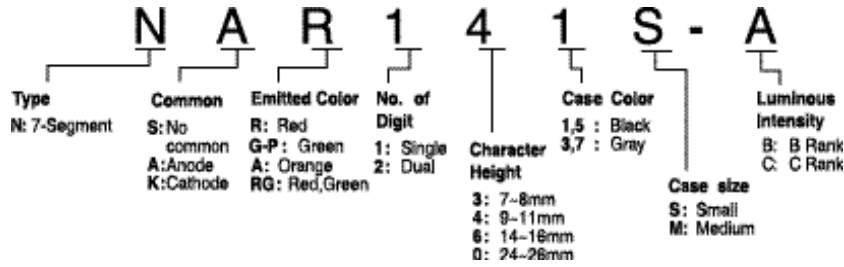


# SUPER BRIGHT LED NUMERIC DISPLAY (SEVEN SEGMENT DISPLAY)

Stanley's Numeric Displays which incorporate super-bright LEDs produce vivid, brilliant displays. Available colors are red, pure green, green, yellow and orange. Display types include segment type (character heights 7.5mm to 25mm) and the alpha-numeric type (character heights 25mm and 51mm). These are suitable for dynamic drive due to the low-current drive characteristics.

## Description of Part Number



## Characteristics by Color

Ta=25°C

| Size       | Part No.        | Material Emitted Color | Chips/Segment | Absolute Maximum Rating |                    |                          |                    |                     |                   | Electro-Optical Characteristics |      |     |                    |     |               | Derating ΔIF |       |
|------------|-----------------|------------------------|---------------|-------------------------|--------------------|--------------------------|--------------------|---------------------|-------------------|---------------------------------|------|-----|--------------------|-----|---------------|--------------|-------|
|            |                 |                        |               | Power Dissipation Pd    | Forward Current IF | Peak Forward Current IFM | Reverse Voltage VR | Operating Temp Topr | Storage Temp Tstg | Forward Voltage VF              |      |     | Reverse Current IR |     | Wavelength λp |              |       |
|            |                 |                        |               |                         |                    |                          |                    |                     |                   | TYP.                            | MAX. | IF  | MAX.               | VR  | TYP           | IF           |       |
| 7.5        | N□R13□          | GaP(Red)               | 1             | 37.5                    | 15                 | 60                       | 4                  | -30~+85             | -30~+85           | 2.0                             | 2.5  | 10  | 100                | 4   | 700           | 10           | 0.25  |
|            | N□R13□S,ME      | GaAlAs(Pbd)            | 1             | 40                      | 20                 | 80                       | 4                  | -30~+85             | -30~+85           | 1.7                             | 2.0  | 10  | 100                | 4   | 660           | 10           | 0.33  |
|            | N□G13□P,SP,M,P  | GaP(Green)             | 1             | 48                      | 20                 | 80                       | 4                  | -30~+85             | -30~+85           | 2.0                             | 2.4  | 10  | 100                | 4   | 565           | 10           | 0.33  |
|            | N□13□S,M        | GaAsP(Orange)          | 1             | 48                      | 20                 | 80                       | 4                  | -30~+85             | -30~+85           | 2.0                             | 2.4  | 10  | 100                | 4   | 605           | 10           | 0.33  |
| 10         | N□R14□,N□R24    | GaAlAs(Pbd)            | 1             | 60                      | 30                 | 120                      | 4                  | -40~+85             | -40~+85           | 1.7                             | 2.0  | 20  | 100                | 4   | 660           | 20           | 0.41  |
|            | N□R14□S         | GaAlAs(Pbd)            | 1             | 40                      | 20                 | 80                       | 4                  | -30~+85             | -30~+85           | 1.7                             | 2.0  | 10  | 100                | 4   | 660           | 10           | 0.33  |
|            | N□G14□P,N□G24P  | GaP(Green)             | 1             | 63                      | 25                 | 100                      | 4                  | -40~+85             | -40~+85           | 2.2                             | 2.5  | 20  | 100                | 4   | 565           | 20           | 0.34  |
|            | N□G14□SP        | GaP(Green)             | 1             | 48                      | 20                 | 80                       | 4                  | -40~+85             | -30~+85           | 2.0                             | 2.4  | 10  | 100                | 4   | 565           | 10           | 0.33  |
|            | N□A14□,N□A24□   | GaAsP(Orange)          | 1             | 63                      | 25                 | 100                      | 4                  | -40~+85             | -40~+85           | 2.2                             | 2.5  | 20  | 100                | 4   | 605           | 20           | 0.34  |
