

Construction

- Polar tantalum capacitors with solid electrolyte
- Flame-retardant plastic case (UL 94 V-0)
- Optionally tinned or gold-plated terminals



Features

- High volumetric efficiency
- Excellent solderability
- Stable temperature and frequency characteristics
- Low leakage current, low dissipation factor
- Low self-inductance
- High resistance to shock and vibration
- Suitable for use without series resistor
- Low ESR

Applications

- Telecommunications (e.g. mobile phones, private branch exchanges)
- Data processing (e.g. laptops, main frames)
- Measuring and control engineering
- Automotive electronics
- Medical engineering
- DC/DC converters

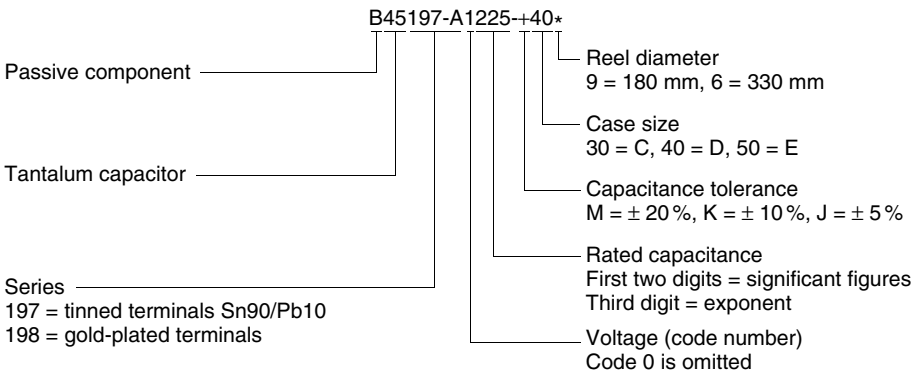
Soldering

Suitable for reflow soldering (IR and vapor phase) and wave soldering

Delivery mode

Taped and reeled in accordance with IEC 60286-3

Ordering code structure



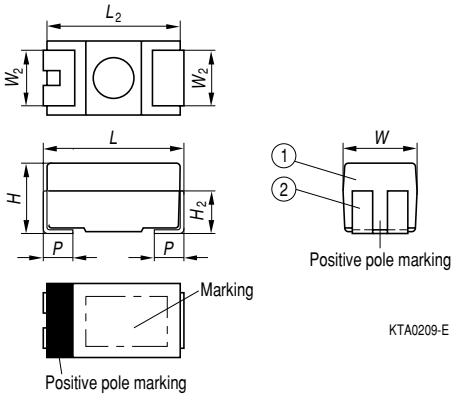
Specifications and characteristics in brief

For characteristic curves see page 73.

	SpeedPower (Low ESR)	
Series	B45197-A	B45198-R
Terminals	tinned	gold-plated
Rated voltage V_R (up to 85 °C)	6,3 ... 50 Vdc	
Rated capacitance C_R	3,3 ... 680 μ F	
Capacitance tolerance	$\pm 10\%$, $\pm 20\%$ $\pm 5\%$ (on request)	
Failure rate	at 40 °C; $\leq V_R$, $R_S \geq 3 \Omega/V$ (1 fit = $1 \cdot 10^{-9}$ failures/h)	
$C_R \cdot V_R \leq 330 \mu F \cdot V$	≤ 8 fit	
$C_R \cdot V_R > 330 \mu F \cdot V$	≤ 12 fit/24 fit ¹⁾	
$C_R \cdot V_R > 330 \mu F \cdot V$	≤ 24 fit (refer to series B4519*-H, "HighCap")	
Service life	> 500 000 h	
Leakage current (V_R , 5 min, 20 °C)	10 nA/ μ C	
ESR	100 ... 600 m Ω	
Detail specification (tinned terminals)	CECC 30801-805	
IEC climatic category	in accordance with IEC 60068-1 55/125/56 (–55/+125 °C; 56 days damp heat test)	

