



**Tantalum Chip Capacitors**

**B45192**

**Low Profile;  $H_{max} = 1,5$  mm; Standard and Low ESR**



**Construction**

- Polar tantalum capacitors with solid electrolyte
- Conventional Ta-MnO<sub>2</sub> technology
- Flame-retardant plastic case (UL 94 V-0)
- Tinned terminals
- Maximum height 1,5 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

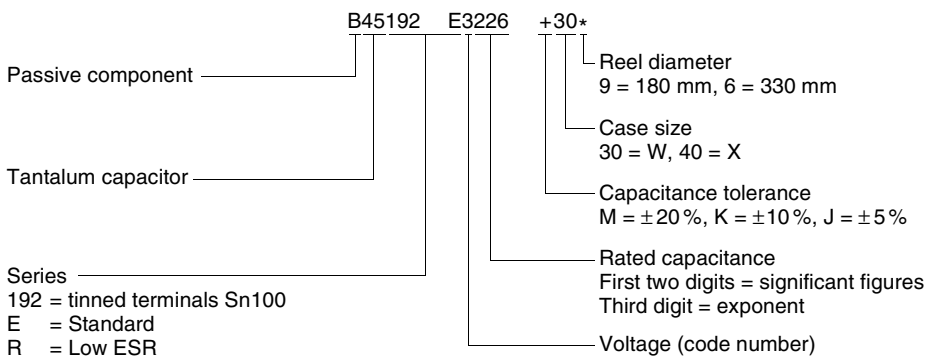
**Soldering**

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**




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**Specifications and characteristics in brief**

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

	Standard	Low ESR
Series	B45192E	B45192R
Technology	Ta-MnO <sub>2</sub>	Ta-MnO <sub>2</sub>
Terminals	Tinned	Tinned
Rated voltage $V_R$ (up to 85 °C)	4 ... 16 Vdc	4 ... 16 Vdc
Rated capacitance $C_R$	22 ... 220 $\mu\text{F}$	22 ... 220 $\mu\text{F}$
Capacitance tolerance	$\pm 10\%$ , $\pm 20\%$ $\pm 5\%$ (on request)	$\pm 10\%$ , $\pm 20\%$ $\pm 5\%$ (on request)
Operating temperature	-55 ... +125 °C	-55 ... +125 °C
Failure rate	At 40 °C; $\leq V_R$ , $R_S \geq 3 \Omega/\text{V}$ (1 fit = $1 \cdot 10^{-9}$ failures/h)	
$C_R \cdot V_R > 330 \mu\text{F} \cdot \text{V}$	$\leq 24$ fit	$\leq 24$ fit
Service life	> 500 000 h	> 500 000 h
Leakage current ( $V_R$ , 5 min, 20 °C)	10 nA/ $\mu\text{C}$	10 nA/ $\mu\text{C}$
$ESR_{\max}$ (20 °C, 100 kHz)	—	200 ... 500 m $\Omega$
IEC climatic category	To IEC 60068-1 55/125/56 (-55/+125 °C; 56 days damp heat test)	



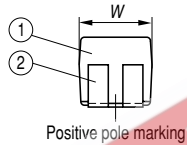
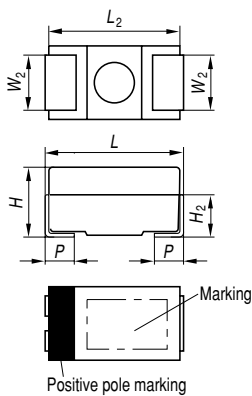
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Dimensional drawing



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

KTA0209-E

Case size	Dimensions in mm (inches)						
	L	W	H	$L_2$ typ.	$W_2 \pm 0,1$ $\pm(.004)$	$H_2$ typ.	$p \pm 0,3$ $\pm(.012)$
W (30)	$6,0 \pm 0,3$ (,236 $\pm$ ,012)	$3,2 \pm 0,3$ (,126 $\pm$ ,012)	$1,5 \text{ max}$ (,059 mm)	5,8 (,228)	$2,2$ (,087)	1,1 (,043)	1,3 (,051)
X (40)	$7,3 \pm 0,3$ (,287 $\pm$ ,012)	$4,3 \pm 0,3$ (,169 $\pm$ ,012)	$1,5 \text{ max}$ (,059 mm)	7,1 (,280)	$2,4$ (,094)	1,1 (,043)	1,3 (,051)