|            | N□A14□S         | GaAsP(Orange)          | 1             | 48                      | 20                 | 80                       | 4                  | -30~+85             | -30~+85           | 2.0                             | 2.4  | 10  | 100                | 4   | 605           | 10           | 0.33  |
|            | NARG14□         | GaAlAs(Pbd)            | 1             | 36                      | 15                 | 70                       | 4                  | -30~+70             | -30~+80           | 1.7                             | 2.0  | 10  | 20                 | 4   | 660           | 10           | 0.22  |
|            |                 | GaP(Green)             | 1             | 36                      | 15                 | 70                       | 4                  | -30~+70             | -30~+80           | 2.0                             | 2.4  | 10  | 20                 | 4   | 570           | 10           | 0.22  |
| 15         | N□R16□,N□R26□   | GaAlAs(Pbd)            | 1             | 60                      | 30                 | 120                      | 4                  | -40~+85             | -40~+85           | 1.7                             | 2.0  | 20  | 100                | 4   | 660           | 20           | 0.41  |
|            | N□G16□P,N□G26□P | GaP(Green)             | 1             | 63                      | 25                 | 100                      | 4                  | -40~+85             | -40~+85           | 2.2                             | 2.5  | 20  | 100                | 4   | 565           | 20           | 0.34  |
|            | N□A16□,N□A26□   | GaAsP(Orange)          | 1             | 63                      | 25                 | 100                      | 4                  | -40~+85             | -40~+85           | 2.2                             | 2.5  | 20  | 100                | 4   | 605           | 20           | 0.34  |
|            | NARG16□         | GaAlAs(Pbd)            | 1             | 36                      | 15                 | 70                       | 4                  | -30~+70             | -30~+80           | 1.7                             | 2.0  | 10  | 20                 | 4   | 660           | 10           | 0.22  |
| GaP(Green) |                 | 1                      | 36            | 15                      | 70                 | 4                        | -30~+70            | -30~+80             | 2.0               | 2.4                             | 10   | 20  | 4                  | 570 | 10            | 0.22         |       |
| 25         | N□R10□          | GaAlAs(Pbd)            | 2             | 120                     | 30                 | 120                      | 4                  | -20~+85             | -20~+85           | 3.4                             | 4.0  | 20  | 100                | 8   | 660           | 20           | 0.41  |
|            | N□G10□P         | GaP(Green)             | 2             | 126                     | 25                 | 100                      | 4                  | -20~+85             | -20~+85           | 4.4                             | 5.0  | 20  | 100                | 8   | 565           | 20           | 0.34  |
|            | N□A10□          | GaAsP(Orange)          | 2             | 126                     | 25                 | 100                      | 4                  | -20~+85             | -20~+85           | 4.4                             | 5.0  | 20  | 100                | 8   | 605           | 20           | 0.34  |
|            | NARG10□         | GaAlAs(Pbd)            | 2             | 80                      | 20                 | 40                       | 4                  | -30~+70             | -30~+80           | 3.4                             | 4.0  | 10  | 100                | 4   | 660           | 10           | 0.33  |
| GaP(Green) |                 | 2                      | 96            | 20                      | 40                 | 4                        | -30~+70            | -30~+80             | 4.0               | 4.8                             | 10   | 100 | 4                  | 570 | 10            | 0.33         |       |
| mm         | Units           |                        |               | mW                      | mA                 | mA                       | V                  | °C                  |                   | V                               | mA   | μA  | V                  |     | nm            | mA           | mA/°C |

- Number of chips per segment
- Ratings and specifications are for one segment
- When both colors of a bi-color LED are driven simultaneously, the rating of NARG types are the total of the Pd, 1F and 1FM values.
- ❖1 : NARG 10□ type in dynamic drive has a duty cycle of 1/2 and f=500Hz and the others have a duty cycle of 1/5 and f=1 kHz.

