

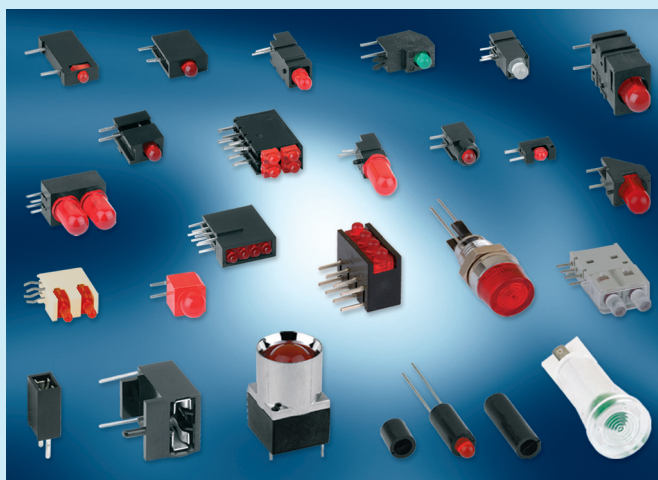
LED-Anzeigesysteme

LED Display Systems

In die Entwicklung dieser Bausteine ist das über Jahrzehnte erworbene Know-how der Firma MENTOR als Entwickler und Lieferant von Bauelementen für die Industrieelektronik geflossen. Die Bauelementen-Vielfalt erstreckt sich von THT-Einzelanzeigen in unterschiedlichsten Ausführungen über THT-LED-Leisten, Flächenausleuchtssystemen, Signallampen bis hin zu Lampenfassungen. THT-Ausführungen kennzeichnen Bauteile in Durchstecktechnik.

Der Einsatz dieser Bausteine ist überall dort zu suchen, wo Licht flimmert, strahlt oder blinkt, wo Lichtsignale auf Funktionen oder Betriebszustände aufmerksam machen sollen und müssen.

Den sich ständig verändernden Anforderungen unserer Kunden begegnen wir mit Kompetenz und Innovationskraft und der sich daraus ergebenden Möglichkeit, neben Standardlösungen auch spezielle Kundenwünsche zu erfüllen.



The development of these components benefited from decades of experience gained by MENTOR in developing and supplying components for industrial electronics. The range of components stretches from individual THT displays in various versions via THT LED bars, surfaces made from illumination systems, and signaling lamps all the way to lamp sockets. THT versions designate components in hole-mounted technology.

The area of application of these components covers any scenario where light flickers, radiates or flashes where light signals should and must draw attention to functions or operating status.

We meet our customer's constantly changing demands with competency and innovative energy, thus being able to fulfil not only standard solutions but also to meet customer specific requirements.

| Allgemeine technische Daten | (Auswahl bzw. Abweichungen zu den folgenden allgem. Daten: siehe Beschreibung des jeweiligen Artikels) |
|--|--|
| Lötbarkeit | DIN IEC 68-2-20 (260°C ≤ 5s) |
| Anschlüsse | verzinkt |
| Betriebstemperatur | -40°C ... +85°C |
| Klima | GPF DIN 40040 |
| Beschriftung | auf Sonderwunsch bedruckt oder gelasert |
| Bestückung mit LED's | Technische Daten siehe Seite 65/66 |
| Sonderwünsche | Sonderbestückung, Verwendung von zusätzlichen Fixierpins sowie umgekehrte Polarität auf Anfrage möglich. |
| Mindestbestellmengen für Sonderausführungen auf Anfrage. | |

| General Technical Data | (Selection and deviations from the following general data: see description of the respective item) |
|---|--|
| Solderability | DIN IEC 68-2-20 (260°C ≤ 5s) |
| Terminals | tinned |
| Operatin temperature | -40°C ... +85°C |
| Climate | GPF DIN 40040 |
| Marking | On special request printed or laser printed |
| LED's | Technical data see page 65/66 |
| Special requirements | Special components, use of additional fixing pins and reverse polarity on request |
| Minimum quantity for special design on request. | |

Ø5mm Einzel-LED's liegend

Ø5mm Single LEDs horizontal

Allgemeine Hinweise und Technische Daten

Allgemeine Hinweise und technische Daten: siehe Seite 4
Technische Daten LED's: siehe Seite 53/54

General Remarks and Technical Data

General remarks and technical data: see page 4
Technical data LEDs: see page 53/54

Spezifische Technische Daten

Gehäusewerkstoff: PBT UL94 schwarz

Specific Technical Data

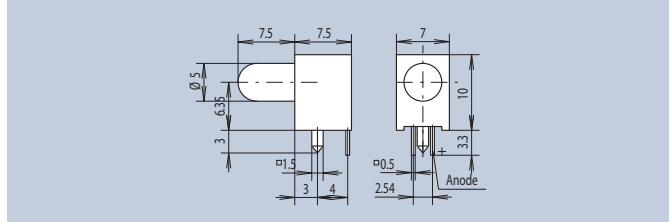
Housing Material: PBT UL94 black

Der angebrachte Fixierzapfen gibt zusätzlichen Halt auf der Leiterkarte.

