



Construction

- Polar tantalum capacitors with solid electrolyte
- Conventional Ta-MnO₂ technology
- Flame-retardant plastic case (UL 94 V-0)
- Tinned terminals
- Maximum height 2,0 mm



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
(recommended operating voltage see "General Technical Information", page 111, 4.4)
- Low ESR (version R)

Applications

- Telecommunications (e.g. mobile phones, private branch exchanges)
- Data processing (e.g. laptops, main frames)
- Measuring and control engineering (e.g. voltage regulators)
- Automotive electronics
- Medical engineering
- Switch-mode power supplies with very high clock frequencies (300 kHz)
- DC/DC converters

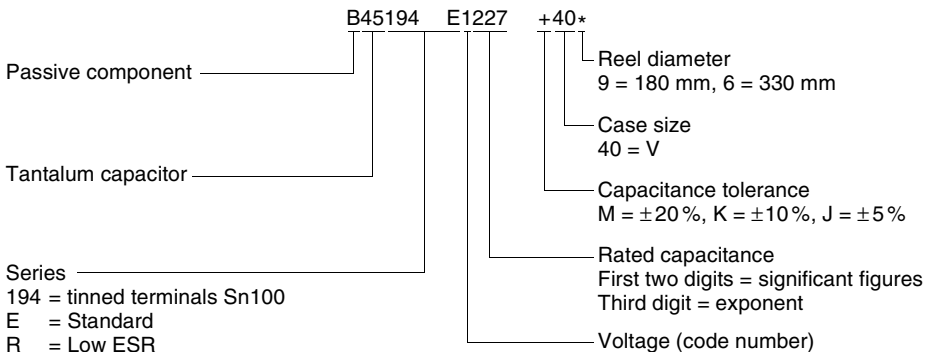
Soldering

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

Delivery mode

Taped and reeled in accordance with IEC 60286-3

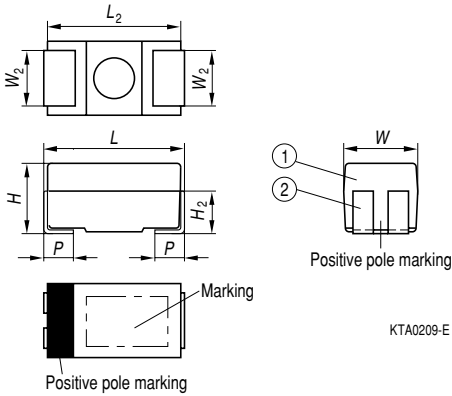
Ordering code structure




Specifications and characteristics in brief

For characteristic curves see "General Technical Information", page 107 ff.

	Standard	Low ESR
Series	B45194E	B45194R
Technology	Ta-MnO ₂	Ta-MnO ₂
Terminals	Tinned	Tinned
Rated voltage V_R (up to 85 °C)	6,3 ... 35 Vdc	6,3 ... 20 Vdc
Rated capacitance C_R	6,8 ... 470 μF	22 ... 470 μF
Capacitance tolerance	$\pm 10\%$, $\pm 20\%$ $\pm 5\%$ (on request)	$\pm 10\%$, $\pm 20\%$ $\pm 5\%$ (on request)
Operating temperature	$-55 \dots +125 \text{ }^\circ\text{C}$	$-55 \dots +125 \text{ }^\circ\text{C}$
Failure rate	At 40 °C; $\leq V_R$, $R_S \geq 3 \text{ } \Omega/\text{V}$ (1 fit = $1 \cdot 10^{-9}$ failures/h)	
$C_R \cdot V_R \leq 330 \text{ } \mu\text{F} \cdot \text{V}$	$\leq 8 \text{ fit}$	$\leq 8 \text{ fit}$
$C_R \cdot V_R > 330 \text{ } \mu\text{F} \cdot \text{V}$	$\leq 24 \text{ fit}$	$\leq 24 \text{ fit}$
Service life	$> 500\,000 \text{ h}$	$> 500\,000 \text{ h}$
Leakage current (V_R , 5 min, 20 °C)	10 nA/ μC	10 nA/ μC
$ESR_{\max}$ (20 °C, 100 kHz)	—	150 ... 400 m Ω
IEC climatic category	To IEC 60068-1 55/125/56 ($-55/+125 \text{ }^\circ\text{C}$; 56 days damp heat test)	

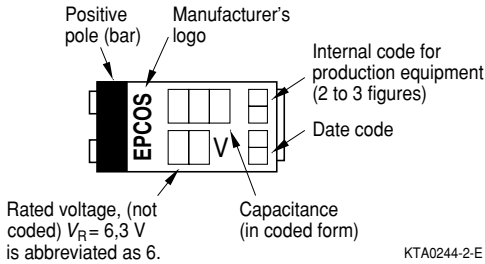
Dimensional drawing


- ① Encapsulation: molded epoxy resin
- ② NiFe; tinned surface Sn100

Case size	Dimensions in mm (inches)						
	L	W	H	L_2 typ.	$W_2 \pm 0,1$ $\pm(,004)$	H_2 typ.	$p \pm 0,3$ $\pm(,012)$
V (40)	$7,3 \pm 0,3$ (,287 $\pm$,012)	$4,3 \pm 0,3$ (,169 $\pm$,012)	2,0 max (,079 max)	7,1 (,280)	2,4 (,094)	1,1 (,043)	1,3 (,051)

