Surface Mount Aluminum Electrolytic Capacitors

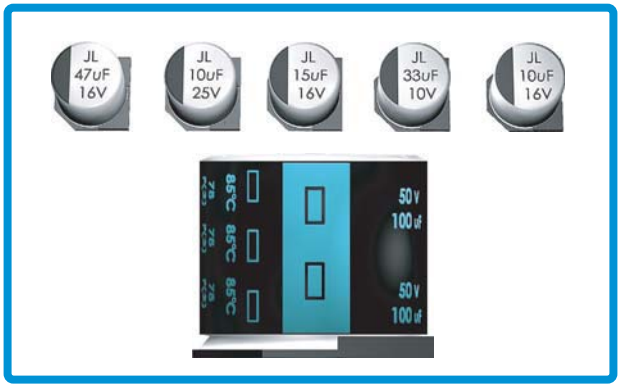
RoHS

SBP & SHB Series
(Bi-Polar Chip Type)

MERITEK

SBP SERIES 85°C, 2,000 Hours
SHB SERIES 105°C, 1,000 Hours

- Bi-polar chip type, used in circuit whose polarity is sometimes reversed
- SBP SERIES 85°C max. operating temperature
- SHB SERIES 105°C max. operating temperature



SPECIFICATIONS

ITEM	CHARACTERISTICS	
Series	SBP	SHB
Operating Temperature Range	-40 to +85°C	-40 to +105°C
Rated Voltage	4 to 50VDC	4 to 50VDC
Capacitance Tolerance	±20% (M) at 20°C, 120Hz	
Leakage Current	I≤0.05CV or 10μA, whichever is greater (at 20°C, after 2 minutes.) Where I: Leakage Current (μA), C: Nominal Capacitance (μF), V: Rated Voltage (VDC)	

Dissipation Factor (Tan δ) at 20°C ,120Hz

Rated voltage	4V	6.3V	10V	16V	25V	35V	50V
SBP	0.45	0.32	0.26	0.24	0.22	0.20	0.20
SHB	-	0.35	0.26	0.24	0.20	0.18	0.18

Low Temperature Characteristics

Max impedance ratio at 120Hz, 20°C

Rated voltage	4	6.3	10	16	25	35	50
Z ratio at –25 to 20°C	7	4	3	2	2	2	2
Z ratio at –25 to 20°C	15	10	8	6	4	3	3

Max impedance ratio at 120Hz, 20°C

Rated voltage	6.3	10	16	25	35	50
Z ratio at –25 to 20°C	4	3	2	2	2	2
Z ratio at –25 to 20°C	10	8	6	4	3	3

Load Life

The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with the following condition with its polarization reversed every 250 hours.

	SBP	SHB
Test time & temperature	2,000 hours at 85°C	1,000 hours at 105°C
Capacitance change	≤ ±20% of the initial value	≤ ±30% of the initial value
DF(tan δ)	≤ 200% of the initial specified value	≤ 300% of the initial specified value
Leakage current	≤ initial specified value	≤ initial specified value

Shelf Life

The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 85°C (SBP) or 105°C (SHB) without voltage applied.
The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at 24 hours and not more than 48 hours before the measurements.

	SBP	SHB
Capacitance change	±15% of the initial value	±25% of the initial value
DF(tan δ)	≤ 150% of the initial specified value	≤ 200% of the initial specified value
Leakage current	≤ initial specified value	≤ initial specified value

Others: Satisfies characteristic W of KS C 6421

PART NUMBERING SYSTEM

SBP **16V** **221** **M** **D55**

Meritek Series

Rated Voltage

CODE	4V	6.3V	10V	16V	25V	35V	50V

Capacitance

CODE	R1	R47	2R0	4R7	100	101
μF	0.1	0.47	2	4.7	10	100

Capacitance tolerance (20%)

Case size

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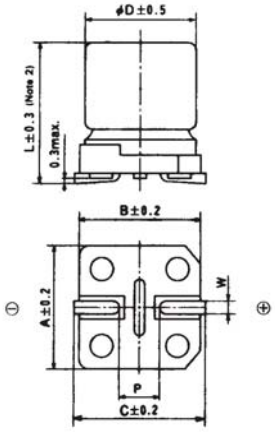
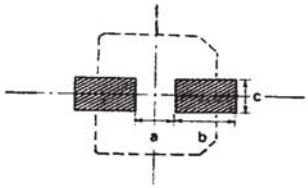
DIMENSIONS



SOLDER PAD

On PC Board, recommended



Solder pad.

Case code	φ D	L	A	B	C	W	P	a	b	c
D55	φ 4	5.2	4.3	4.3	5.1	0.5-0.8	1.0	1.0	2.6	1.6
D60	φ 4	5.7	4.3	4.3	5.1	0.5-0.8	1.0	1.0	2.6	1.6
E55	φ 5	5.2	5.3	5.3	5.9	0.5-0.8	1.4	1.4	3.0	1.6
E60	φ 5	5.7	5.3	5.3	5.9	0.5-0.8	1.4	1.4	3.0	1.6
F55	φ 6.3	5.2	6.6	6.6	7.2	0.5-0.8	1.9	1.9	3.5	1.6
F60	φ 6.3	5.7	6.6	6.6	7.2	0.5-0.8	1.9	1.9	3.5	1.6

RATING OF SBP SERIES

Ripple Current (mA rms/85°C, 120 Hz)
C.C (case code) R.C (Ripple current)

VDC / μF	4		6.3		10		16		25		35		50	
	C.C	R.C	C.C	R.C	C.C	R.C	C.C	R.C	C.C	R.C	C.C	R.C	C.C	R.C
0.10													D55	1.3
0.15													D55	1.9
0.22													D55	2.3
0.33													D55	2.8
0.47													D55	3.4
0.68													D55	4.1
1.0													D55	5.5
1.5													D55	6.5
2.2											D55	8	E55	9
3.3									D55	9	E55	11	E55	11
4.7							D55	11	E55	13	E55	13	F55	14
6.8					D55	12	E55	15	E55	15	F55	17		
10			D55	13	E55	18	E55	18	F55	21	F55	21		
15	D55	14	E55	21	E55	21	F55	24	F55	24				
22	E55	23	E55	23	F55	28	F55	28						
33	F55	33	F55	33	F55	33								
47	F55	36	F55	36										

RATING OF SHB SERIES

VDC / μF	6.3		10		16		25		35		50	
	C.C	R.C	C.C	R.C	C.C	R.C	C.C	R.C	C.C	R.C	C.C	R.C
0.10											D60	1.3
0.15											D60	1.9
0.22											D60	2.3
0.33											D60	2.8
0.47											D60	3.4
0.68											D60	4.1
1.0											D60	5.5
1.5											D60	7.5
2.2									D60	8.8	E60	10
3.3							D60	10	E60	13	E60	13
4.7					D60	12	E60	15	E60	15	F60	16
6.8			D60	13	E60	17	E60	17	F60	20	F60	20
10	D60	14	E60	20	E60	20	F60	23	F60	23		
15	E60	22	E60	22	F60	28	F60	28				
22	E60	25	F60	32	F60	32						
33	F60	35	F60	35								
47	F60	39										