

Leaded Varistors

EnergetiQ Series

Construction

- Square varistor element, leaded
- Coating: epoxy resin, flame-retardant to UL 94 V-0
- Terminals: tinned copper wire

Features

- High-EnergetiQ series Q14/Q20
- Maximum load capacity at minimum component height
- PSpice models

Approvals

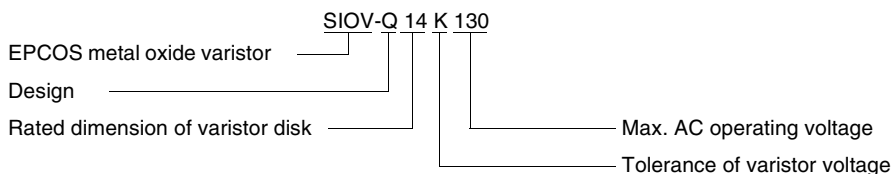
- UL, CSA
- CECC

Taping

- For ordering information see page 206 ff, chapter “Leaded Varistors: Taping”

Type designation

Detailed description of coding system on page 39, chapter “General Technical Information”



General technical data

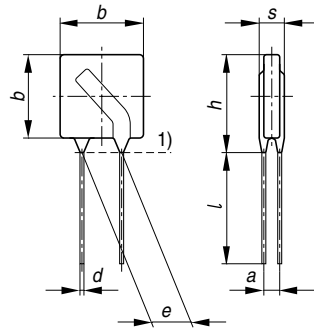
| | | |
|---|-------------------------|----------------------------------|
| Climatic category | 40/85/56 | in accordance with IEC 60068-1 |
| LCT | - 40 °C | |
| UCT | + 85 °C | |
| Damp heat, steady state (93 % r.h., 40 °C) | 56 days | in accordance with IEC 60068-2-3 |
| Operating temperature | - 40 ... + 85 °C | in accordance with CECC 42 000 |
| Storage temperature | - 40 ... + 125 °C | |
| Electric strength | ≥ 2,5 kV _{RMS} | in accordance with CECC 42 000 |
| Insulation resistance | ≥ 10 MΩ | in accordance with CECC 42 000 |
| Response time | < 25 ns | |


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Maximum ratings ($T_A = 85\text{ °C}$)

| Type (untaped) SIOV- | Ordering code | V_{RMS} V | V_{DC} V | i_{max} 8/20 μ s A | W_{max} (2 ms) J | P_{max} W |
|----------------------------|-----------------|----------------|---------------|--------------------------------|--------------------------|----------------|
| Q14K130 | B72214Q0131K101 | 130 | 170 | 8000 | 75 | 0,80 |
| Q14K140 | B72214Q0141K101 | 140 | 180 | 8000 | 80 | 0,80 |
| Q14K150 | B72214Q0151K101 | 150 | 200 | 8000 | 85 | 0,80 |
| Q14K175 | B72214Q0171K101 | 175 | 225 | 8000 | 100 | 0,80 |
| Q14K210 | B72214Q0211K101 | 210 | 270 | 8000 | 115 | 0,80 |
| Q14K230 | B72214Q0231K101 | 230 | 300 | 8000 | 130 | 0,80 |
| Q14K250 | B72214Q0251K101 | 250 | 320 | 8000 | 140 | 0,80 |
| Q14K275 | B72214Q0271K101 | 275 | 350 | 8000 | 150 | 0,80 |
| Q14K300 | B72214Q0301K101 | 300 | 385 | 8000 | 175 | 0,80 |
| Q14K320 | B72214Q0321K101 | 320 | 420 | 8000 | 185 | 0,80 |
| Q20K130 | B72220Q0131K101 | 130 | 170 | 15000 | 100 | 1,20 |
| Q20K140 | B72220Q0141K101 | 140 | 180 | 15000 | 110 | 1,20 |
| Q20K150 | B72220Q0151K101 | 150 | 200 | 15000 | 120 | 1,20 |
| Q20K175 | B72220Q0171K101 | 175 | 225 | 15000 | 135 | 1,20 |
| Q20K210 | B72220Q0211K101 | 210 | 270 | 15000 | 165 | 1,20 |
| Q20K230 | B72220Q0231K101 | 230 | 300 | 15000 | 180 | 1,20 |
| Q20K250 | B72220Q0251K101 | 250 | 320 | 15000 | 195 | 1,20 |
| Q20K275 | B72220Q0271K101 | 275 | 350 | 15000 | 215 | 1,20 |
| Q20K300 | B72220Q0301K101 | 300 | 385 | 15000 | 235 | 1,20 |
| Q20K320 | B72220Q0321K101 | 320 | 420 | 15000 | 255 | 1,20 |


