0.3 (0.287 $\pm$ 0.012)	4.3 $\pm$ 0.3 (0.170 $\pm$ 0.012)	2.8 $\pm$ 0.3 (0.110 $\pm$ 0.012)	1.3 $\pm$ 0.3 (0.051 $\pm$ 0.012)	2.4 $\pm$ 0.1 (0.095 $\pm$ 0.004)
<b>E</b>	7343H (TALLER)	7.3 $\pm$ 0.3 (0.287 $\pm$ 0.012)	4.3 $\pm$ 0.3 (0.170 $\pm$ 0.012)	4.0 $\pm$ 0.3 (0.158 $\pm$ 0.012)	1.3 $\pm$ 0.3 (0.051 $\pm$ 0.012)	2.4 $\pm$ 0.1 (0.095 $\pm$ 0.004)



SAJ SERIES RATINGS AND CASE CODES

CAPACITANCE		RATED VOLTAGE DC at 85 °C															
CODE	µF	4V		6.3V		10V		16V		20V		25V		35V		50V	
		STD	EXT	STD	EXT	STD	EXT	STD	EXT	STD	EXT	STD	EXT	STD	EXT	STD	EXT
104	0.1										A2			A		A	
154	0.15										A2			A		B	A
224	0.22										A2			A		B	
334	0.33										A2			A		B	
474	0.47										R, A2	A		B	A	C	B
684	0.68								R, A2	A	A2	A		B	A	C	
105	1.0						R, A2	A	A2	A	B2	B	A	B	A	C	
155	1.5				R, A2	A	A2	A			A, B2	B	A	C	B	A	C
225	2.2		R, A2	A	A2	A		B	A, B2	B	A, B2	B		C	B*	D2, D	C
335	3.3	A	A2	A			A, B2	B	A, B2	B		C	B	C		D	D2
475	4.7	A			A, B2	B	A, B2	B		C	B, H	C		D2, D	C	D	
685	6.8		A, B2	B	A, B2	B	A	C	B, H, C2	C	B, C2	D	C	D2, D	C		E*
106	10	B	A, B2	B	A	C	B, H, C2	C	B, C2*	D	C	D2, D	C	D	D2		E*
156	15	B	A	C	B, H, C2	C	B, H, C2			D2, D	C	D	D2		E		
226	22	C	B, H, C2	C	B, H, C2			B, C	D2, D	C	D	D2		D2, D		E	
336	33	C	B, H, C2		B, C	D2, D	C	D	D2		D2, D		E				
476	47		B, C	D2, D	C	D	D2		D2, D		E						
686	68	D2, D	C	D	D2		D2, D	E	D		E						
107	100	D	D2	D	D2	E	D		E								
157	150		D2, D	E	D		E										
227	220	E	D		E		E*										
337	330		E*		E*												

STD = STANDARD RANGE. EXT = EXTENDED RANGE & SPECIAL SIZES. \* = CONSULT FACTORY

SAJ SERIES SPECIFICATIONS

4 V DC Rated Voltage

Surge Voltage 5 V DC @ 85°C, 3.2 V DC @ 125°C

SHARMA PART NUMBER	CAP VALUE µF	DCL (MAX) µA	DF% (MAX) at+25°C	ESR(max) OHMS at 100KHz	RIPPLE (max) Irms Amps at 100 KHz
SAJ R 225 M 04 R 252	2.2	0.5	6	25.0	0.040
SAJ A2 225 M 04 R 302	2.2	0.5	6	25.0	0.043
SAJ A2 335 M 04 R 302	3.3	0.5	6	18.0	0.058
SAJ A 335 M 04 R 202	3.3	0.5	6	9.0	0.088
SAJ A 475 M 04 R 202	4.7	0.5	6	7.5	0.097
SAJ A 685 M 04 R 202	6.8	0.5	6	6.5	0.104
SAJ B2 685 M 04 R 302	6.8	0.5	6	6.5	0.104
SAJ A 106 M 04 R 202	10	0.5	6	6.0	0.108
SAJ B2 106 M 04 R 302	10	0.5	6	6.0	0.108
SAJ B 106 M 04 R 202	10	0.5	6	4.0	0.141
SAJ A 156 M 04 R 202	15	0.6	6	4.0	0.132
SAJ B 156 M 04 R 202	15	0.6	6	3.5	0.151
SAJ B 226 M 04 R 202	22	0.9	6	3.2	0.158
SAJ H 226 M 04 R 202	22	0.9	6	3.2	0.163
SAJ C2 226 M 04 R 202	22	0.9	6	3.2	0.168
SAJ C 226 M 04 R 501	22	0.9	6	2.5	0.210
SAJ B 336 M 04 R 202	33	1.3	6	2.4	0.183
SAJ H 336 M 04 R 202	33	1.3	6	2.4	0.188
SAJ C2 336 M 04 R 202	33	1.3	6	2.4	0.194
SAJ C 336 M 04 R 202	33	1.3	6	2.2	0.224
SAJ B 476 M 04 R 202	47	1.9	6	2.2	0.191
SAJ C 476 M 04 R 501	47	1.9	6	1.8	0.247
SAJ C 686 M 04 R 501	68	2.7	6	1.6	0.262
SAJ D2 686 M 04 R 501	68	2.7	6	1.1	0.363
SAJ D 686 M 04 R 501	68	2.7	6	1.1	0.369
SAJ D2 107 M 04 R 501	100	4.0	8	0.9	0.401
SAJ D 107 M 04 R 501	100	4.0	8	0.9	0.408
SAJ D2 157 M 04 R 501	150	6.0	8	0.7	0.455
SAJ D 157 M 04 R 501	150	6.0	8	0.7	0.463
SAJ D 227 M 04 R 501	220	8.8	8	0.7	0.463
SAJ E 227 M 04 R 401	220	8.8	8	0.6	0.524
SAJ E* 337 M 04 R 401	330	13.2	8	0.6	0.524