# SUPER BRIGHT LED NUMERIC DISPLAY

## 7.5mm Type

Ta=25°C

| Case Size (WXH)   | Shape                  | Part No.       |                | Emitted Color | Luminous Intensity Iv |        |      |      |        |      | fig. |                |
|-------------------|------------------------|----------------|----------------|---------------|-----------------------|--------|------|------|--------|------|------|----------------|
|                   |                        | Anode Common   | Cathode Common |               | MIN.                  | Rank B | TYP. | MIN. | Rank C | TYP. |      | I <sub>F</sub> |
| 7.0<br>X<br>11.0  | Arrow feather type<br> | NAR131S/133S   | NKR131S/133S   | Red           | 1.4                   |        | 2.8  | 2.8  |        | 5.6  | 10   | 1              |
|                   |                        | NAR131SP/133SP | NKG131SP/133SP | Green         | 1                     |        | 2    | —    |        | —    | 10   |                |
|                   |                        | NAA131S/133S   | NKA131S/133S   | Orange        | 0.6                   |        | 1.2  | —    |        | —    | 10   |                |
| 10.0<br>X<br>15.0 | Arrow feather type<br> | NAR131ME/133ME | NKR131ME/133ME | Red           | 1.2                   |        | 2.4  | —    |        | —    | 10   | 2              |
|                   |                        | NAG131MP/133MP | NKG131MP/133MP | Green         | 0.6                   |        | 1.2  | —    |        | —    | 10   |                |
|                   |                        | NAA131M/133M   | NKA131M/133M   | Orange        | 0.8                   |        | 1.6  | —    |        | —    | 10   |                |
| 10.0<br>X<br>19.0 | Arrow feather type<br> | NAR131/133     | NKR131/133     | Red           | 0.3                   |        | 0.6  | —    |        | —    | 10   | 3              |
|                   |                        | NAG131P/133P   | NKG131P/133P   | Green         | 0.6                   |        | 1.2  | —    |        | —    | 10   |                |
|                   |                        | NAA131/133     | NKA131/133     | Orange        | 0.8                   |        | 1.6  | —    |        | —    | 10   |                |
| mm                |                        | Units          |                |               | mcd                   |        |      |      |        |      | mA   |                |

## Package Dimensions

unit : mm

Tolerance : ±0.25mm

fig.1

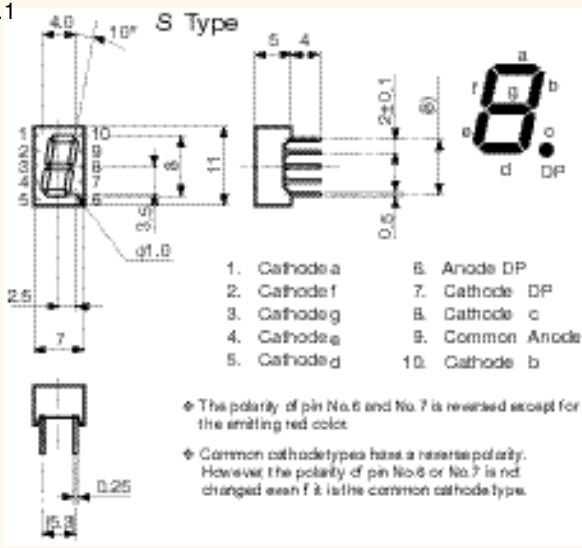


fig.2

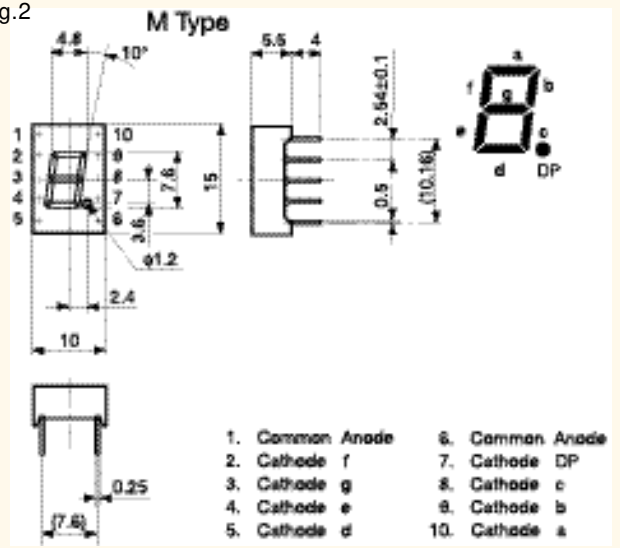
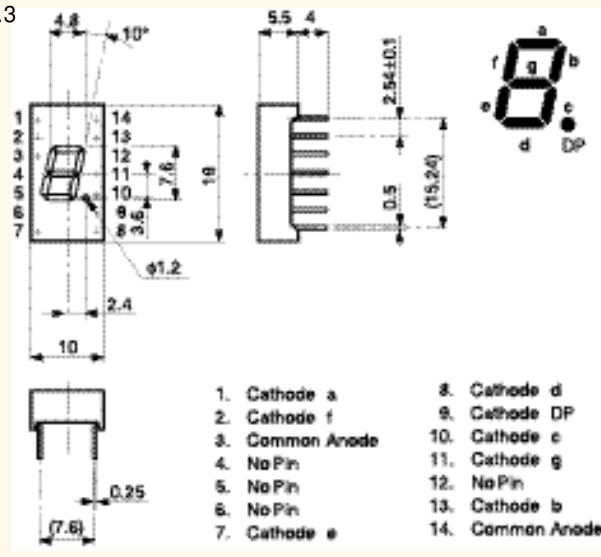