Characteristics ($T_A = 25\text{ °C}$)

| Type (untaped) SIOV- | V_V (1 mA) V | ΔV_V (1 mA) % | Max. clamping voltage | | C_{typ} (1 kHz) pF | Derating curve Page | V/I char- acteristic Page |
|----------------------------|----------------------|-----------------------------|-----------------------|----------|----------------------------|---------------------------|---------------------------------|
| | | | v V | i A | | | |
| Q14K130 | 205 | ± 10 | 340 | 65 | 980 | 258 | 279 |
| Q14K140 | 220 | ± 10 | 360 | 65 | 900 | 258 | 279 |
| Q14K150 | 240 | ± 10 | 395 | 65 | 830 | 258 | 279 |
| Q14K175 | 270 | ± 10 | 455 | 65 | 750 | 258 | 279 |
| Q14K210 | 330 | ± 10 | 550 | 65 | 600 | 258 | 279 |
| Q14K230 | 360 | ± 10 | 595 | 65 | 550 | 258 | 279 |
| Q14K250 | 390 | ± 10 | 650 | 65 | 500 | 258 | 279 |
| Q14K275 | 430 | ± 10 | 710 | 65 | 470 | 258 | 279 |
| Q14K300 | 470 | ± 10 | 775 | 65 | 430 | 258 | 279 |
| Q14K320 | 510 | ± 10 | 840 | 65 | 390 | 258 | 279 |
| Q20K130 | 205 | ± 10 | 340 | 130 | 1950 | 258 | 279 |
| Q20K140 | 220 | ± 10 | 360 | 130 | 1800 | 258 | 279 |
| Q20K150 | 240 | ± 10 | 395 | 130 | 1650 | 258 | 279 |
| Q20K175 | 270 | ± 10 | 455 | 130 | 1500 | 258 | 279 |
| Q20K210 | 330 | ± 10 | 550 | 130 | 1200 | 258 | 279 |
| Q20K230 | 360 | ± 10 | 595 | 130 | 1100 | 258 | 279 |
| Q20K250 | 390 | ± 10 | 650 | 130 | 1000 | 258 | 279 |
| Q20K275 | 430 | ± 10 | 710 | 130 | 930 | 258 | 279 |
| Q20K300 | 470 | ± 10 | 775 | 130 | 850 | 258 | 279 |
| Q20K320 | 510 | ± 10 | 840 | 130 | 780 | 258 | 279 |


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1) Seating plane in accordance with IEC 60717

VAR0393-T

Dimensions

| Type | $e \pm 1$ mm | $a \pm 1$ mm | b_{\max} mm | s_{\max} mm | h_{\max} mm | l_{\min} mm | $d \pm 0,05$ mm |
|--------------|-----------------|-----------------|------------------|------------------|------------------|------------------|--------------------|
| SIOV-Q14K130 | 10,0 | 1,9 | 16,5 | 5,0 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K140 | 10,0 | 2,0 | 16,5 | 5,1 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K150 | 10,0 | 2,1 | 16,5 | 5,2 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K175 | 10,0 | 2,2 | 16,5 | 5,3 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K210 | 10,0 | 2,2 | 16,5 | 5,4 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K230 | 10,0 | 2,3 | 16,5 | 5,5 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K250 | 10,0 | 2,4 | 16,5 | 5,7 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K275 | 10,0 | 2,6 | 16,5 | 5,8 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K300 | 10,0 | 2,8 | 16,5 | 6,1 | 19,5 | 30,0 | 1,0 |
| SIOV-Q14K320 | 10,0 | 2,9 | 16,5 | 6,3 | 19,5 | 30,0 | 1,0 |
| SIOV-Q20K130 | 10,0 | 1,9 | 22,5 | 5,0 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K140 | 10,0 | 2,0 | 22,5 | 5,1 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K150 | 10,0 | 2,1 | 22,5 | 5,2 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K175 | 10,0 | 2,2 | 22,5 | 5,3 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K210 | 10,0 | 2,2 | 22,5 | 5,4 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K230 | 10,0 | 2,3 | 22,5 | 5,5 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K250 | 10,0 | 2,4 | 22,5 | 5,7 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K275 | 10,0 | 2,6 | 22,5 | 5,8 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K300 | 10,0 | 2,8 | 22,5 | 6,1 | 27,0 | 30,0 | 1,0 |
| SIOV-Q20K320 | 10,0 | 2,9 | 22,5 | 6,3 | 27,0 | 30,0 | 1,0 |

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