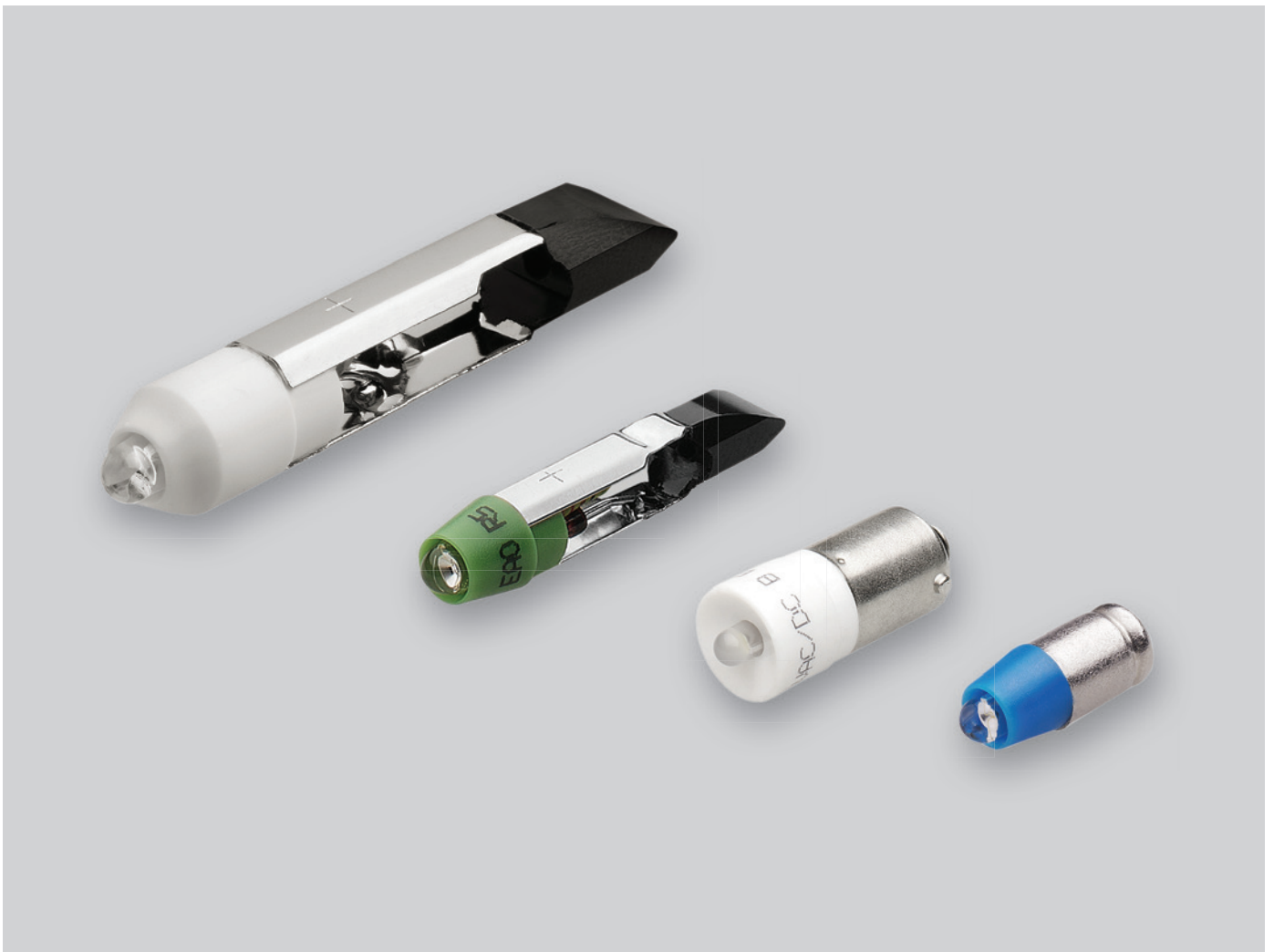


# Series 10

**Characteristics**

The Series 10 are LEDs for use with all EAO's illuminated switches (as accessories).

The following pages show a representative selection of LEDs.





## Overview

### Illumination

|                    |    |
|--------------------|----|
| LED T1 3/4 MG      | 4  |
| Single-LED T5.5    | 6  |
| Single-LED T6.8    | 8  |
| LED BA9s           | 10 |
| LED BA9s Fail Safe | 12 |

### Accessories 14

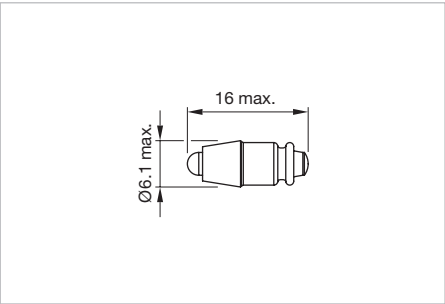
### Technical data 16

### Application guidelines 17

### Index 18

# 10 Illumination

(Sd=BR10\_AGAU\_Single-LED\_T1\_3/4\_MG)  
**LED T1 3/4 MG**



Product can differ from the current configuration.

Dimensions [mm]

### Additional Information

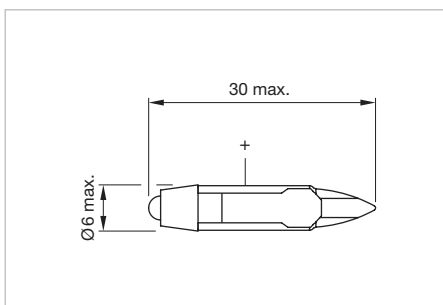
- A suitable lamp remover Part No. 61-9740.0 (Series Swisstac Part No. 300-0002-00)
- When using AC/DC types with AC operation, slight flickering can occur
- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- If the 24VDC Bi-colour lamp is driven with normal polarity (plus on middle contact of the lamp) the first mentioned colour will light up, with inverted polarity the second colour will light up
- The specified versions are built with a protection diode (half wave rectifier) in series and the LED
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