fig.3



# SUPER BRIGHT LED NUMERIC DISPLAY

## 10mm Type

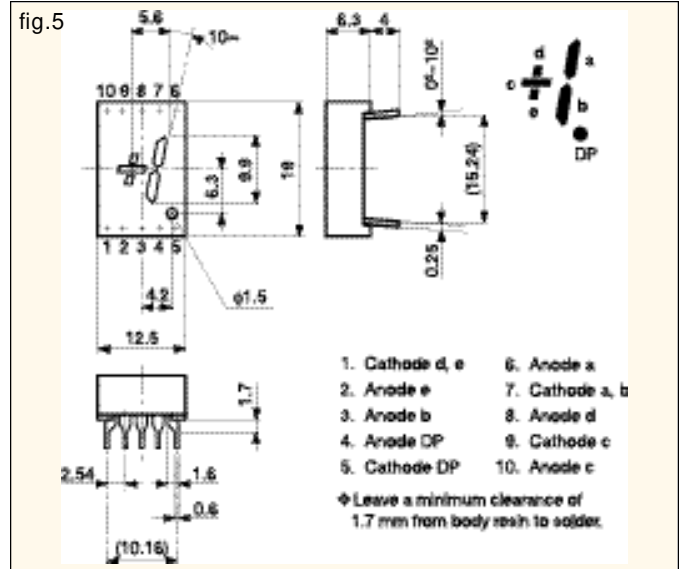
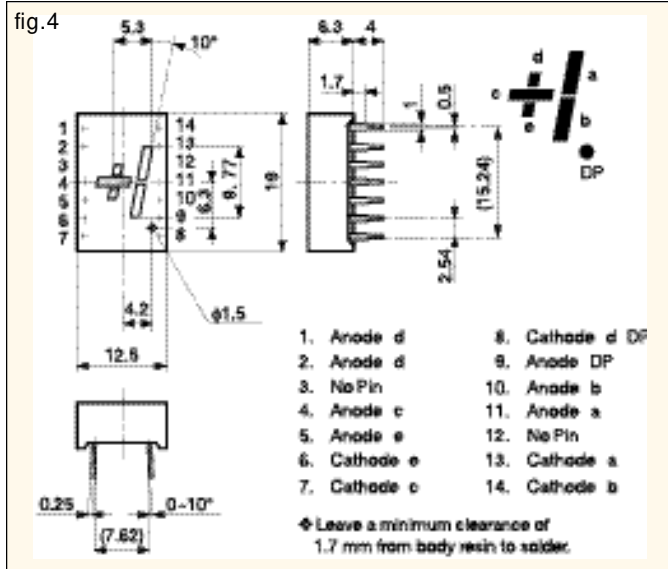
Ta=25°C

| Case Size (WXH) | Shape              | Part No.     | Emitted Color | Luminous Intensity Iv |        |      |      |        |      | fig. |
|-----------------|--------------------|--------------|---------------|-----------------------|--------|------|------|--------|------|------|
|                 |                    |              |               | MIN.                  | Rank B | TYP. | MIN. | Rank C | TYP. |      |
| 12.5 X 19.0     | Square shape type  | NSR141/143   | Red           | 4                     | 8      | 8    | 11   | 20     | 4    |      |
|                 |                    | NSG141P/143P | Green         | 1                     | 2      | —    | —    | 20     |      |      |
|                 |                    | NSA141/143   | Orange        | 3                     | 6      | —    | —    | 20     |      |      |
| 12.5 X 19.0     | Arrow feather type | NSR145/147   | Red           | 3.2                   | 6.4    | 6.4  | 8.8  | 20     | 5    |      |
|                 |                    | NSG145P/147P | Green         | 0.8                   | 1.6    | —    | —    | 20     |      |      |
|                 |                    | NSA145/147   | Orange        | 2.4                   | 4.8    | —    | —    | 20     |      |      |
| mm              |                    | Units        |               | mcd                   |        |      |      |        |      | mA   |