1) HighCap types

Dimensional drawing

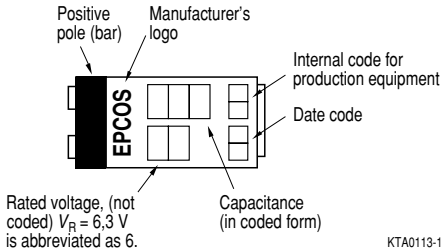


- ① Encapsulation: molded epoxy resin
- ② NiFe; surface Sn90/Pb10 or gold-plated

Case size	Dimensions in mm (inches)						
	L	W	H	L_2 typ.	$W_2 \pm 0,1$ $\pm(,004)$	H_2 typ.	$p \pm 0,3$ $\pm(,012)$
C (30)	$6,0 \pm 0,3$ (,236 $\pm$,012)	$3,2 \pm 0,3$ (,126 $\pm$,012)	$2,5 \pm 0,3$ (,098 $\pm$,012)	5,8 (,228)	2,2 (,087)	1,5 (,059)	1,3 (,051)
D (40)	$7,3 \pm 0,3$ (,287 $\pm$,012)	$4,3 \pm 0,3$ (,169 $\pm$,012)	$2,8 \pm 0,3$ (,110 $\pm$,012)	7,1 (,280)	2,4 (,094)	1,6 (,062)	1,3 (,051)
E (50)	$7,3 \pm 0,3$ (,287 $\pm$,012)	$4,3 \pm 0,3$ (,169 $\pm$,012)	$4,1 \pm 0,3$ (,157 $\pm$,012)	7,1 (,280)	2,4 (,094)	1,6 (,062)	1,3 (,051)

Marking

Case sizes C, D, E



Capacitance coding

1st and 2nd digit	Capacitance in pF
3rd digit	Multiplier: 4 = 10^4 pF 5 = 10^5 pF 6 = 10^6 pF 7 = 10^7 pF

Date coding

Year	Month	
K = 1998	1 = January	7 = July
L = 1999	2 = February	8 = August
M = 2000	3 = March	9 = September
N = 2001	4 = April	O = October
P = 2002	5 = May	N = November
R = 2003	6 = June	D = December

In addition to the year and month of manufacture, the stamp includes another two figures which internally allow us an assignment to concrete production equipment.

Overview of available types

Series	B45197-A, tinned terminals (Sn90/Pb10) B45198-R, gold-plated terminals													
V _R (Vdc) up to 85 °C	6,3		10		16		20		25		35		50	
C _R (μF) ¹⁾														
3,3											C			
4,7									C		D		D	
6,8							C				D		E	E
10			C		C		C				D		E	E
15			C		C				D		D		E	
22	C		C				D		D	E	E			
33	C		C		C	D	D	E	D	E	E			
47			C	D	C	D	D	E	D	E				
68	D		C	D	C	D	E	D	E					
100	C	D	C	D	E	D	E	E						
150	D	E	D	E	D	E								
220	D	E	D	E	E									
330	D	E	D	E										
470	D	E	E											
680	E													