6 V DC Rated Voltage

Surge Voltage 8 V DC @ 85°C, 5 V DC @ 125°C

SHARMA PART NUMBER	CAP VALUE µF	DCL (MAX) µA	DF% (MAX) at+25°C	ESR(max) OHMS at 100KHz	RIPPLE (max) Irms Amps at 100 KHz
SAJ R 155 M 06 R 252	1.5	0.5	6	25.0	0.040
SAJ A2 155 M 06 R 302	1.5	0.5	6	25.0	0.049
SAJ A2 225 M 06 R 302	2.2	0.5	6	20.0	0.055
SAJ A 225 M 06 R 202	2.2	0.5	6	9.0	0.088
SAJ A 335 M 06 R 202	3.3	0.5	6	7.5	0.097
SAJ A 475 M 06 R 202	4.7	0.5	6	6.5	0.104
SAJ B2 475 M 06 R 302	4.7	0.5	6	6.5	0.104

6 V DC Rated Voltage - Continued

Surge Voltage 8 V DC @ 85°C, 5 V DC @ 125°C

SHARMA PART NUMBER	CAP VALUE µF	DCL (MAX) µA	DF% (MAX) at+25°C	ESR(max) OHMS at 100KHz	RIPPLE (max) Irms Amps at 100 KHz
SAJ A 685 M 06 R 202	6.8	0.5	6	6.0	0.108
SAJ B2 685 M 06 R 302	6.8	0.5	6	5.0	0.118
SAJ B 685 M 06 R 202	6.8	0.5	6	4.0	0.141
SAJ A 106 M 06 R 202	10	0.6	6	4.0	0.132
SAJ B 106 M 06 R 202	10	0.6	6	3.5	0.151
SAJ B 156 M 06 R 202	15	1.0	6	3.2	0.158
SAJ H 156 M 06 R 202	15	1.0	6	3.0	0.168
SAJ C2 156 M 06 R 202	15	1.0	6	3.0	0.173
SAJ C 156 M 06 R 501	15	1.0	6	2.5	0.210
SAJ B 226 M 06 R 202	22	1.4	6	2.4	0.183
SAJ H 226 M 06 R 202	22	1.4	6	2.4	0.188
SAJ C2 226 M 06 R 501	22	1.4	6	2.4	0.224
SAJ C 226 M 06 R 501	22	1.4	6	2.2	0.224
SAJ B 336 M 06 R 202	33	2.1	6	2.2	0.191
SAJ C 336 M 06 R 501	33	2.1	6	1.8	0.247
SAJ C 476 M 06 R 501	47	3.0	6	1.6	0.262
SAJ D2 476 M 06 R 501	47	3.0	6	1.1	0.363
SAJ D 476 M 06 R 501	47	3.0	6	1.1	0.369
SAJ D2 686 M 06 R 501	68	4.3	6	0.9	0.401
SAJ D 686 M 06 R 501	68	4.3	6	0.9	0.408
SAJ D2 107 M 06 R 501	100	6.0	8	0.8	0.426
SAJ D 107 M 06 R 501	100	6.0	8	0.8	0.433
SAJ D 157 M 06 R 501	150	9.0	8	0.8	0.433
SAJ E 157 M 06 R 401	150	9.0	8	0.6	0.524
SAJ E 227 M 06 R 401	220	13.2	8	0.6	0.524
SAJ E* 337 M 06 R 401	330	19.8	8	0.6	0.524

