



Tantalum Chip Capacitors

B45192

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



Construction

- Polar tantalum capacitors with solid electrolyte
- Conventional Ta-MnO₂ 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

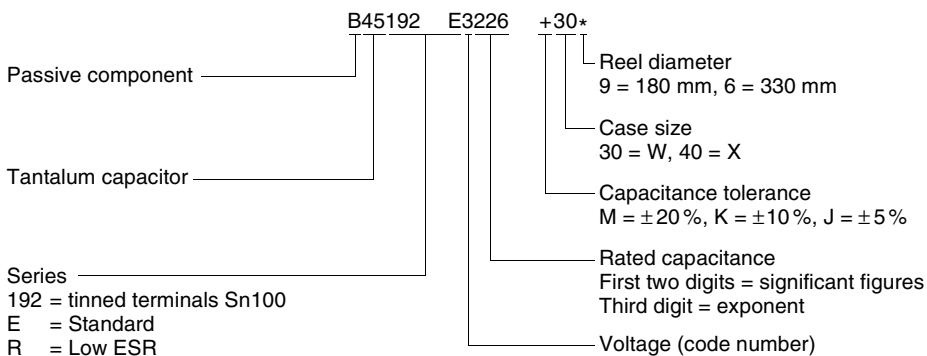
Soldering

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 ₂	Ta-MnO ₂
Terminals	Tinned	Tinned
Rated voltage V_R (up to 85 °C)	4 ... 16 Vdc	4 ... 16 Vdc
Rated capacitance C_R	22 ... 220 μF	22 ... 220 μF
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; $\leq V_R$, $R_S \geq 3 \Omega/V$ (1 fit = $1 \cdot 10^{-9}$ failures/h)	
$C_R \cdot V_R > 330 \mu\text{F} \cdot \text{V}$	≤ 24 fit	≤ 24 fit
Service life	> 500 000 h	> 500 000 h
Leakage current (V_R , 5 min, 20 °C)	10 nA/ μC	10 nA/ μC
ESR_{\max} (20 °C, 100 kHz)	—	200 ... 500 m Ω
IEC climatic category	To IEC 60068-1 55/125/56 (-55/+125 °C; 56 days damp heat test)	



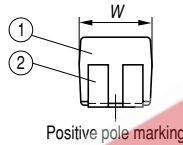
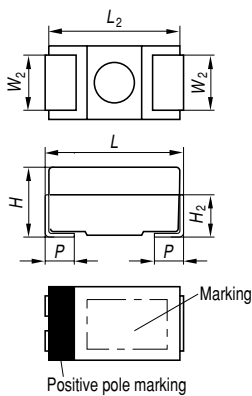
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Dimensional drawing



Positive pole marking

- 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 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 max (,059 mm)	7,1 (,280)	2,4 (,094)	1,1 (,043)	1,3 (,051)



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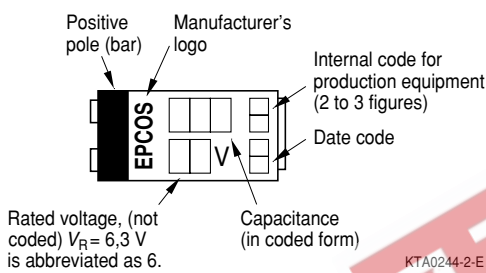
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Marking

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 (μF)								
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 μF	Case size	$\tan \delta_{max}$ (20 °C, 120 Hz)	$I_{lk, max}$ (20 °C, V_R , 5 min) μA	Z_{max} (20 °C, 100 kHz) Ω	Ordering code ¹⁾
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 = ± 20 %, K = ± 10 % (J = ± 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 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⁾
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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