**Tantalum Chip Capacitors**

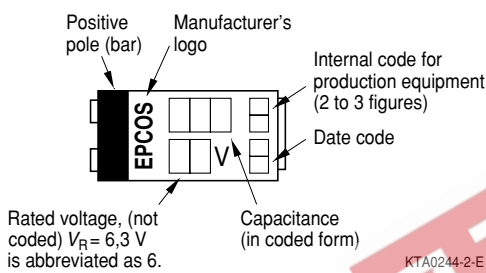
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**Marking**

Case sizes X, W



**Capacitance coding**

1st and 2nd digit	Capacitance in pF
3rd digit	Multiplier: 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.



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Overview of available types

	Standard				Low ESR			
Series	B45192E				B45192R			
$V_R$ (Vdc) up to 85 °C	4	6,3	10	16	4	6,3	10	16
$C_R$ ( $\mu\text{F}$ )								
22				W				W
33				W				W
47			W				W	
68		W	W	X		W	W	X
100	W	W	X		W	W	X	
150	W	X			W	X		
220		X				X		

Technical data and ordering codes for B45192E

$V_R$ up to 85 °C (up to 125 °C) Vdc	$C_R$ $\mu\text{F}$	Case size	$\tan \delta_{max}$ (20 °C, 120 Hz)	$I_{lk, max}$ (20 °C, $V_R$ , 5 min) $\mu\text{A}$	$Z_{max}$ (20 °C, 100 kHz) $\Omega$	Ordering code <sup>1)</sup>
4 (2,5)	100	W	0,08	4,0	1,4	B45192E0107+30*
	150	W	0,08	6,0	1,3	B45192E0157+30*
6,3 (4,0)	68	W	0,06	4,3	1,4	B45192E1686+30*
	100	W	0,08	6,3	1,2	B45192E1107+30*
	150	X	0,08	9,5	0,8	B45192E1157+40*
	220	X	0,08	14	0,8	B45192E1227+40*
10 (6,3)	47	W	0,06	4,7	1,4	B45192E2476+30*
	68	W	0,06	6,8	1,2	B45192E2686+30*
	68	X	0,06	6,8	1,2	B45192E2686+40*
	100	X	0,08	10	0,8	B45192E2107+40*
16 (10)	22	W	0,06	3,5	1,5	B45192E3226+30*
	33	W	0,06	5,3	1,4	B45192E3336+30*

Upon request

1) + 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



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Technical data and ordering codes for B45192R

$V_R$ up to 85°C (up to 125°C) Vdc	$C_R$  $\mu\text{F}$	Case size	$\tan \delta_{max}$ (20°C, 120 Hz)	$I_{lk, max}$ (20°C, $V_R$ , 5 min) $\mu\text{A}$	$ESR_{max}^{1)}$ (20°C, 100 kHz) m $\Omega$	$I_{ac}$ (20°C, 100 kHz) A	Ordering code <sup>2)</sup>
4 (2,5)	100	W	0,08	4,0	350	0,51	B45192R0107+30*
	150	W	0,08	6,0	350	0,51	B45192R0157+30*
6,3 (4,0)	68	W	0,06	4,3	400	0,47	B45192R1686+30*
	100	W	0,08	6,3	350	0,51	B45192R1107+30*
	150	X	0,08	9,5	250	0,66	B45192R1157+40*
	220	X	0,08	14	250	0,66	B45192R1227+40*
10 (6,3)	47	W	0,06	4,7	400	0,47	B45192R2476+30*
	68	W	0,06	6,8	300	0,55	B45192R2686+30*
	68	X	0,06	6,8	200	0,74	B45192R2686+40*
	100	X	0,08	10	200	0,74	B45192R2107+40*
16 (10)	22	W	0,06	3,5	500	0,42	B45192R3226+30*
	33	W	0,06	5,3	400	0,47	B45192R3336+30*

Upon request

1) Other values upon request

2) + 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

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