



B45294.fm Seite 75 Montag, 9. Februar 2004 9:36 09



**Tantalum Chip Capacitors**

**B45294**

**Polymer; Low Profile;  $H_{max} = 2,0$  mm; Ultra-Low ESR**

**SMD**

**New series**

**Construction**

- Polar tantalum capacitors with solid electrolyte
- Tantalum polymer technology (cathode consists of a solid conductive polymer)
- Flame-retardant plastic case (UL 94 V-0)
- Tinned terminals
- Maximum height 2,0 mm



**Features**

- High volumetric efficiency
- Ultra-low ESR
- Excellent solderability
- Stable temperature and frequency characteristics
- High ESR stability during temperature rise
- High permissible ripple current
- Only low derating necessary
- Low self-inductance
- High resistance to shock and vibration
- No failure-mode ignition in high-surge current applications
- Suitable for use without series resistor (recommended operating voltage  $0,8 \cdot V_R$ )
- Operating temperature  $-55 \dots +105$  °C

**Applications**

- Telecommunications (e.g. mobile phones, private branch exchanges, PDA)
- Data processing (e.g. laptops, main frames)
- Measuring and control engineering
- Automotive electronics (e.g. navigation systems, convenience 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

75 02/04





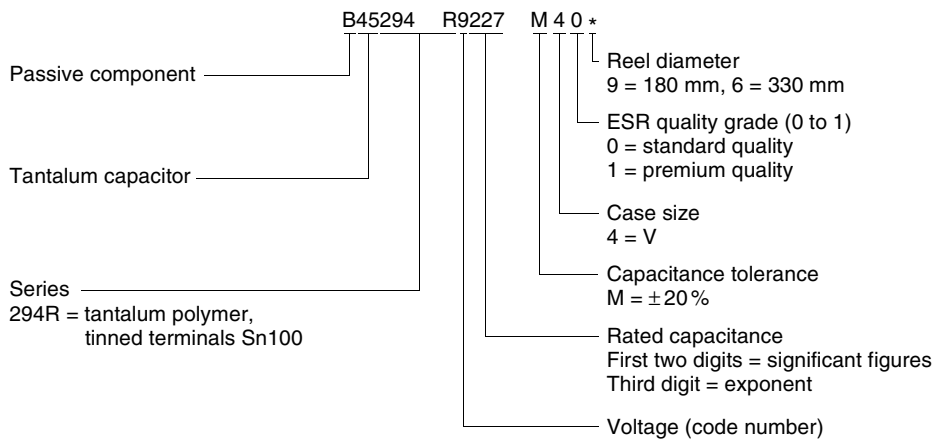
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**Ordering code structure**



**Specifications and characteristics in brief**

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

	Ultra-Low ESR
Series	B45294R
Technology	Ta-Poly
Terminals	Tinned
Rated voltage $V_R$ (up to 85 °C)	2,5 ... 10 Vdc
Rated capacitance $C_R$	100 ... 330 $\mu$ F
Capacitance tolerance	$\pm 20\%$
Operating temperature	-55 ... +105 °C
Failure rate	Specification in preparation
Service life	> 500 000 h
Leakage current ( $V_R$ , 5 min, 20 °C)	100 nA/ $\mu$ C
$ESR_{max}$ (20 °C, 100 kHz)	25 ... 80 m $\Omega$
IEC climatic category	To IEC 60068-1 55/105/56 (-55/+105 °C; 56 days damp heat test)



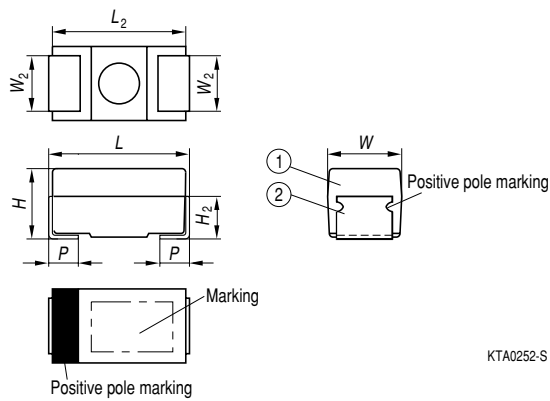
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**Dimensional drawing**



Parts are nearly black, letters are gray.

Case size	Dimensions in mm (inches)						
	<i>L</i>	<i>W</i>	<i>H</i>	<i>L</i> <sub>2</sub> typ.	<i>W</i> <sub>2</sub> ± 0,1 ±(,004)	<i>H</i> <sub>2</sub> typ.	<i>p</i> ± 0,3 ±(,012)
V (4)	7,3 ± 0,3 (,287±,012)	4,3 ± 0,3 (,169±,012)	1,9 ± 0,1 (,079 max)	7,1 (,280)	2,4 (,094)	1,1 (,043)	1,3 (,051)



**Tantalum Chip Capacitors**

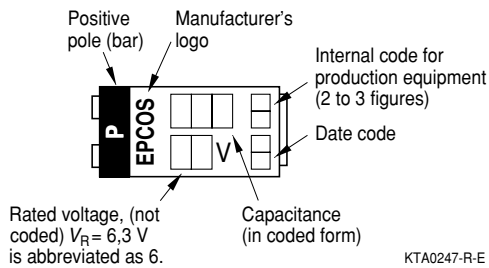
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**Marking**

Case size V



Parts are nearly black, letters are gray.

**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**

Series	B45294R, tinned terminals Sn90/Pb10 or Sn100			
$V_R$ (Vdc) up to 85 °C	2,5	4	6,3	10
$C_R$ (μF)				
100			V	V
150			V	
220	V	V	V	
330	V	V	V	

**Technical data and ordering codes**

$V_R$ up to 85°C (up to 105°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) mΩ	$I_{ac}$ (20°C, 100 kHz) A	Ordering code <sup>2)</sup>
2,5 (2,0)	220	V	0,1	55	45	1,7	B45294R9227M40*
	220	V	0,1	55	35	1,9	B45294R9227M41*
	330	V	0,1	83	40	1,8	B45294R9337M41*
4 (3,2)	220	V	0,1	88	45	1,7	B45294R0227M40*
	220	V	0,1	88	35	1,9	B45294R0227M41*
	220	V	0,1	88	25	2,2	B45294R0227M42*
	330	V	0,1	132	45	1,7	B45294R0337M40*
	330	V	0,1	132	40	1,8	B45294R0337M41*
6,3 (5,0)	100	V	0,1	63	45	1,7	B45294R1107M40*
	100	V	0,1	63	25	2,2	B45294R1107M42*
	150	V	0,1	95	45	1,7	B45294R1157M40*
	150	V	0,1	95	35	1,9	B45294R1157M41*
	150	V	0,1	95	25	2,2	B45294R1157M42*
	220	V	0,1	139	45	1,7	B45294R1227M40*
	220	V	0,1	139	25	2,2	B45294R1227M42*
330	V	0,1	208	45	1,7	B45294R1337M40*	
10 (8,0)	100	V	0,1	100	80	1,3	B45294R2107M40*
	100	V	0,1	100	55	1,5	B45294R2107M41*

Under development

Capacitance tolerance: M = ±20%

1) Other values upon request

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