## Package Dimensions

unit : mm




Tolerance : ±0.25mm



# SUPER BRIGHT LED NUMERIC DISPLAY

## 10mm Type

Ta=25°C

| Case Size (WXH) | Shape   | Part No.        |                 | Emitted Color | Luminous Intensity I <sub>v</sub> |             |             |             |                | fig. |
|-----------------|---|-----------------|-----------------|---------------|-----------------------------------|-------------|-------------|-------------|----------------|------|
|                 |   | Anode Common    | Cathode Common  |               | MIN.                              | Rank B TYP. | Rank C MIN. | Rank C TYP. | I <sub>F</sub> |      |
| 9.6 X 13.0      | Arrow feather type<br> | NAR141S/ 143S   | NKR141S/ 143S   | Red           | 1.6                               | 3.2         | 3.2         | 6.4         | 10             | 6    |
|                 |   | NAR141SP/ 143SP | NKG141SP/ 143SP | Green         | 0.6                               | 1.2         | —           | —           | 10             |      |
|                 |   | NAA141S/ 143S   | NKA141S/ 143S   | Orange        | 0.8                               | 1.6         | —           | —           | 10             |      |
| 12.5 X 19.0     | Square shape type<br>  | NAR141/ 143     | NKR141/ 143     | Red           | 4                                 | 8           | 8           | 11          | 20             | 7    |
|                 |   | NAG141P/ 143P   | NKG141P/ 143P   | Green         | 1                                 | 2           | —           | —           | 20             |      |
|                 |   | NAA141/ 143     | NKA141/ 143     | Orange        | 3                                 | 6           | —           | —           | 20             |      |
| 12.5 X 19.0     | Arrow feather type<br> | NAR145/ 147     | NKR145/ 147     | Red           | 3.2                               | 6.4         | 6.4         | 8.8         | 20             | 8    |
|                 |   | NAG145P/ 147P   | NKG145P/ 147P   | Green         | 0.8                               | 1.6         | —           | —           | 20             |      |
|                 |   | NAA145/ 147     | NKA145/ 147     | Orange        | 2.4                               | 4.8         | —           | —           | 20             |      |
| mm              |   | Units           |                 |               | mcd                               |             |             |             |                | mA   |