| LED colour                                                                                              | Operating voltage | Operation current | Lumi. intensity | Dom. wavelength | Part No.            | Weight   |
|---------------------------------------------------------------------------------------------------------|-------------------|-------------------|-----------------|-----------------|---------------------|----------|
| <br><b>Single-LED</b> |                   |                   |                 |                 |                     |          |
| Single-LED red                                                                                          | 6 VDC +10 %       | 15 mA ±15 %       | 350 mcd         | 630 nm          | <b>10-2J06.3142</b> | 0.002 kg |
|                                                                                                         | 12 VAC/DC +10 %   | 7/14 mA ±15 %     | 330 mcd         | 630 nm          | <b>10-2J09.1062</b> | 0.002 kg |
|                                                                                                         | 24 VAC/DC +10 %   | 7/14 mA ±15 %     | 330 mcd         | 630 nm          | <b>10-2J12.1062</b> | 0.002 kg |
|                                                                                                         | 28 VAC/DC +10 %   | 7/14 mA ±15 %     | 330 mcd         | 630 nm          | <b>10-2J13.1062</b> | 0.002 kg |
|                                                                                                         | 48 VAC/DC +10 %   | 4/8 mA ±15 %      | 200 mcd         | 630 nm          | <b>10-2J19.1042</b> | 0.002 kg |
| Single-LED yellow                                                                                       | 6 VDC +10 %       | 15 mA ±15 %       | 300 mcd         | 587 nm          | <b>10-2J06.3144</b> | 0.002 kg |
|                                                                                                         | 12 VAC/DC +10 %   | 7/14 mA ±15 %     | 280 mcd         | 587 nm          | <b>10-2J09.1064</b> | 0.002 kg |
|                                                                                                         | 24 VAC/DC +10 %   | 7/14 mA ±15 %     | 280 mcd         | 587 nm          | <b>10-2J12.1064</b> | 0.002 kg |
|                                                                                                         | 28 VAC/DC +10 %   | 7/14 mA ±15 %     | 280 mcd         | 587 nm          | <b>10-2J13.1064</b> | 0.002 kg |
|                                                                                                         | 48 VAC/DC +10 %   | 4/8 mA ±15 %      | 180 mcd         | 587 nm          | <b>10-2J19.1044</b> | 0.002 kg |
| Single-LED green                                                                                        | 6 VDC +10 %       | 7 mA ±15 %        | 1050 mcd        | 525 nm          | <b>10-2J06.3145</b> | 0.002 kg |
|                                                                                                         | 12 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2J09.1065</b> | 0.002 kg |
|                                                                                                         | 24 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2J12.1065</b> | 0.002 kg |
|                                                                                                         | 28 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2J13.1065</b> | 0.002 kg |
|                                                                                                         | 48 VAC/DC +10 %   | 2/4 mA ±15 %      | 600 mcd         | 525 nm          | <b>10-2J19.1045</b> | 0.002 kg |

| LED colour                                                                                             | Operating voltage | Operation current | Lumi. intensity | Dom. wavelength | Part No.            | Weight   |
|--------------------------------------------------------------------------------------------------------|-------------------|-------------------|-----------------|-----------------|---------------------|----------|
| Single-LED blue                                                                                        | 6 VDC +10 %       | 15 mA ±15 %       | 680 mcd         | 470 nm          | <b>10-2J06.3146</b> | 0.002 kg |
|                                                                                                        | 12 VAC/DC +10 %   | 7/14 mA ±15 %     | 650 mcd         | 470 nm          | <b>10-2J09.1066</b> | 0.002 kg |
|                                                                                                        | 24 VAC/DC +10 %   | 7/14 mA ±15 %     | 650 mcd         | 470 nm          | <b>10-2J12.1066</b> | 0.002 kg |
|                                                                                                        | 28 VAC/DC +10 %   | 7/14 mA ±15 %     | 650 mcd         | 470 nm          | <b>10-2J13.1066</b> | 0.002 kg |
|                                                                                                        | 48 VAC/DC +10 %   | 4/8 mA ±15 %      | 400 mcd         | 470 nm          | <b>10-2J19.1046</b> | 0.002 kg |
| Single-LED white                                                                                       | 6 VDC +10 %       | 6 mA ±15 %        | 900 mcd         | x0.31/y0.32 nm  | <b>10-2J06.3149</b> | 0.002 kg |
|                                                                                                        | 12 VAC/DC +10 %   | 3/6 mA ±15 %      | 900 mcd         | x0.31/y0.32 nm  | <b>10-2J09.1069</b> | 0.002 kg |
|                                                                                                        | 24 VAC/DC +10 %   | 2.5/5 mA ±15 %    | 750 mcd         | x0.31/y0.32 nm  | <b>10-2J12.1069</b> | 0.002 kg |
|                                                                                                        | 28 VAC/DC +10 %   | 2.5/5 mA ±15 %    | 750 mcd         | x0.31/y0.32 nm  | <b>10-2J13.1069</b> | 0.002 kg |
|                                                                                                        | 48 VAC/DC +10 %   | 2/4 mA ±15 %      | 600 mcd         | x0.31/y0.32 nm  | <b>10-2J19.1049</b> | 0.002 kg |
|  <b>Bi-colour LED</b> |                   |                   |                 |                 |                     |          |
| Bi-colour LED red/green                                                                                | 24 VDC +10 %      | 15/14 mA ±15 %    | 600/630 mcd     | 625/525 nm      | <b>10-A312.314A</b> | 0.002 kg |

# 10 Illumination

[Sd=BR10\_AGAU\_Single-LED\_T5.5]  
Single-LED T5.5



Product can differ from the current configuration.

Dimensions [mm]

## Additional Information

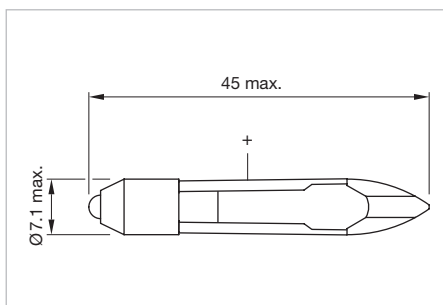
- A suitable LED remover Part No. 02-906 (Series Swisstac Part No. 300-0002-00)
- When fitting the LED elements pay attention to the polarity. An instruction can be found in the chapter «Application guidelines» of the corresponding series
- When using AC/DC types with AC operation, slight flickering can occur
- Electrical and optical data are measured at 25 °C
- Luminous intensity data of the LEDs on direct voltage
- The specified versions are built with a protection diode (half wave rectifier) in series and the LED
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