Marking

Case size V



Capacitance coding

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

Date coding

Year	Month	
M = 2000	1 = January	7 = July
N = 2001	2 = February	8 = August
P = 2002	3 = March	9 = September
R = 2003	4 = April	O = October
S = 2004	5 = May	N = November
T = 2005	6 = June	D = December

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

Tantalum Chip Capacitors	B45194
Low Profile; $H_{\max} = 2 \text{ mm}$; Standard and Low ESR	



Overview of available types

	Standard						Low ESR			
Series	B45194E						B45194R			
V_R (Vdc) up to 85 °C	6,3	10	16	20	25	35	6,3	10	16	20
C_R (μF)										
6,8						V				
10						V				
15					V					
22				V	V					V
33				V					V	V
47	V	V	V					V	V	
68	V	V	V					V	V	
100	V	V	V				V	V	V	
150	V	V					V	V		
220	V	V					V	V		
330	V	V					V	V		
470	V						V			

 Upon request

Tantalum Chip Capacitors
B45194
Low Profile; $H_{\max} = 2 \text{ mm}$; Standard and Low ESR

Technical data and ordering codes for B45194E

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	$Z_{\max}$ (20°C, 100 kHz) Ω	Ordering code ¹⁾
6,3 (4,0)	47	V	0,06	3,0	0,7	B45194E1476+40*
	68	V	0,06	4,3	0,7	B45194E1686+40*
	100	V	0,08	6,3	0,7	B45194E1107+40*
	150	V	0,08	9,5	0,7	B45194E1157+40*
	220	V	0,08	14	0,7	B45194E1227+40*
	330	V	0,08	21	0,7	B45194E1337+40*
	470	V	0,15	30	0,7	B45194E1477+40*
10 (6,3)	47	V	0,06	4,7	0,7	B45194E2476+40*
	68	V	0,06	6,8	0,7	B45194E2686+40*
	100	V	0,08	10	0,7	B45194E2107+40*
	150	V	0,08	15	0,7	B45194E2157+40*
	220	V	0,08	22	0,7	B45194E2227+40*
	330	V	0,12	33	0,7	B45194E2337+40*
16 (10)	47	V	0,06	7,5	0,7	B45194E3476+40*
	68	V	0,06	11	0,8	B45194E3686+40*
	100	V	0,08	16	0,8	B45194E3107+40*
20 (13)	22	V	0,06	4,4	0,8	B45194E4226+40*
	33	V	0,06	6,6	0,8	B45194E4336+40*
25 (16)	15	V	0,06	3,8	1,0	B45194E5156+40*
	22	V	0,06	5,5	0,8	B45194E5226+40*
35 (23)	6,8	V	0,06	2,4	1,2	B45194E6685+40*
	10	V	0,06	3,5	1,0	B45194E6106+40*

 Upon request

1) + Code letter for required capacitance tolerance: M = $\pm 20\%$, K = $\pm 10\%$ (J = $\pm 5\%$ upon request)

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

Tantalum Chip Capacitors
B45194
Low Profile; $H_{\max} = 2 \text{ mm}$; Standard and Low ESR

Technical data and ordering codes for B45194R

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	$ESR_{\max}^{1)}$ (20°C, 100 kHz) $\text{m}\Omega$	I_{ac} (20°C, 100 kHz) A	Ordering code ²⁾
6,3 (4,0)	100	V	0,08	6,3	150	0,91	B45194R1107+40*
	150	V	0,08	9,5	150	0,91	B45194R1157+40*
	220	V	0,08	14	150	0,91	B45194R1227+40*
	330	V	0,08	21	150	0,91	B45194R1337+40*
	470	V	0,15	30	150	0,91	B45194R1477+40*
10 (6,3)	47	V	0,06	4,7	200	0,79	B45194R2476+40*
	68	V	0,06	6,8	200	0,79	B45194R2686+40*
	100	V	0,08	10	200	0,79	B45194R2107+40*
	150	V	0,08	15	200	0,79	B45194R2157+40*
	220	V	0,08	22	200	0,79	B45194R2227+40*
	330	V	0,12	33	200	0,79	B45194R2337+40*
16 (10)	33	V	0,06	5,3	250	0,71	B45194R3336+40*
	47	V	0,06	7,5	250	0,71	B45194R3476+40*
	68	V	0,06	11	250	0,71	B45194R3686+40*
	100	V	0,08	16	250	0,71	B45194R3107+40*
20 (13)	22	V	0,06	4,4	400	0,56	B45194R4226+40*
	33	V	0,06	6,6	400	0,56	B45194R4336+40*

Upon request

1) Other values upon request

2) + Code letter for required capacitance tolerance: M = $\pm 20\%$, K = $\pm 10\%$ (J = $\pm 5\%$ upon request)

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

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Published by EPCOS AG**Corporate Communications, P.O. Box 80 17 09, 81617 Munich, GERMANY****☎ ++49 89 636 09, FAX (0 89) 636-2 26 89**

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