EPCOS

Tantalum Chip Capacitors **B45192**

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

SMD

Construction

- Polar tantalum capacitors with solid electrolyte
- Conventional Ta-MnO_2 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

B45192 E3226 +30*

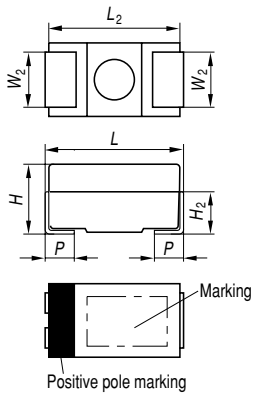
- Passive component
- Tantalum capacitor
- Series
  192 = tinned terminals Sn100
  E = Standard
  R = Low ESR
- Voltage (code number)
- Rated capacitance
  First two digits = significant figures
  Third digit = exponent
- Capacitance tolerance
  M = ±20 %, K = ±10 %, J = ±5 %
- Case size
  30 = W, 40 = X
- Reel diameter
  9 = 180 mm, 6 = 330 mm

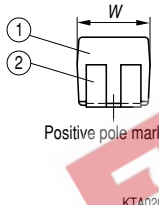
Specifications and characteristics in brief

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	±10%, ±20% ±5% (on request)	±10%, ±20% ±5% (on request)
Operating temperature	−55 … +125 °C	−55 … +125 °C
Failure rate	At 40 °C; ≤ V_R, R_S ≥ 3 Ω/V (1 fit = 1 · 10^{-9} failures/h)	
$C_R \cdot V_R > 330$ µF · 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 mΩ
IEC climatic category	To IEC 60068-1 55/125/56 (−55/+125 °C; 56 days damp heat test)	

Dimensional drawing



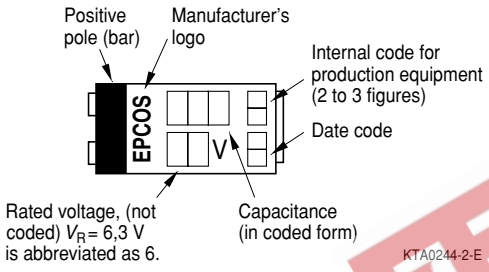


① Encapsulation: molded epoxy resin
② NiFe; tinned surface Sn100

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

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.

EPCOS

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

SMD

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 δ_{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	100	W	0,08	4,0	1,4	B45192E0107+30*
(2,5)	150	W	0,08	6,0	1,3	B45192E0157+30*
6,3	68	W	0,06	4,3	1,4	B45192E1686+30*
(4,0)	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	47	W	0,06	4,7	1,4	B45192E2476+30*
(6,3)	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	22	W	0,06	3,5	1,5	B45192E3226+30*
(10)	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

Technical data and ordering codes for B45192R

V_R up to 85 °C (up to 125 °C) Vdc	C_R µF	Case size	tan δ_{max} (20 °C, 120 Hz)	$I_{lk,\ max}$ (20 °C, V_R, 5 min) µA	ESR_{max} [1] (20 °C, 100 kHz) mΩ	I_{ac} (20 °C, 100 kHz) A	Ordering code [2]
4	100	W	0,08	4,0	350	0,51	B45192R0107+30*
(2,5)	150	W	0,08	6,0	350	0,51	B45192R0157+30*
6,3	68	W	0,06	4,3	400	0,47	B45192R1686+30*
(4,0)	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	47	W	0,06	4,7	400	0,47	B45192R2476+30*
(6,3)	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	22	W	0,06	3,5	500	0,42	B45192R3226+30*
(10)	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 = ± 20 %, K = ± 10 % (J = ± 5 % upon request)
* Code number for reel diameter: 9 = 180 mm, 6 = 330 mm

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