| LED colour                                                                                           | Operating voltage | Operation current | Lumi. intensity | Dom. wavelength | Part No.            | Weight   |
|------------------------------------------------------------------------------------------------------|-------------------|-------------------|-----------------|-----------------|---------------------|----------|
|  <b>Single-LED</b> |                   |                   |                 |                 |                     |          |
| Single-LED red                                                                                       | 6 VDC +10 %       | 15 mA ±15 %       | 350 mcd         | 630 nm          | <b>10-2106.3142</b> | 0.001 kg |
|                                                                                                      | 12 VAC/DC +10 %   | 7/14 mA ±15 %     | 330 mcd         | 630 nm          | <b>10-2109.1062</b> | 0.001 kg |
|                                                                                                      | 24 VAC/DC +10 %   | 7/14 mA ±15 %     | 330 mcd         | 630 nm          | <b>10-2112.1062</b> | 0.001 kg |
|                                                                                                      | 28 VAC/DC +10 %   | 7/14 mA ±15 %     | 330 mcd         | 630 nm          | <b>10-2113.1062</b> | 0.001 kg |
|                                                                                                      | 48 VAC/DC +10 %   | 4/8 mA ±15 %      | 200 mcd         | 630 nm          | <b>10-2119.1042</b> | 0.001 kg |
| Single-LED yellow                                                                                    | 6 VDC +10 %       | 15 mA ±15 %       | 300 mcd         | 587 nm          | <b>10-2106.3144</b> | 0.001 kg |
|                                                                                                      | 12 VAC/DC +10 %   | 7/14 mA ±15 %     | 280 mcd         | 587 nm          | <b>10-2109.1064</b> | 0.001 kg |
|                                                                                                      | 24 VAC/DC +10 %   | 7/14 mA ±15 %     | 280 mcd         | 587 nm          | <b>10-2112.1064</b> | 0.001 kg |
|                                                                                                      | 28 VAC/DC +10 %   | 7/14 mA ±15 %     | 280 mcd         | 587 nm          | <b>10-2113.1064</b> | 0.001 kg |
|                                                                                                      | 48 VAC/DC +10 %   | 4/8 mA ±15 %      | 180 mcd         | 587 nm          | <b>10-2119.1044</b> | 0.001 kg |
| Single-LED green                                                                                     | 6 VDC +10 %       | 7 mA ±15 %        | 1050 mcd        | 525 nm          | <b>10-2106.3145</b> | 0.001 kg |
|                                                                                                      | 12 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2109.1065</b> | 0.001 kg |
|                                                                                                      | 24 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2112.1065</b> | 0.001 kg |
|                                                                                                      | 28 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2113.1065</b> | 0.001 kg |
|                                                                                                      | 48 VAC/DC +10 %   | 2/4 mA ±15 %      | 600 mcd         | 525 nm          | <b>10-2119.1045</b> | 0.001 kg |

| LED colour       | Operating voltage | Operation current | Lumi. intensity | Dom. wavelength | Part No.            | Weight   |
|------------------|-------------------|-------------------|-----------------|-----------------|---------------------|----------|
| Single-LED blue  | 6 VDC +10 %       | 15 mA ±15 %       | 680 mcd         | 470 nm          | <b>10-2106.3146</b> | 0.001 kg |
|                  | 12 VAC/DC +10 %   | 7/14 mA ±15 %     | 650 mcd         | 470 nm          | <b>10-2109.1066</b> | 0.001 kg |
|                  | 24 VAC/DC +10 %   | 7/14 mA ±15 %     | 650 mcd         | 470 nm          | <b>10-2112.1066</b> | 0.001 kg |
|                  | 28 VAC/DC +10 %   | 7/14 mA ±15 %     | 650 mcd         | 470 nm          | <b>10-2113.1066</b> | 0.001 kg |
|                  | 48 VAC/DC +10 %   | 4/8 mA ±15 %      | 400 mcd         | 470 nm          | <b>10-2119.1046</b> | 0.001 kg |
| Single-LED white | 6 VDC +10 %       | 6 mA ±15 %        | 900 mcd         | x0.31/y0.32 nm  | <b>10-2106.3149</b> | 0.001 kg |
|                  | 12 VAC/DC +10 %   | 3/6 mA ±15 %      | 900 mcd         | x0.31/y0.32 nm  | <b>10-2109.1069</b> | 0.001 kg |
|                  | 24 VAC/DC +10 %   | 2.5/5 mA ±15 %    | 750 mcd         | x0.31/y0.32 nm  | <b>10-2112.1069</b> | 0.001 kg |
|                  | 28 VAC/DC +10 %   | 2.5/5 mA ±15 %    | 750 mcd         | x0.31/y0.32 nm  | <b>10-2113.1069</b> | 0.001 kg |
|                  | 48 VAC/DC +10 %   | 2/4 mA ±15 %      | 600 mcd         | x0.31/y0.32 nm  | <b>10-2119.1049</b> | 0.001 kg |

# 10 Illumination

[Sd=BR10\_AGAU\_Single-LED\_T6.8]  
Single-LED T6.8



Product can differ from the current configuration.

Dimensions [mm]

## Additional Information

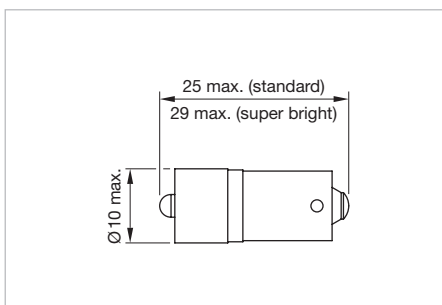
- A suitable LED remover Part No. 03-996
- When fitting the LED elements pay attention to the polarity. An instruction can be found in the chapter «Application guidelines» of the corresponding series
- When using AC/DC types with AC operation, slight flickering can occur
- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- The specified versions are built with a protection diode (half wave rectifier) in series and the LED
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

| LED colour                                                                                           | Operating voltage | Operation current | Lumi. intensity | Dom. wavelength | Part No.            | Weight   |
|------------------------------------------------------------------------------------------------------|-------------------|-------------------|-----------------|-----------------|---------------------|----------|
|  <b>Single-LED</b> |                   |                   |                 |                 |                     |          |
| Single-LED red                                                                                       | 6 VDC +10 %       | 17 mA ±15 %       | 400 mcd         | 630 nm          | <b>10-2K06.3152</b> | 0.002 kg |
|                                                                                                      | 12 VAC/DC +10 %   | 9/17 mA ±15 %     | 400 mcd         | 630 nm          | <b>10-2K09.1072</b> | 0.002 kg |
|                                                                                                      | 24 VAC/DC +10 %   | 9/17 mA ±15 %     | 400 mcd         | 630 nm          | <b>10-2K12.1072</b> | 0.002 kg |
|                                                                                                      | 28 VAC/DC +10 %   | 9/17 mA ±15 %     | 400 mcd         | 630 nm          | <b>10-2K13.1072</b> | 0.002 kg |
|                                                                                                      | 48 VAC/DC +10 %   | 4/8 mA ±15 %      | 200 mcd         | 630 nm          | <b>10-2K19.1052</b> | 0.002 kg |
| Single-LED yellow                                                                                    | 6 VDC +10 %       | 17 mA ±15 %       | 340 mcd         | 340 nm          | <b>10-2K06.3154</b> | 0.002 kg |
|                                                                                                      | 12 VAC/DC +10 %   | 9/17 mA ±15 %     | 340 mcd         | 340 nm          | <b>10-2K09.1074</b> | 0.002 kg |
|                                                                                                      | 24 VAC/DC +10 %   | 9/17 mA ±15 %     | 340 mcd         | 340 nm          | <b>10-2K12.1074</b> | 0.002 kg |
|                                                                                                      | 28 VAC/DC +10 %   | 9/17 mA ±15 %     | 340 mcd         | 340 nm          | <b>10-2K13.1074</b> | 0.002 kg |
|                                                                                                      | 48 VAC/DC +10 %   | 4/8 mA ±15 %      | 180 mcd         | 340 nm          | <b>10-2K19.1054</b> | 0.002 kg |
| Single-LED green                                                                                     | 6 VDC +10 %       | 7 mA ±15 %        | 1050 mcd        | 525 nm          | <b>10-2K06.3155</b> | 0.002 kg |
|                                                                                                      | 12 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2K09.1075</b> | 0.002 kg |
|                                                                                                      | 24 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2K12.1075</b> | 0.002 kg |
|                                                                                                      | 28 VAC/DC +10 %   | 4/7 mA ±15 %      | 1050 mcd        | 525 nm          | <b>10-2K13.1075</b> | 0.002 kg |
|                                                                                                      | 48 VAC/DC +10 %   | 2/4 mA ±15 %      | 600 mcd         | 525 nm          | <b>10-2K19.1055</b> | 0.002 kg |