The attached location pin provides additional stability on the circuit board.



| Farbe · Color | LED-Type | Art.-Nr. | |
|---------------|------------|----------|------------|
| | bright red | A5 | RTE 5104 R |
| | yellow | A7 | RTE 5104 Y |
| | green | A8 | RTE 5104 G |



Spezifische Technische Daten

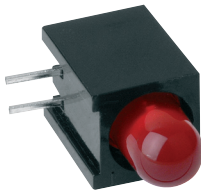
Gehäusewerkstoff: PC schwarz

Specific Technical Data

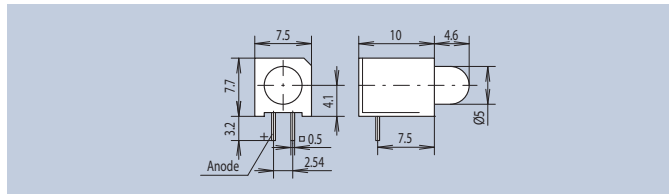
Housing Material: PC black

Das Bauelement kann aneinandergereiht werden. Die Achshöhe der LED beträgt 4,1mm (siehe stehende Variante Seite 18).

The component can be installed in series. The axis height of the LED is 4.1mm (see vertical type, page 18).



| Farbe · Color | LED-Type | Art.-Nr. | |
|---------------|---------------------|----------|-----------|
| | high efficiency red | A6 | 2355.2032 |
| | yellow | A7 | 2355.7032 |
| | green | A8 | 2355.8032 |

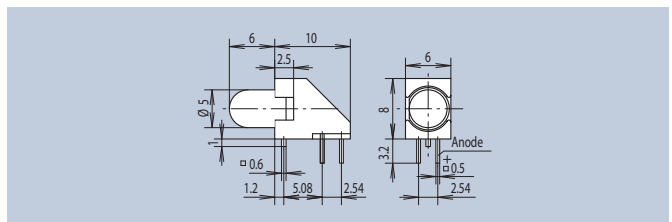


Die Achshöhe der LED beträgt 4mm. Es können mehrere Bauteile angereiht werden.

The axis height of the LED is 4mm. Several components can be installed in series.



| Farbe · Color | LED-Type | Art.-Nr. | |
|---------------|---------------------|----------|-----------|
| | high efficiency red | A6 | 2350.2031 |
| | yellow | A7 | 2350.7031 |
| | green | A8 | 2350.8031 |