## Package Dimensions

unit : mm

Tolerance : ±0.25mm

fig.6

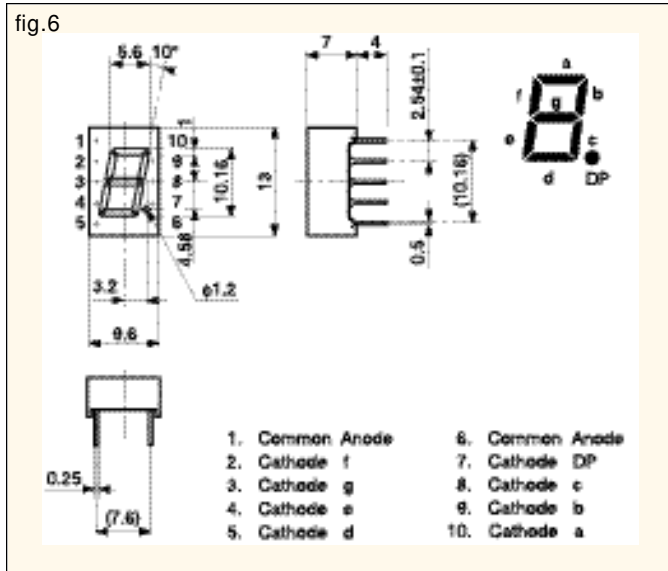


fig.7

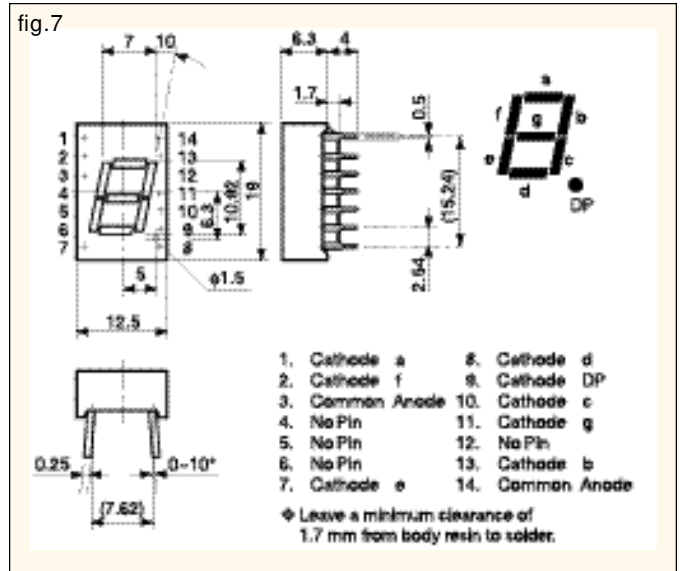
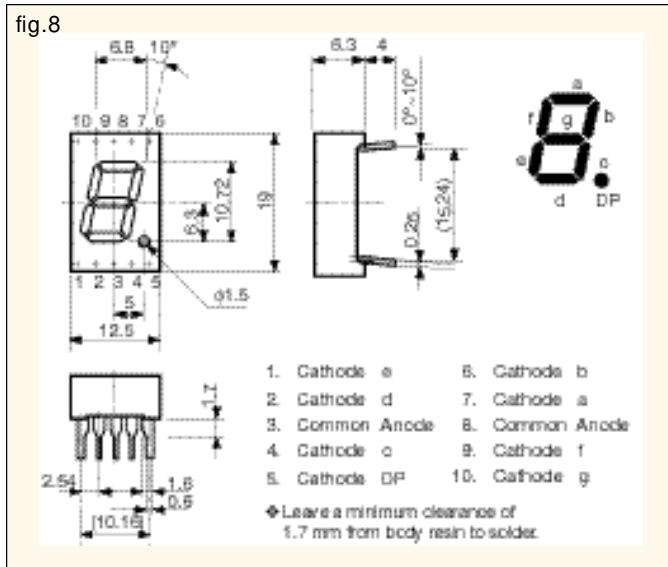


fig.8



• Common cathode types shown in fig. 6, 7, and 8 have a reverse polarity.



# SUPER BRIGHT LED NUMERIC DISPLAY

## 10mm Type

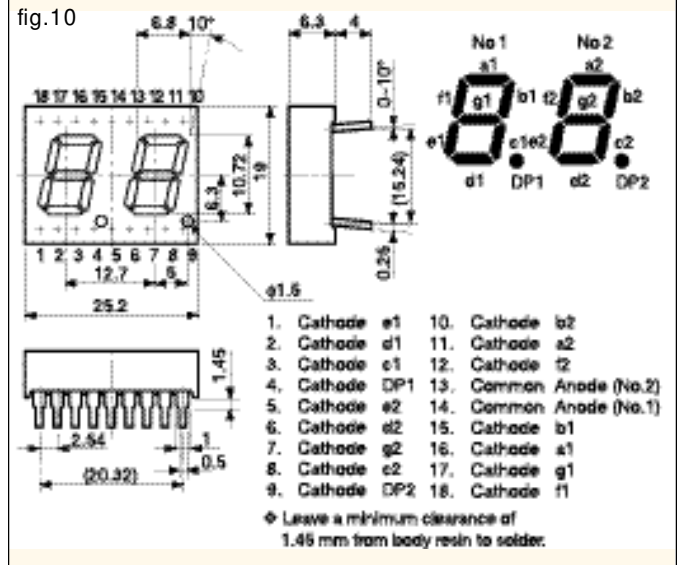
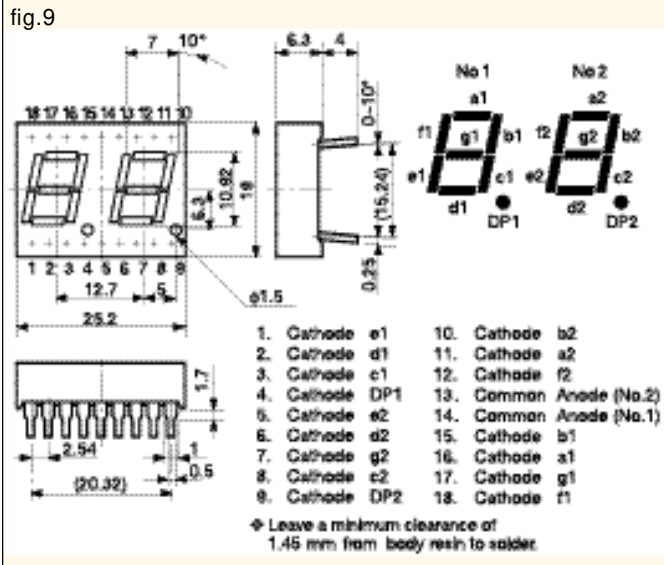
Ta=25°C