| LED colour       | Operating voltage | Operation current   | Lumi. intensity | Dom. wavelength | Part No.            | Weight   |
|------------------|-------------------|---------------------|-----------------|-----------------|---------------------|----------|
| Single-LED blue  | 6 VDC +10 %       | 17 mA $\pm$ 15 %    | 780 mcd         | 470 nm          | <b>10-2K06.3156</b> | 0.002 kg |
|                  | 12 VAC/DC +10 %   | 9/17 mA $\pm$ 15 %  | 780 mcd         | 470 nm          | <b>10-2K09.1076</b> | 0.002 kg |
|                  | 24 VAC/DC +10 %   | 9/17 mA $\pm$ 15 %  | 780 mcd         | 470 nm          | <b>10-2K12.1076</b> | 0.002 kg |
|                  | 28 VAC/DC +10 %   | 9/17 mA $\pm$ 15 %  | 780 mcd         | 470 nm          | <b>10-2K13.1076</b> | 0.002 kg |
|                  | 48 VAC/DC +10 %   | 4/8 mA $\pm$ 15 %   | 400 mcd         | 470 nm          | <b>10-2K19.1056</b> | 0.002 kg |
| Single-LED white | 6 VDC +10 %       | 6 mA $\pm$ 15 %     | 900 mcd         | x0.31/y0.32 nm  | <b>10-2K06.3159</b> | 0.002 kg |
|                  | 12 VAC/DC +10 %   | 3/6 mA $\pm$ 15 %   | 900 mcd         | x0.31/y0.32 nm  | <b>10-2K09.1079</b> | 0.002 kg |
|                  | 24 VAC/DC +10 %   | 3/6 mA $\pm$ 15 %   | 900 mcd         | x0.31/y0.32 nm  | <b>10-2K12.1079</b> | 0.002 kg |
|                  | 28 VAC/DC +10 %   | 2.5/5 mA $\pm$ 15 % | 750 mcd         | x0.31/y0.32 nm  | <b>10-2K13.1079</b> | 0.002 kg |
|                  | 48 VAC/DC +10 %   | 2/4 mA $\pm$ 15 %   | 600 mcd         | x0.31/y0.32 nm  | <b>10-2K19.1059</b> | 0.002 kg |

# 10 Illumination

(\$d=BR10\_AGAU\_Single-LED\_BA9s)  
**LED BA9s**



Product can differ from the current configuration.

Dimensions [mm]

## Additional Information

- A suitable LED remover Part No. 700.006.0 (Series 44 Part No. 44-935)
- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- The specified 6 VDC, 24 VDC Bi-colour; 130 VAC, 130 DC und 230 VAC versions are built with a protection diode
- The specified 12, 24, 28, 48 VAC/DC versions are built with a bridge rectifier
- If the 24VDC Bi-colour lamp is driven with normal polarity (plus on middle contact of the lamp) the first mentioned colour will light up, with inverted polarity the second colour will light up
- The specified 130 VAC types are developed to run on a supply voltage of 130 VAC only. An operation at a higher supply voltage using commercial lampholders with integrated resistors, is not approved
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

| LED colour                                                                                           | Operating voltage | Operation current | Lumi. intensity | Dom. wavelength | Part No.            | Weight   |
|------------------------------------------------------------------------------------------------------|-------------------|-------------------|-----------------|-----------------|---------------------|----------|
|  <b>Single-LED</b> |                   |                   |                 |                 |                     |          |
| Single-LED red                                                                                       | 6 VDC +10 %       | 17 mA ±15 %       | 400 mcd         | 630 nm          | <b>10-2506.1082</b> | 0.002 kg |
|                                                                                                      | 12 VAC/DC +10 %   | 16 mA ±15 %       | 390 mcd         | 630 nm          | <b>10-2509.1142</b> | 0.002 kg |
|                                                                                                      | 24 VAC/DC +10 %   | 15 mA ±15 %       | 350 mcd         | 630 nm          | <b>10-2512.1142</b> | 0.002 kg |
|                                                                                                      | 28 VAC/DC +10 %   | 13 mA ±15 %       | 300 mcd         | 630 nm          | <b>10-2513.1142</b> | 0.002 kg |
|                                                                                                      | 48 VAC/DC +10 %   | 8 mA ±15 %        | 200 mcd         | 630 nm          | <b>10-2519.1052</b> | 0.002 kg |
|                                                                                                      | 130 VDC +10 %     | 3 mA ±15 %        | 120 mcd         | 630 nm          | <b>10-2524.3042</b> | 0.002 kg |
|                                                                                                      | 130 VAC +10 %     | 5 mA ±15 %        | 180 mcd         | 630 nm          | <b>10-2H24.2052</b> | 0.002 kg |
|                                                                                                      | 230 VAC +10 %     | 3 mA ±15 %        | 120 mcd         | 630 nm          | <b>10-2H25.2042</b> | 0.002 kg |
| Single-LED yellow                                                                                    | 6 VDC +10 %       | 17 mA ±15 %       | 340 mcd         | 587 nm          | <b>10-2506.1084</b> | 0.002 kg |
|                                                                                                      | 12 VAC/DC +10 %   | 16 mA ±15 %       | 340 mcd         | 587 nm          | <b>10-2509.1144</b> | 0.002 kg |
|                                                                                                      | 24 VAC/DC +10 %   | 15 mA ±15 %       | 300 mcd         | 587 nm          | <b>10-2512.1144</b> | 0.002 kg |
|                                                                                                      | 28 VAC/DC +10 %   | 13 mA ±15 %       | 270 mcd         | 587 nm          | <b>10-2513.1144</b> | 0.002 kg |
|                                                                                                      | 48 VAC/DC +10 %   | 8 mA ±15 %        | 180 mcd         | 587 nm          | <b>10-2519.1054</b> | 0.002 kg |
|                                                                                                      | 130 VDC +10 %     | 3 mA ±15 %        | 110 mcd         | 587 nm          | <b>10-2524.3044</b> | 0.002 kg |

