

**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  $-55 \dots +105 \text{ }^{\circ}\text{C}$

**Applications**

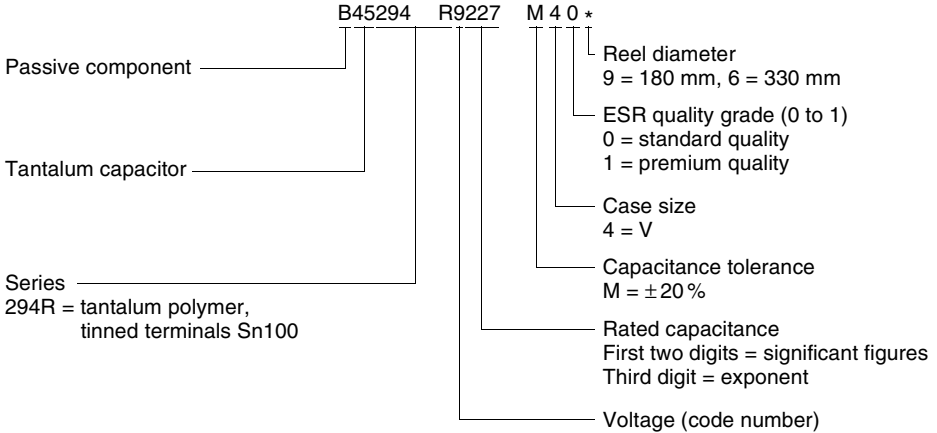
- Telecommunications (e.g. mobile phones, private branch exchanges, PDA)
- Data processing (e.g. laptops, main frames)
- Measuring and control engineering
- Automotive electronics (e.g. navigation systems, convenience electronics)
- Medical engineering
- Switch-mode power supplies with very high clock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

**Soldering**

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

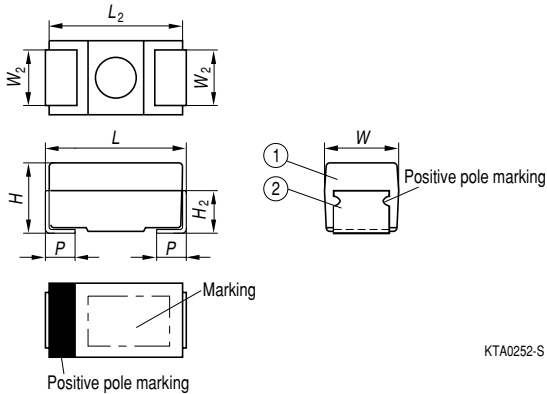
**Delivery mode**

Taped and reeled in accordance with IEC 60286-3


**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 $\mu\text{F}$                                         |
| Capacitance tolerance                      | $\pm 20\%$                                                        |
| Operating temperature                      | -55 ... +105 °C                                                   |
| Failure rate                               | Specification in preparation                                      |
| Service life                               | > 500 000 h                                                       |
| Leakage current<br>( $V_R$ , 5 min, 20 °C) | 100 nA/ $\mu\text{C}$                                             |
| $ESR_{\max}$ (20 °C, 100 kHz)              | 25 ... 80 m $\Omega$                                              |
| IEC climatic category                      | To IEC 60068-1<br>55/105/56 (-55/+105 °C; 56 days damp heat test) |

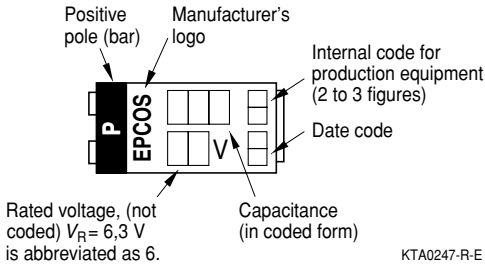
**Dimensional drawing**


Parts are nearly black, letters are gray.

| Case size | Dimensions in mm (inches)          |                                    |                             |               |                              |               |                            |
|-----------|------------------------------------|------------------------------------|-----------------------------|---------------|------------------------------|---------------|----------------------------|
|           | $L$                                | $W$                                | $H$                         | $L_2$ typ.    | $W_2 \pm 0,1$<br>$\pm(,004)$ | $H_2$ typ.    | $p \pm 0,3$<br>$\pm(,012)$ |
| V (4)     | $7,3 \pm 0,3$<br>(,287 $\pm$ ,012) | $4,3 \pm 0,3$<br>(,169 $\pm$ ,012) | $1,9 \pm 0,1$<br>(,079 max) | 7,1<br>(,280) | 2,4<br>(,094)                | 1,1<br>(,043) | 1,3<br>(,051)              |

## Marking

### Case size V



Parts are nearly black, letters are gray.

### Capacitance coding

| 1st and 2nd digit | Capacitance in pF                                          |
|-------------------|------------------------------------------------------------|
| 3rd digit         | Multiplier: $6 = 10^6 \text{ pF}$<br>$7 = 10^7 \text{ pF}$ |

### 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.

### 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

| $V_R$<br>up to 85 °C<br>(up to 105 °C) | $C_R$ | Case<br>size | $\tan \delta_{\max}$<br>(20 °C,<br>120 Hz) | $I_{lk, \max}$<br>(20 °C, $V_R$ ,<br>5 min) | $ESR_{\max}^{1)}$<br>(20 °C,<br>100 kHz) | $I_{ac}$<br>(20 °C,<br>100 kHz) | Ordering code <sup>2)</sup> |
|----------------------------------------|-------|--------------|--------------------------------------------|---------------------------------------------|------------------------------------------|---------------------------------|-----------------------------|
| Vdc                                    | μF    |              |                                            | μA                                          | mΩ                                       | A                               |                             |
| 2,5<br>(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<br>(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<br>(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<br>(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 =  $\pm 20\%$

1) Other values upon request

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