Upon request

1) Additional ratings upon request

Technical data and ordering codes

V_R up to 85°C (up to 125°C) Vdc	C_R μF	Case size	$\tan \delta_{\max}$ (20°C, 120 Hz)	$I_{k, \max}$ (20°C, V_R , 5 min) μA	$ESR_{\max}^{2)}$ (20°C, 100 kHz) mΩ	I_{ac} (20°C, 100 kHz) A	Ordering code ¹⁾ Tinned terminals (Sn90/Pb10)
6,3 (4)	22	C	0,06	1,4	375	0,54	B45197-A1226-+30*
	33	C	0,06	2,1	350	0,56	B45197-A1336-+30*
	68	D	0,06	4,3	175	0,93	B45197-A1686-+40*
	100	C	0,08	6,3	150	0,86	B45197-A1107-+30*
	100	D	0,08	6,3	125	1,10	B45197-A1107-+40*
	150	D	0,08	9,5	100	1,22	B45197-A1157-+40*
	150	E	0,08	9,5	100	1,28	B45197-A1157-+50*
	220	D	0,08	14	100	1,22	B45197-A1227-+40*
	220	E	0,08	14	100	1,28	B45197-A1227-+50*
	330	D	0,12	21	100	1,22	B45197-A1337-+40*
	330	E	0,08	21	100	1,28	B45197-A1337-+50*
	470	D	0,15	30	150	1,0	B45197-A1477-+40*
	470	E	0,12	30	100	1,28	B45197-A1477-+50*
	680	E	0,15	43	100	1,28	B45197-A1687-+50*
10 (6,3)	10	C	0,06	1,0	400	0,52	B45197-A2106-+30*
	15	C	0,06	1,5	400	0,52	B45197-A2156-+30*
	22	C	0,06	2,2	375	0,54	B45197-A2226-+30*
	33	C	0,06	2,3	375	0,54	B45197-A2336-+30*
	47	C	0,06	4,7	300	0,61	B45197-A2476-+30*
	47	D	0,06	4,7	200	0,87	B45197-A2476-+40*
	68	C	0,06	6,8	250	0,66	B45197-A2686-+30*
	68	D	0,06	6,8	150	1,00	B45197-A2686-+40*
	100	C	0,08	10	250	0,66	B45197-A2107-+30*
	100	D	0,08	10	100	1,22	B45197-A2107-+40*
	100	E	0,08	10	100	1,28	B45197-A2107-+50*
	150	D	0,08	15	100	1,22	B45197-A2157-+40*
	150	E	0,08	15	100	1,28	B45197-A2157-+50*
	220	D	0,10	22	100	1,22	B45197-A2227-+40*
	220	E	0,08	22	100	1,28	B45197-A2227-+50*
	330	D	0,12	33	150	1,0	B45197-A2337-+40*
	330	E	0,10	33	100	1,28	B45197-A2337-+50*
	470	E	0,12	47	100	1,28	B45197-A2477-+50*

Upon request

- 1) Replace 197-A by 198-R for gold-plated terminals
+ Code letter for capacitance tolerance: M = ± 20 %, K = ± 10 % (J = ± 5 % upon request)
* Code number for reel diameter: 9 = 180 mm, 6 = 330 mm
- 2) Other values upon request

Tantalum Chip Capacitors
B45197-A, B45198-R
SpeedPower (Low ESR)
SMD

V_R up to 85°C (up to 125°C) Vdc	C_R μF	Case size	$\tan \delta_{\max}$ (20°C, 120 Hz)	$I_{lk, \max}$ (20°C, V_R , 5 min) μA	$ESR_{\max}^{2)}$ (20°C, 100 kHz) mΩ	I_{ac} (20°C, 100 kHz) A	Ordering code ¹⁾ Tinned terminals (Sn90/Pb10)
16 (10)	10	C	0,06	1,6	450	0,49	B45197-A3106-+30*
	15	C	0,06	2,4	400	0,52	B45197-A3156-+30*
	33	C	0,06	5,3	300	0,61	B45197-A3336-+30*
	33	D	0,06	5,3	200	0,87	B45197-A3336-+40*
	47	C	0,06	7,5	300	0,61	B45197-A3476-+30*
	47	D	0,06	7,5	175	0,93	B45197-A3476-+40*
	68	C	0,06	11	250	0,66	B45197-A3686-+30*
	68	D	0,06	11	150	1,0	B45197-A3686-+40*
	68	E	0,06	11	150	1,05	B45197-A3686-+50*
	100	D	0,08	16	150	1,0	B45197-A3107-+40*
	100	E	0,08	16	100	1,28	B45197-A3107-+50*
	150	D	0,10	24	150	1,0	B45197-A3157-+40*
	150	E	0,08	24	100	1,28	B45197-A3157-+50*
	220	E	0,10	35	100	1,28	B45197-A3227-+50*
20 (13)	6,8	C	0,06	1,4	475	0,48	B45197-A4685-+30*
	10	C	0,06	2,0	450	0,49	B45197-A4106-+30*
	22	D	0,06	4,4	200	0,87	B45197-A4226-+40*
	33	D	0,06	6,6	200	0,87	B45197-A4336-+40*
	33	E	0,06	6,6	200	0,91	B45197-A4336-+50*
	47	D	0,06	9,4	250	0,77	B45197-A4476-+40*
	47	E	0,06	9,4	150	1,05	B45197-A4476-+50*
	68	D	0,06	14	300	0,71	B45197-A4686-+40*
	68	E	0,06	14	200	0,91	B45197-A4686-+50*
	100	E	0,08	20	150	1,05	B45197-A4107-+50*