| LED colour        | Operating voltage | Operation current | Lumi. intensity | Dom. wavelength | Part No.            | Weight   |
|-------------------|-------------------|-------------------|-----------------|-----------------|---------------------|----------|
| Single-LED yellow | 130 VAC +10 %     | 5 mA ±15 %        | 160 mcd         | 587 nm          | <b>10-2H24.2054</b> | 0.002 kg |
|                   | 230 VAC +10 %     | 3 mA ±15 %        | 110 mcd         | 587 nm          | <b>10-2H25.2044</b> | 0.002 kg |
| Single-LED green  | 6 VDC +10 %       | 7 mA ±15 %        | 1050 mcd        | 525 nm          | <b>10-2506.1085</b> | 0.002 kg |
|                   | 12 VAC/DC +10 %   | 7 mA ±15 %        | 1050 mcd        | 525 nm          | <b>10-2509.1145</b> | 0.002 kg |
|                   | 24 VAC/DC +10 %   | 7 mA ±15 %        | 1050 mcd        | 525 nm          | <b>10-2512.1145</b> | 0.002 kg |
|                   | 28 VAC/DC +10 %   | 7 mA ±15 %        | 1050 mcd        | 525 nm          | <b>10-2513.1145</b> | 0.002 kg |
|                   | 48 VAC/DC +10 %   | 4 mA ±15 %        | 600 mcd         | 525 nm          | <b>10-2519.1055</b> | 0.002 kg |
|                   | 130 VDC +10 %     | 2 mA ±15 %        | 300 mcd         | 525 nm          | <b>10-2524.3045</b> | 0.002 kg |
|                   | 130 VAC +10 %     | 3 mA ±15 %        | 450 mcd         | 525 nm          | <b>10-2H24.2055</b> | 0.002 kg |
|                   | 230 VAC +10 %     | 2 mA ±15 %        | 300 mcd         | 525 nm          | <b>10-2H25.2045</b> | 0.002 kg |
| Single-LED blue   | 6 VDC +10 %       | 17 mA ±15 %       | 780 mcd         | 470 nm          | <b>10-2506.1086</b> | 0.002 kg |
|                   | 12 VAC/DC +10 %   | 16 mA ±15 %       | 720 mcd         | 470 nm          | <b>10-2509.1146</b> | 0.002 kg |
|                   | 24 VAC/DC +10 %   | 15 mA ±15 %       | 680 mcd         | 470 nm          | <b>10-2512.1146</b> | 0.002 kg |
|                   | 28 VAC/DC +10 %   | 13 mA ±15 %       | 590 mcd         | 470 nm          | <b>10-2513.1146</b> | 0.002 kg |
|                   | 48 VAC/DC +10 %   | 8 mA ±15 %        | 400 mcd         | 470 nm          | <b>10-2519.1056</b> | 0.002 kg |
|                   | 130 VDC +10 %     | 3 mA ±15 %        | 200 mcd         | 470 nm          | <b>10-2524.3046</b> | 0.002 kg |
|                   | 130 VAC +10 %     | 5 mA ±15 %        | 230 mcd         | 470 nm          | <b>10-2H24.2056</b> | 0.002 kg |
|                   | 230 VAC +10 %     | 3 mA ±15 %        | 200 mcd         | 470 nm          | <b>10-2H25.2046</b> | 0.002 kg |
| Single-LED white  | 6 VDC +10 %       | 5 mA ±15 %        | 750 mcd         | x0.31/y0.32 nm  | <b>10-2506.1089</b> | 0.002 kg |
|                   | 12 VAC/DC +10 %   | 8 mA ±15 %        | 1200 mcd        | x0.31/y0.32 nm  | <b>10-2509.1149</b> | 0.002 kg |
|                   | 24 VAC/DC +10 %   | 7 mA ±15 %        | 1050 mcd        | x0.31/y0.32 nm  | <b>10-2512.1149</b> | 0.002 kg |
|                   | 28 VAC/DC +10 %   | 5 mA ±15 %        | 750 mcd         | x0.31/y0.32 nm  | <b>10-2513.1149</b> | 0.002 kg |
|                   | 48 VAC/DC +10 %   | 5 mA ±15 %        | 750 mcd         | x0.31/y0.32 nm  | <b>10-2519.1059</b> | 0.002 kg |
|                   | 130 VDC +10 %     | 1.5 mA ±15 %      | 225 mcd         | x0.31/y0.32 nm  | <b>10-2524.3049</b> | 0.002 kg |
|                   | 130 VAC +10 %     | 2 mA ±15 %        | 300 mcd         | x0.31/y0.32 nm  | <b>10-2H24.2059</b> | 0.002 kg |
|                   | 230 VAC +10 %     | 1.5 mA ±15 %      | 225 mcd         | x0.31/y0.32 nm  | <b>10-2H25.2049</b> | 0.002 kg |



#### Single-LED super bright

|                   |                 |             |           |        |                      |          |
|-------------------|-----------------|-------------|-----------|--------|----------------------|----------|
| Single-LED red    | 28 VAC/DC +10 % | 14 mA ±15 % | 7700 mcd  | 630 nm | <b>10-2413.1132R</b> | 0.002 kg |
| Single-LED green  | 28 VAC/DC +10 % | 13 mA ±15 % | 12400 mcd | 525 nm | <b>10-2413.1125R</b> | 0.002 kg |
| Single-LED yellow | 28 VAC/DC +10 % | 14 mA ±15 % | 4200 mcd  | 589 nm | <b>10-2413.1134R</b> | 0.002 kg |



#### Single-LED with integrated Zener diode

|                          |                    |                |               |             |                      |          |
|--------------------------|--------------------|----------------|---------------|-------------|----------------------|----------|
| Single-LED red           | 24–30 VAC/DC +10 % | 13–19 mA ±15 % | 300–440 mcd   | 630 nm      | <b>10-2H13.3162Q</b> | 0.002 kg |
| Single-LED green         | 24–30 VAC/DC +10 % | 12–18 mA ±15 % | 1800–2700 mcd | 525 nm      | <b>10-2H13.3165Q</b> | 0.002 kg |
| Single-LED yellow        | 24–30 VAC/DC +10 % | 13–19 mA ±15 % | 270–380 mcd   | 587 nm      | <b>10-2H13.3164Q</b> | 0.002 kg |
| Single-LED blue          | 24–30 VAC/DC +10 % | 12–18 mA ±15 % | 560–800 mcd   | 470 nm      | <b>10-2H13.3166Q</b> | 0.002 kg |
| Single-LED white diffuse | 24–30 VAC/DC +10 % | 7–11 mA ±15 %  | 600–900 mcd   | x0.31/y0.32 | <b>10-2H13.3169Q</b> | 0.002 kg |