| Case Size (WXH) | Shape              | Part No.     |                | Emitted Color | Luminous Intensity Iv |        |      |      |        | fig. |      |    |
|-----------------|--------------------|--------------|----------------|---------------|-----------------------|--------|------|------|--------|------|------|----|
|                 |                    | Anode Common | Cathode Common |               | MIN.                  | Rank B | TYP. | MIN. | Rank C |      | TYP. | IF |
| 25.2 X 19.0     | Square shape type  | NAR241/243   | NKR241/243     | Red           | 4                     |        | 8    | 8    |        | 11   | 20   | 9  |
|                 |                    | NAG241P/243P | NKG241P/243P   | Green         | 1                     |        | 2    | —    |        | —    | 20   |    |
|                 |                    | NAA241/243   | NKA241/243     | Orange        | 3                     |        | 6    | —    |        | —    | 20   |    |
| 25.2 X 19.0     | Arrow feather type | NAR245/247   | NKR245/247     | Red           | 3.2                   |        | 6.4  | 6.4  |        | 8.8  | 20   | 10 |
|                 |                    | NAG245P/247P | NKG245P/247P   | Green         | 0.8                   |        | 1.6  | —    |        | —    | 20   |    |
|                 |                    | NAA245/247   | NKA245/247     | Orange        | 2.4                   |        | 4.8  | —    |        | —    | 20   |    |
| mm              |                    | Units        |                |               | mcd                   |        |      |      |        | mA   |      |    |

## Package Dimensions

unit : mm

Tolerance : ±0.25mm



- Common cathode types shown in fig. 9 and 10 have a reverse polarity.

# SUPER BRIGHT LED NUMERIC DISPLAY

## 15mm Type

Ta=25°C

| Case Size (WXH)   | Shape                  | Part No.     |                | Emitted Color | Luminous Intensity Iv |        |      |      |        | fig. |
|-------------------|------------------------|--------------|----------------|---------------|-----------------------|--------|------|------|--------|------|
|                   |                        | Anode Common | Cathode Common |               | MIN.                  | Rank B | TYP. | MIN. | Rank C |      |
| 12.5<br>X<br>19.0 | Arrow feather type<br> | NSR161/163   |                | Red           | 6                     | 12     | 12   | 15   | 20     | 11   |
|                   |                        | NSG161P/163P |                | Green         | 2                     | 4      | —    | —    | 20     |      |
|                   |                        | NSA161/163   |                | Orange        | 4                     | 8      | —    | —    | 20     |      |
| 12.5<br>X<br>19.0 | Arrow feather type<br> | NAR161/163   | NKR161/163     | Red           | 6                     | 12     | 12   | 15   | 20     | 12   |
|                   |                        | NAG161P/163P | NKG161P/163P   | Green         | 2                     | 4      | —    | —    | 20     |      |
|                   |                        | NAA161/163   | NKA161/163     | Orange        | 4                     | 8      | —    | —    | 20     |      |
| 25.2<br>X<br>19.0 | Arrow feather type<br> | NAR261/263   | NKR261/263     | Red           | 6                     | 12     | 12   | 15   | 20     | 13   |
|                   |                        | NAG261P/263P | NKG261P/263P   | Green         | 2                     | 4      | —    | —    | 20     |      |
|                   |                        | NAA261/263   | NKA261/263     | Orange        | 4                     | 8      | —    | —    | 20     |      |
| mm                |                        | Units        |                |               | mod                   |        |      |      |        | mA   |