Technische Daten THT LED's

Technical Data THT LEDs

| LED-Type | Emission Color | Wavelength λ (nm) dominant | Lense Color | Forward Voltage V_F (V) | | Luminous Intensity I_V (mcd) | | | at mA | Fwd. Current I_F max (mA) | Rev. Voltage V_R (V) | 2 ϕ (50% I_V) deg. |
|----------|-------------------------------|---------------------------------------|------------------|------------------------------|-----|-----------------------------------|-------|-----|----------|--------------------------------|---------------------------|----------------------------------|
| | | | | typ | max | min | typ | max | | | | |
| THT | | | | | | | | | | | | |
| A 1 | red | 660 | red diffused | 2,25 | 2,5 | 1 | 3 | - | 20 10 | 25 | 5 | 60 |
| A 2 | high efficiency red | 625 | red diffused | 2 | 2,5 | 8 | 20 | - | 20 10 | 30 | 5 | 60 |
| A 3 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 5 | 15 | - | 20 10 | 30 | 5 | 60 |
| A 4 | green | 568 | green diffused | 2,2 | 2,5 | 8 | 20 | - | 20 10 | 25 | 5 | 60 |
| A 5 | bright red | 660 | red diffused | 2,25 | 2,5 | 1,8 | 5 | - | 20 10 | 25 | 5 | 60 |
| A 6 | high efficiency red | 625 | red diffused | 2 | 2,5 | 8 | 45 | - | 20 10 | 30 | 5 | 60 |
| A 7 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 5 | 20 | - | 20 10 | 30 | 5 | 60 |
| A 8 | green | 568 | green diffused | 2 | 2,5 | 5 | 20 | - | 20 10 | 25 | 5 | 60 |
| A 9 | high efficiency red | 625 | red diffused | 2 | 2,5 | 0,7 | 3 | - | 2 20 | 30 | 5 | 60 |
| A 10 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 0,7 | 1,5 | - | 2 20 | 30 | 5 | 60 |
| A 11 | green | 568 | green diffused | 2,2 | 2,5 | 0,7 | 2 | - | 2 20 | 25 | 5 | 60 |
| A 12 | high efficiency red | 625 | red diffused | 2 | 2,5 | 0,7 | 5 | - | 2 20 | 30 | 5 | 60 |
| A 13 | yellow | 588 | yellow diffused | 1,85 | 2,5 | 0,7 | 2 | - | 2 | 30 | 5 | 60 |
| A 14 | green | 568 | green diffused | 2,2 | 2,5 | 0,7 | 2 | - | 2 20 | 25 | 5 | 60 |
| A 19 | super-red | 628 | red clear | 2 | 2,5 | 11,2 | - | 71 | 10 | 40 | 12 | 40 |
| A 20 | yellow | 587 | yellow clear | 2 | 2,5 | 11,2 | - | 71 | 10 | 40 | 12 | 40 |
| A 21 | green | 570 | green clear | 2 | 2,5 | 18 | - | 112 | 10 | 40 | 12 | 40 |
| A 22 | bright red | 660 | red diffused | 2,25 | 2,5 | 0,7 | 1,6 | - | 20 10 | 25 | 5 | 70 |
| A 23 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 5 | 8 | - | 20 10 | 30 | 5 | 70 |
| A 24 | green | 568 | green diffused | 2,2 | 2,5 | 5 | 10 | - | 20 10 | 25 | 5 | 70 |
| A 25 | red | 660 | red diffused | 2,25 | 2,5 | 0,7 | 2 | - | 20 10 | 25 | 5 | 60 |
| A 27 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 3 | 10 | - | 20 10 | 30 | 5 | 60 |
| A 28 | green | 568 | green diffused | 2,2 | 2,5 | 5 | 15 | - | 20 10 | 25 | 5 | 60 |
| A 29 | high efficiency red | 625 | red diffused | 2 | 2,5 | 36 | 100 | - | 20 | 30 | 5 | 30 |
| A 30 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 18 | 50 | - | 20 | 30 | 5 | 30 |
| A 31 | green | 568 | green diffused | 2,2 | 2,5 | 18 | 60 | - | 20 | 25 | 5 | 30 |
| A 32 | high efficiency red | 625 | red diffused | 2 | 2,5 | 36 | 100 | - | 20 | 30 | 5 | 30 |
| A 33 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 10 | 50 | - | 20 | 30 | 5 | 30 |
| A 34 | green | 568 | green diffused | 2,2 | 2,5 | 18 | 60 | - | 20 | 25 | 5 | 30 |
| A 35 | high efficiency red | 625 | red diffused | 2 | 2,5 | 36 | 80 | - | 20 | 30 | 5 | 50 |
| A 36 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 10 | 30 | - | 20 | 30 | 5 | 50 |
| A 37 | green | 568 | green diffused | 2,2 | 2,5 | 10 | 40 | - | 20 | 25 | 5 | 50 |
| A 38 | bright red | 660 | red diffused | 2,25 | 2,5 | 0,4 | 1 | - | 20 10 | 25 | 5 | 100 |
| A 40 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 1 | 4 | - | 20 10 | 30 | 5 | 100 |
| A 41 | green | 568 | green diffused | 2,2 | 2,5 | 1 | 4 | - | 20 10 | 25 | 5 | 100 |
| A 42 | bright red | 660 | red diffused | 2,25 | 2,5 | 0,4 | 1 | - | 20 10 | 25 | 5 | 100 |
| A 44 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 0,7 | 3 | - | 20 10 | 30 | 5 | 100 |
| A 45 | green | 568 | green diffused | 2,2 | 2,5 | 1 | 4 | - | 20 10 | 25 | 5 | 100 |
| A 46 | high efficiency red | 625 | red diffused | 2 | 2,5 | 3 | 5 | - | 20 10 | 30 | 5 | 110 |
| A 47 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 1 | 4 | - | 20 10 | 30 | 5 | 110 |
| A 48 | green | 568 | green diffused | 2,2 | 2,5 | 1,8 | 5 | - | 20 10 | 25 | 5 | 110 |
| A 49 | high efficiency red/ green | 625/568 | white diffused | 2/2,2 | 2,5 | 7 | 20/16 | - | 20 | 30/25 | - | 60 |
| A 51 | blue | 430 | blue transparent | 3,8 | 4,5 | 18 | 100 | - | 20 | 30 | 5 | 50 |
| A 52 | blue | 466 | blue transparent | 3,8 | 4,5 | 70 | 200 | - | 20 | 30 | 5 | 30 |