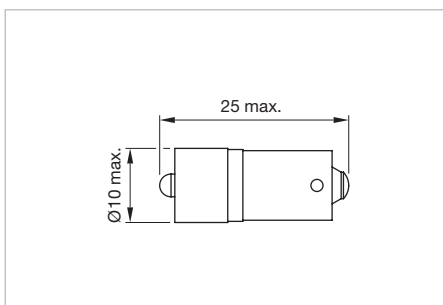


#### Bi-colour LED

|                            |              |             |              |            |                     |          |
|----------------------------|--------------|-------------|--------------|------------|---------------------|----------|
| Bi-colour LED red/green    | 24 VDC +10 % | 15 mA ±15 % | 1200/900 mcd | 625/525 nm | <b>10-2H12.314A</b> | 0.002 kg |
| Bi-colour LED red/yellow   | 24 VDC +10 % | 15 mA ±15 % | 1200/550 mcd | 625/589 nm | <b>10-2H12.314B</b> | 0.002 kg |
| Bi-colour LED yellow/green | 24 VDC +10 % | 15 mA ±15 % | 900/550 mcd  | 525/589 nm | <b>10-2H12.314C</b> | 0.002 kg |

# 10 Illumination

(Sd=BR10, AGAU, Single-LED, BA9s, fail\_safe)  
**LED BA9s, EN 50155, Fail Safe**



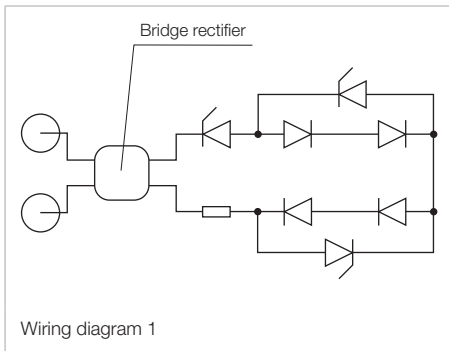
Product can differ from the current configuration.

Dimensions [mm]

## Additional Information

- A suitable LED remover Part No. 700.006.0 (Series 44 Part No. 44-935)
- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- The specified 72 and 110 VAC/VDC versions are built with a protection diode
- Specified 72 and 110 VAC/VDC versions are built with a bridge rectifier
- In case one LED fails, the other pair of still functioning LED-s is working. The light output then is half in order to indicate the malfunction and shows this way the need for replacement
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

| LED colour                                                                                                    | Operating voltage     | Operation current | Lumi. intensity | Dom. wavelength | Part No.             | Wiring diagram | Weight   |
|---------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|-----------------|-----------------|----------------------|----------------|----------|
|  <b>Multi-LED Fail Safe</b> |                       |                   |                 |                 |                      |                |          |
| Multi-LED rot                                                                                                 | 72 VAC/DC -30%/+25 %  | 2.2 mA -30%/+25 % | 4 x 190 mcd     | 625 nm          | <b>10-4H21.1032P</b> | 1              | 0.002 kg |
|                                                                                                               | 110 VAC/DC -30%/+25 % | 2 mA -30 % /+25%  | 4 x 170 mcd     | 625 nm          | <b>10-4H22.1032P</b> | 1              | 0.002 kg |
| Multi-LED yellow                                                                                              | 72 VAC/DC -30%/+25 %  | 2.2 mA -30%/+25 % | 4 x 190 mcd     | 589 nm          | <b>10-4H21.1034P</b> | 1              | 0.002 kg |
|                                                                                                               | 110 VAC/DC -30%/+25 % | 2 mA -30%/+25 %   | 4 x 170 mcd     | 589 nm          | <b>10-4H22.1034P</b> | 1              | 0.002 kg |
| Multi-LED green                                                                                               | 72 VAC/DC -30%/+25 %  | 2.2 mA -30%/+25 % | 4 x 120 mcd     | 525 nm          | <b>10-4H21.1035P</b> | 1              | 0.002 kg |
|                                                                                                               | 110 VAC/DC -30%/+25 % | 2 mA -30%/+25 %   | 4 x 170 mcd     | 525 nm          | <b>10-4H22.1035P</b> | 1              | 0.002 kg |
| Multi-LED blue                                                                                                | 72 VAC/DC -30%/+25 %  | 2.2 mA -30%/+25 % | 4 x 30 mcd      | 465 nm          | <b>10-4H21.1036P</b> | 1              | 0.002 kg |
|                                                                                                               | 110 VAC/DC -30%/+25 % | 2 mA -30%/+25 %   | 4 x 25 mcd      | 465 nm          | <b>10-4H22.1036P</b> | 1              | 0.002 kg |
| Multi-LED white                                                                                               | 72 VAC/DC -30%/+25 %  | 2.2 mA -30%/+25 % | 4 x 160 mcd     |                 | <b>10-4H21.1039P</b> | 1              | 0.002 kg |
|                                                                                                               | 110 VAC/DC -30%/+25 % | 2 mA -30%/+25 %   | 4 x 145 mcd     |                 | <b>10-4H22.1039P</b> | 1              | 0.002 kg |

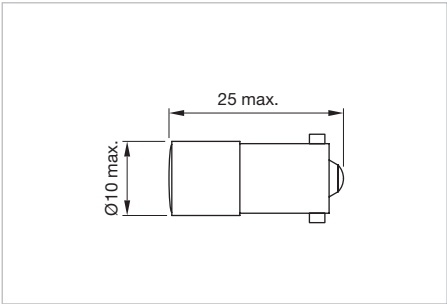


# 10 Illumination

## LED BA9s, EN 50155



Product can differ from the current configuration.