10 V DC Rated Voltage

Surge Voltage 13 V DC @ 85°C, 8 V DC @ 125°C

SHARMA PART NUMBER	CAP VALUE µF	DCL (MAX) µA	DF% (MAX) at+25°C	ESR(max) OHMS at 100KHz	RIPPLE (max) Irms Amps at 100 KHz
SAJ R 105 M 10 R 252	1	0.5	4	25.0	0.040
SAJ A2 105 M 10 R 302	1	0.5	4	25.0	0.049
SAJ A2 155 M 10 R 302	1.5	0.5	6	20.0	0.055
SAJ A 155 M 10 R 202	1.5	0.5	6	10.0	0.084
SAJ A 225 M 10 R 202	2.2	0.5	6	7.5	0.097
SAJ A 335 M 10 R 202	3.3	0.5	6	6.5	0.104
SAJ B2 336 M 10 R 302	3.3	0.5	6	6.5	0.104
SAJ A 475 M 10 R 202	4.7	0.5	6	6.0	0.108
SAJ B2 475 M 10 R 302	4.7	0.5	6	6.0	0.141
SAJ B 475 M 10 R 202	4.7	0.5	6	4.0	0.141
SAJ A 685 M 10 R 202	6.8	0.7	6	4.0	0.132
SAJ B 685 M 10 R 202	6.8	0.7	6	3.5	0.151
SAJ B 106 M 10 R 202	10	1.0	6	3.2	0.158

NOTE: EXTENDED RANGE & SPECIAL CASE SIZES SHOWN IN BOLD. FOR 10% TOLERANCE CHANGE TOLERANCE CODE FROM M TO K. FOR 5% TOLERANCE CHANGE TOLERANCE CODE FROM M TO J. STANDARD REEL SIZE AND ORIENTATION = R. FOR OTHER SEE ORDERING INFORMATION ON PAGE 3. \* = CONSULT FACTORY.



10 V DC Rated Voltage - Continued

Surge Voltage 13 V DC @ 85°C, 8 V DC @ 125°C

Table with 7 columns: SHARMA PART NUMBER, CAP VALUE (µF), DCL (MAX) (µA), DF% (MAX) at +25°C, ESR(max) OHMS at 100KHz, Ripples (max) Irms Amps at 100 KHz. Rows include parts like SAJ H 106 M 10 R 202, SAJ C2 106 M 10 R 202, etc.

16 V DC Rated Voltage

Surge Voltage 20 V DC @ 85°C, 13 V DC @ 125°C

Table with 7 columns: SHARMA PART NUMBER, CAP VALUE (µF), DCL (MAX) (µA), DF% (MAX) at +25°C, ESR(max) OHMS at 100KHz, Ripples (max) Irms Amps at 100 KHz. Rows include parts like SAJ R 684 M 16 R 252, SAJ A2 684 M 16 R 302, etc.

20 V DC Rated Voltage

Surge Voltage 26 V DC @ 85°C, 16 V DC @ 125°C

Table with 7 columns: SHARMA PART NUMBER, CAP VALUE (µF), DCL (MAX) (µA), DF% (MAX) at +25°C, ESR(max) OHMS at 100KHz, Ripples (max) Irms Amps at 100 KHz. Rows include parts like SAJ A2 104 M 20 R 302, SAJ A2 154 M 20 R 302, etc.

20 V DC Rated Voltage - Continued

Surge Voltage 26 V DC @ 85°C, 16 V DC @ 125°C

Table with 7 columns: SHARMA PART NUMBER, CAP VALUE (µF), DCL (MAX) (µA), DF% (MAX) at +25°C, ESR(max) OHMS at 100KHz, Ripples (max) Irms Amps at 100 KHz. Rows include parts like SAJ D 156 M 20 R 501, SAJ D2 226 M 20 R 501, etc.

25 V DC Rated Voltage

Surge Voltage 32 V DC @ 85°C, 20 V DC @ 125°C

Table with 7 columns: SHARMA PART NUMBER, CAP VALUE (µF), DCL (MAX) (µA), DF% (MAX) at +25°C, ESR(max) OHMS at 100KHz, Ripples (max) Irms Amps at 100 KHz. Rows include parts like SAJ A 474 M 25 R 202, SAJ A 684 M 25 R 202, etc.

35 V DC Rated Voltage

Surge Voltage 45 V DC @ 85°C, 28 V DC @ 125°C

Table with 7 columns: SHARMA PART NUMBER, CAP VALUE (µF), DCL (MAX) (µA), DF% (MAX) at +25°C, ESR(max) OHMS at 100KHz, Ripples (max) Irms Amps at 100 KHz. Rows include parts like SAJ A 104 M 35 R 202, SAJ A 154 M 35 R 202, etc.

50 V DC Rated Voltage

Surge Voltage 63 V DC @ 85°C, 40 V DC @ 125°C

Table with 7 columns: SHARMA PART NUMBER, CAP VALUE (µF), DCL (MAX) (µA), DF% (MAX) at +25°C, ESR(max) OHMS at 100KHz, Ripples (max) Irms Amps at 100 KHz. Rows include parts like SAJ A 104 M 50 R 202, SAJ A 154 M 50 R 202, etc.

NOTE: EXTENDED RANGE & SPECIAL CASE SIZES SHOWN IN BOLD. FOR 10% TOLERANCE CHANGE TOLERANCE CODE FROM M TO K. FOR 5% TOLERANCE CHANGE TOLERANCE CODE FROM M TO J. STANDARD REEL SIZE AND ORIENTATION = R. FOR OTHER SEE ORDERING INFORMATION ON PAGE 3. \* = CONSULT FACTORY.