Technische Daten THT LED's

Technical Data THT LEDs

| LED-Type | Emission Color | Wavelength λ (nm) dominant | Lense Color | Forward Voltage V_F (V) | | Luminous Intensity I_V (mcd) | | | at mA | Fwd. Current I_F max (mA) | Rev. Voltage V_R (V) | 2ϕ (50% I_V) deg. |
|--------------|-------------------------------|---------------------------------------|-------------------------|------------------------------|-----|-----------------------------------|-------|------|----------|--------------------------------|---------------------------|---------------------------------|
| | | | | typ | max | min | typ | max | | | | |
| THT | | | | | | | | | | | | |
| A 60 | high efficiency red | 625 | red diffused | 5,7 | 7,5 | 18 | 61,6 | - | 20 | 60 | 15 | 120 |
| A 61 | yellow | 588 | yellow diffused | 6 | 7,5 | 70 | 372 | - | 20 | 60 | 15 | 120 |
| A 62 | green | 568 | green diffused | 6 | 7,5 | 18 | 53,3 | - | 20 | 50 | 15 | 120 |
| A 69 | super-red | 628 | red diffused | 2 | 2,5 | 7,1 | - | 18 | 10 | 40 | 12 | 50 |
| A 70 | yellow | 587 | yellow diffused | 2 | 2,5 | 7,1 | - | 18 | 10 | 40 | 12 | 50 |
| A 71 | green | 570 | green diffused | 2 | 2,5 | 7,1 | - | 18 | 10 | 40 | 12 | 50 |
| A 72 | super-red | 628 | red diffused | 2 | 2,5 | 7,1 | - | 18 | 10 | 40 | 12 | 70 |
| A 76 | high efficiency red/ green | 625/568 | white diffused | 2/2,2 | 2,5 | 4/2,6 | 10/8 | - | 20 | 30/25 | - | 70 |
| A 77 | super bright red | 640 | red diffused | 1,85 | 2,5 | 280 | 400 | - | 10 | 30 | 5 | 60 |
| A 78 | yellow | 588 | yellow transpa- rent | 2,1 | 2,5 | 18 | 40 | - | 20 | 30 | 5 | 30 |
| A 79 | green | 568 | green transpa- rent | 2,2 | 2,5 | 18 | 60 | - | 20 | 25 | 5 | 30 |
| C 5 | orange red/green | 619/564 | white diffused | 2/2,4 | 3 | 1 | 2,5 | - | 20 | 30 | 6 | 60 |
| C 12 | red | 630 | red diffused | 2 | 3 | 4 | - | 32 | 20 | 20 | 6 | 40 |
| C 13 | yellow | 588 | yellow diffused | 2,4 | 3 | 2,5 | 8 | 12,5 | 20 | 30 | 6 | 40 |
| C 14 | green | 568 | green diffused | 2,4 | 3 | 4 | 12 | 20 | 20 | 30 | 6 | 40 |
| E 3 | high efficiency red/ green | 625/568 | white diffused | 2/2,2 | 2,5 | 10 | 50/30 | - | 20 | 30/25 | 5 | 60 |
| G 1 | bright red | 660 | red diffused | 2,25 | 2,5 | 0,4 | 0,8 | - | 20 | 25 | 5 | 40 |
| G 2 | yellow | 588 | yellow diffused | 2,1 | 2,5 | 2,6 | 10 | - | 20 | 30 | 5 | 40 |
| G 3 | super bright green | 568 | green diffused | 2,2 | 2,5 | 2,6 | 10 | - | 20 | 25 | 5 | 40 |
| K 1 | super-red | 635 (peak) | red diffused | 2 | 2,8 | - | 12 | - | 20 | 30 | 5 | - |
| K 2 | yellow | 585 (peak) | yellow diffused | 2 | 2,8 | - | 12 | - | 20 | 30 | 5 | - |
| K 3 | green | 565 (peak) | green diffused | 2,1 | 2,8 | - | 15 | - | 20 | 30 | 5 | - |
| M 2 | white | - | colorless clear | 3,6 | 4 | 2400 | - | 6800 | 20 | 30 | 5 | 20 |
| W 1 | white | - | colorless clear | 3,1 | 3,7 | 180 | - | 450 | 10 | 20 | 5 | 40 |
| Argus | | | | | | | | | | | | |
| A 15 | super-red | 628 | red clear | 2,1 | 2,5 | 45 | - | 71 | 15 | 40 | 5 | - |