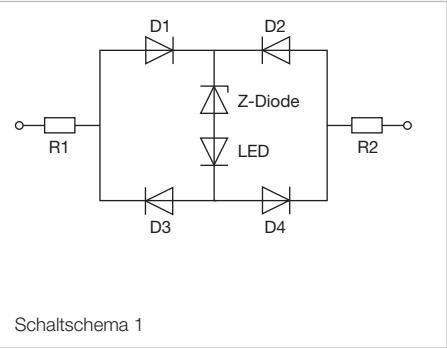


Dimensions [mm]

### Additional Information

- A suitable LED remover Part No. 700.006.0 (Series 44 Part No. 44-935)
- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- The specified 24 VAC/VDC versions are built with a protection diode
- Specified 24 VAC/VDC versions are built with a bridge rectifier
- The new, white BA9s LED operates within a range of 16VDC to 34VDC. It conforms to the norms EN 50155 and IEEE 1476.
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

| LED colour                                                                                                     | Operating voltage    | Operation current | Lumi. intensity | Dom. wavelength | Part No.             | Wiring diagram | Weight   |
|----------------------------------------------------------------------------------------------------------------|----------------------|-------------------|-----------------|-----------------|----------------------|----------------|----------|
| <div><b>Multi-LED</b></div> |                      |                   |                 |                 |                      |                |          |
| Multi-LED white                                                                                                | 24 VAC/DC -30%/+25 % | 7.5 mA -30%/+25 % | 700 mcd         | 625 nm          | <b>10-2412.1089P</b> | 1              | 0.002 kg |



**Illumination**

(\$d=BR10\_AGAU\_LED-Zieher\_zu\_T1\_3/4\_MG)

**LED remover for T1 3/4 MG****Additional Information**

▲ **Caution:** A switching process might be released when replacing the lamp

| Product attribute                                                                                           | Part No.                          | Weight                      |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------|
|  <p><b>LED remover</b></p> |                                   |                             |
|                                                                                                             | für series 22, 31, 41, 51, 61, 71 | <b>61-9740.0</b> 0.003 kg   |
|                                                                                                             | for series Swisstac               | <b>300-0002-00</b> 0.003 kg |

(\$d=BR10\_AGAU\_LED-zieher\_zu\_T5.5)

**LED remover for T5.5****Additional Information**

▲ **Caution:** A switching process might be released when replacing the lamp

| Product attribute                                                                                             | Part No.          | Weight                 |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
|  <p><b>LED remover</b></p> |                   |                        |
|                                                                                                               | for series 01, 14 | <b>02-906</b> 0.002 kg |

(\$d=BR10\_AGAU\_LED-Zieher\_zu\_T6.8)

**LED remover for T6.8****Additional Information**

▲ **Caution:** A switching process might be released when replacing the lamp

| Product attribute                                                                                             | Part No.          | Weight                 |
|---------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
|  <p><b>LED remover</b></p> |                   |                        |
|                                                                                                               | for series 02, 03 | <b>03-996</b> 0.027 kg |

# 10 Accessories

(\$d=BR10\_AGAU\_LED-Zieher\_zu\_T3\_1/4\_BA9s)  
**LED remover for BA9s**

### Additional Information

▲ **Caution:** A switching process might be released when replacing the lamp

| Product attribute                                                                                       | Part No.         | Weight   |
|---------------------------------------------------------------------------------------------------------|------------------|----------|
| <br><b>LED remover</b> |                  |          |
| for series 04                                                                                           | <b>700.006.0</b> | 0.003 kg |
| <br><b>LED remover</b> |                  |          |
| for series 44                                                                                           | <b>44-935</b>    | 0.037 kg |

## Technical Data

### Electrical characteristics

**Operating voltage tolerance**  
+10%

### Mechanical characteristics

#### Standards

Lamp base

Base Standard

T1 3/4 MG DIN EN 60061-1: S5,7s

T5.5 DIN 49601

T6.8 DIN 49601

BA9s DIN EN 60061-1: BA9s

### Environmental conditions

**Storage temperature**  
-25 °C ... +80 °C

**Service temperature**  
-20 °C ... +60 °C

*EAO reserves the right to alter specifications without further notice.*

# 10 Application guidelines

## LED used in

| Series        | Base<br>T 1 3/4 | T 5.5 | T 6.8 | BA9s |
|---------------|-----------------|-------|-------|------|
| 01            |                 | ■     |       |      |
| 02            |                 |       | ■     |      |
| 03            |                 |       | ■     |      |
| 04            |                 |       |       | ■    |
| 14            |                 | ■     |       |      |
| 22            | ■               |       |       |      |
| 31            | ■               |       |       |      |
| 44            |                 |       |       | ■    |
| 51            | ■               |       |       |      |
| 55 – Swisstac | ■               | ■     |       |      |
| 61            | ■               |       |       |      |
| 71            | ■               |       |       |      |