Upon request

- 1) Replace 197-A by 198-R for gold-plated terminals
+ Code letter for capacitance tolerance: M = $\pm 20\%$, K = $\pm 10\%$ (J = $\pm 5\%$ upon request)
* Code number for reel diameter: 9 = 180 mm, 6 = 330 mm
2) Other values upon request

Tantalum Chip Capacitors
B45197-A, B45198-R
SpeedPower (Low ESR)
SMD

V_R up to 85°C (up to 125°C) Vdc	C_R μF	Case size	$\tan \delta_{\max}$ (20°C, 120 Hz)	$I_{lk, \max}$ (20°C, V_R , 5 min) μA	$ESR_{\max}^{(2)}$ (20°C, 100 kHz) mΩ	I_{ac} (20°C, 100 kHz) A	Ordering code ¹⁾ Tinned terminals (Sn90/Pb10)
25 (16)	4,7	C	0,06	1,2	525	0,46	B45197-A5475-+30*
	15	D	0,06	3,8	230	0,81	B45197-A5156-+40*
	22	D	0,06	5,5	230	0,81	B45197-A5226-+40*
	22	E	0,06	5,5	230	0,85	B45197-A5226-+50*
	33	D	0,06	8,3	230	0,81	B45197-A5336-+40*
	33	E	0,06	8,3	200	0,91	B45197-A5336-+50*
	47	D	0,06	12	250	0,77	B45197-A5476-+40*
	47	E	0,06	12	200	0,91	B45197-A5476-+50*
35 (23)	3,3	C	0,06	1,2	550	0,45	B45197-A6335-+30*
	4,7	D	0,06	1,6	300	0,71	B45197-A6475-+40*
	6,8	D	0,06	2,4	300	0,71	B45197-A6685-+40*
	6,8	E	0,06	2,4	300	0,74	B45197-A6685-+50*
	10	D	0,06	3,5	260	0,76	B45197-A6106-+40*
	10	E	0,06	3,5	260	0,80	B45197-A6106-+50*
	15	D	0,06	5,3	260	0,76	B45197-A6156-+40*
	15	E	0,06	5,3	260	0,80	B45197-A6156-+50*
	22	E	0,06	7,7	260	0,80	B45197-A6226-+50*
	33	E	0,06	12	260	0,80	B45197-A6336-+50*
50 (33)	4,7	D	0,06	2,4	300	0,71	B45197-A7475-+40*
	6,8	E	0,06	3,4	300	0,74	B45197-A7685-+50*
	10	E	0,06	5,0	300	0,74	B45197-A7106-+50*

 Upon request

1) Replace 197-A by 198-R for gold-plated terminals

+ Code letter for capacitance tolerance: M = ± 20 %, K = ± 10 % (J = ± 5 % upon request)

* Code number for reel diameter: 9 = 180 mm, 6 = 330 mm

2) Other values upon request

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