## Index from Part No.

| Part No.            | Page | Part No.            | Page |
|---------------------|------|---------------------|------|
| 02-906 .....        | 15   | 10-2J09.1064 .....  | 4    |
| 03-996 .....        | 15   | 10-2J09.1065 .....  | 4    |
| 10-2106.3142 .....  | 6    | 10-2J09.1066 .....  | 5    |
| 10-2106.3144 .....  | 6    | 10-2J09.1069 .....  | 5    |
| 10-2106.3145 .....  | 6    | 10-2J12.1062 .....  | 4    |
| 10-2106.3146 .....  | 7    | 10-2J12.1064 .....  | 4    |
| 10-2106.3149 .....  | 7    | 10-2J12.1065 .....  | 4    |
| 10-2109.1062 .....  | 6    | 10-2J12.1066 .....  | 5    |
| 10-2109.1064 .....  | 6    | 10-2J12.1069 .....  | 5    |
| 10-2109.1065 .....  | 6    | 10-2J13.1062 .....  | 4    |
| 10-2109.1066 .....  | 7    | 10-2J13.1064 .....  | 4    |
| 10-2109.1069 .....  | 7    | 10-2J13.1065 .....  | 4    |
| 10-2112.1062 .....  | 6    | 10-2J13.1066 .....  | 5    |
| 10-2112.1064 .....  | 6    | 10-2J13.1069 .....  | 5    |
| 10-2112.1065 .....  | 6    | 10-2J19.1042 .....  | 4    |
| 10-2112.1066 .....  | 7    | 10-2J19.1044 .....  | 4    |
| 10-2112.1069 .....  | 7    | 10-2J19.1045 .....  | 4    |
| 10-2113.1062 .....  | 6    | 10-2J19.1046 .....  | 5    |
| 10-2113.1064 .....  | 6    | 10-2J19.1049 .....  | 5    |
| 10-2113.1065 .....  | 6    | 10-2K06.3152 .....  | 8    |
| 10-2113.1066 .....  | 7    | 10-2K06.3154 .....  | 8    |
| 10-2113.1069 .....  | 7    | 10-2K06.3155 .....  | 8    |
| 10-2119.1042 .....  | 6    | 10-2K06.3156 .....  | 9    |
| 10-2119.1044 .....  | 6    | 10-2K06.3159 .....  | 9    |
| 10-2119.1045 .....  | 6    | 10-2K09.1072 .....  | 8    |
| 10-2119.1046 .....  | 7    | 10-2K09.1074 .....  | 8    |
| 10-2119.1049 .....  | 7    | 10-2K09.1075 .....  | 8    |
| 10-2412.1089P ..... | 14   | 10-2K09.1076 .....  | 9    |
| 10-2506.1082 .....  | 10   | 10-2K09.1079 .....  | 9    |
| 10-2506.1084 .....  | 10   | 10-2K12.1072 .....  | 8    |
| 10-2506.1085 .....  | 11   | 10-2K12.1074 .....  | 8    |
| 10-2506.1086 .....  | 11   | 10-2K12.1075 .....  | 8    |
| 10-2506.1089 .....  | 11   | 10-2K12.1076 .....  | 9    |
| 10-2509.1142 .....  | 10   | 10-2K12.1079 .....  | 9    |
| 10-2509.1144 .....  | 10   | 10-2K13.1072 .....  | 8    |
| 10-2509.1145 .....  | 11   | 10-2K13.1074 .....  | 8    |
| 10-2509.1146 .....  | 11   | 10-2K13.1075 .....  | 8    |
| 10-2509.1149 .....  | 11   | 10-2K13.1076 .....  | 9    |
| 10-2512.1142 .....  | 10   | 10-2K13.1079 .....  | 9    |
| 10-2512.1144 .....  | 10   | 10-2K19.1052 .....  | 8    |
| 10-2512.1145 .....  | 11   | 10-2K19.1054 .....  | 8    |
| 10-2512.1146 .....  | 11   | 10-2K19.1055 .....  | 8    |
| 10-2512.1149 .....  | 11   | 10-2K19.1056 .....  | 9    |
| 10-2513.1142 .....  | 10   | 10-2K19.1059 .....  | 9    |
| 10-2513.1144 .....  | 10   | 10-4H21.1032P ..... | 12   |
| 10-2513.1145 .....  | 11   | 10-4H21.1034P ..... | 12   |
| 10-2513.1146 .....  | 11   | 10-4H21.1035P ..... | 12   |
| 10-2513.1149 .....  | 11   | 10-4H21.1036P ..... | 12   |
| 10-2519.1052 .....  | 10   | 10-4H21.1039P ..... | 12   |
| 10-2519.1054 .....  | 10   | 10-4H22.1032P ..... | 12   |
| 10-2519.1055 .....  | 11   | 10-4H22.1034P ..... | 12   |
| 10-2519.1056 .....  | 11   | 10-4H22.1035P ..... | 12   |
| 10-2519.1059 .....  | 11   | 10-4H22.1036P ..... | 12   |
| 10-2524.3042 .....  | 10   | 10-4H22.1039P ..... | 12   |
| 10-2524.3044 .....  | 10   | 10-A312.314A .....  | 5    |
| 10-2524.3045 .....  | 11   | 300-0002-00 .....   | 15   |
| 10-2524.3046 .....  | 11   | 44-935 .....        | 16   |
| 10-2524.3049 .....  | 11   | 61-9740.0 .....     | 15   |
| 10-2H12.314A .....  | 11   | 700.006.0 .....     | 16   |
| 10-2H12.314B .....  | 11   |                     |      |
| 10-2H12.314C .....  | 11   |                     |      |
| 10-2H24.2052 .....  | 10   |                     |      |
| 10-2H24.2054 .....  | 11   |                     |      |
| 10-2H24.2055 .....  | 11   |                     |      |
| 10-2H24.2056 .....  | 11   |                     |      |
| 10-2H24.2059 .....  | 11   |                     |      |
| 10-2H25.2042 .....  | 10   |                     |      |
| 10-2H25.2044 .....  | 11   |                     |      |
| 10-2H25.2045 .....  | 11   |                     |      |
| 10-2H25.2046 .....  | 11   |                     |      |
| 10-2H25.2049 .....  | 11   |                     |      |
| 10-2J06.3142 .....  | 4    |                     |      |
| 10-2J06.3144 .....  | 4    |                     |      |
| 10-2J06.3145 .....  | 4    |                     |      |
| 10-2J06.3146 .....  | 5    |                     |      |
| 10-2J06.3149 .....  | 5    |                     |      |
| 10-2J09.1062 .....  | 4    |                     |      |



# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## EAO:

[10-2K12.1074](#) [10-2602.3174C](#) [10-1112.1279](#) [10-2602.3205L](#) [10-2K13.1079](#) [10-2506.1086](#) [10-2K12.1072](#) [10-2513.1144](#) [10-2J19.1049](#) [10-2J19.1045](#) [10-1106.1369](#) [10-2112.1062](#) [10-1313.1209](#) [10-2602.3175E](#) [10-A312.314A](#)  
[10-1113.1249](#) [10-1306.1349](#) [10-2K09.1072](#) [10-1313.1249](#) [10-1214.1249](#) [10-2H12.314B](#) [10-2K09.1074](#) [10-2113.1062](#) [10-2109.1069](#) [10-2K13.1072](#) [10-2112.1064](#) [10-2603.3179C](#) [10-2602.3206L](#) [10-2602.3203L](#) [10-1219.1199](#) [10-2506.1085](#) [10-4613.3103B](#) [10-1319.1199](#) [10-2113.1065](#) [10-2H25.2042](#) [10-2602.3172G](#) [10-2106.3145](#) [10-2106.3146](#) [10-2J06.3149](#) [10-1312.1229](#) [10-4613.3102B](#) [10-2524.3045](#) [10-2109.1062](#) [10-1309.1309](#) [10-2602.3175C](#) [10-2H12.314C](#) [10-2106.3142](#) [10-1212.1279](#) [10-2602.3172E](#) [10-2K12.1079](#) [10-2K09.1079](#) [10-2106.3149](#) [10-2602.3174E](#) [10-2K13.1075](#) [10-1420.1219](#) [10-4613.3104B](#) [10-2112.1065](#) [10-2519.1059](#) [10-1109.1329](#) [10-2112.1066](#) [10-1613.1189](#) [10-1424.1179](#) [10-2H12.314A](#) [10-4613.3105B](#) [10-2J06.3146](#) [10-1416.1289](#)  
[10-2602.3175G](#) [10-2J19.1046](#) [10-2J19.1044](#) [10-1409.1329](#) [10-2513.1149](#) [10-2J06.3144](#) [10-2513.1142](#) [10-2602.3174G](#) [10-2K09.1075](#) [10-1213.1249](#) [10-2K13.1074](#) [10-2106.3144](#) [10-2119.1042](#) [10-2309.1065](#) [10-2312.1069](#) [10-1612.1189](#) [10-2306.3149](#) [10-5113.3144](#) [10-2313.1069](#) [10-5109.3205](#) [10-2602.3174D](#) [10-5213.3145](#) [10-5606.3242D](#) [10-2602.3175H](#) [10-5106.3255](#) [10-5212.3144](#) [10-6409.3245](#) [10-5213.3142](#) [10-6409.3242](#) [10-5109.3204](#) [10-5206.3255](#) [10-7123.2022](#) [10-6406.3315](#) [10-5119.3132](#)