## Package Dimensions

unit : mm

Tolerance : ±0.25mm

fig.11

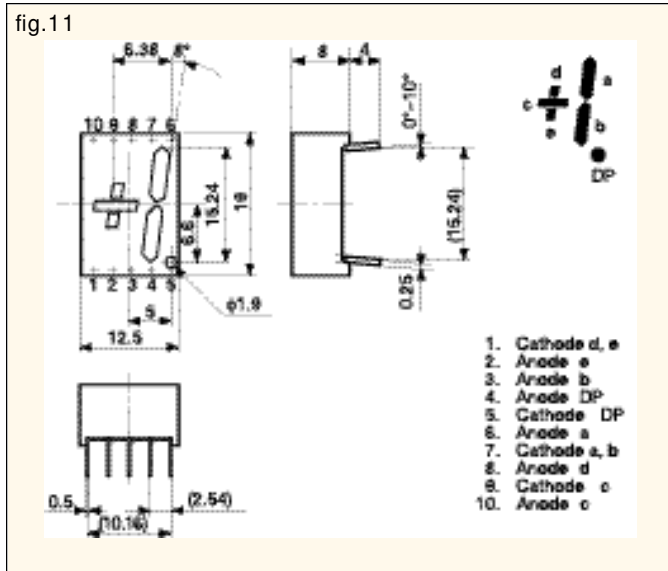


fig.12

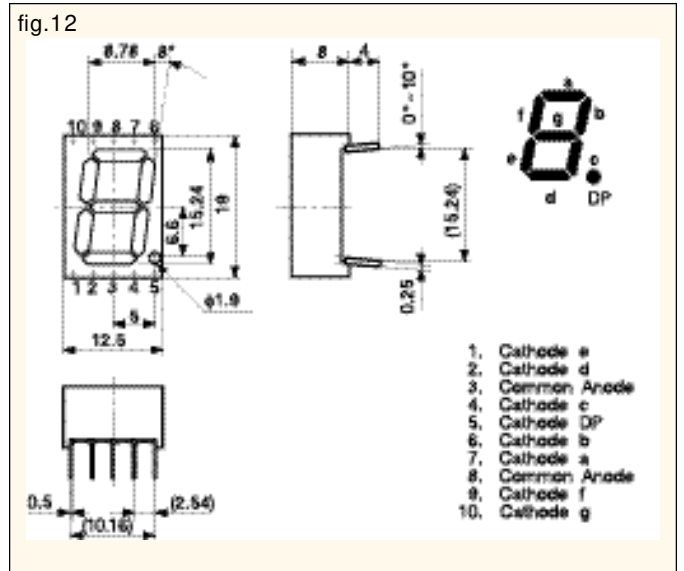
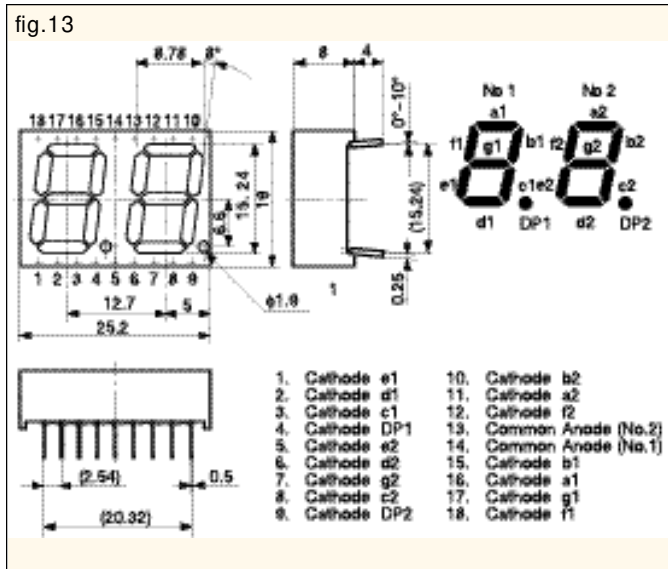


fig.13






• Common cathode types shown in fig. 12 and 13 have a reverse polarity.

# SUPER BRIGHT LED NUMERIC DISPLAY

## 25mm Type

Ta=25°C

| Case Size (WXH) | Shape   | Part No.     |                | Emitted Color | Luminous Intensity I <sub>v</sub> |      |        |      |                | fig. |
|-----------------|---|--------------|----------------|---------------|-----------------------------------|------|--------|------|----------------|------|
|                 |   | Anode Common | Cathode Common |               | Rank B                            |      | Rank C |      | I <sub>F</sub> |      |
|                 |   |              |                |               | MIN.                              | TYP. | MIN.   | TYP. |                |      |
| 22.8 X 33.0     | Square shape type<br>  | NSR101/103   |                | Red           | 10                                | 20   | 20     | 25   | 20             | 14   |
|                 |   | NSG101P/103P |                | Green         | 4                                 | 8    | —      | —    | 20             |      |
|                 |   | NSA101/103   |                | Orange        | 8                                 | 16   | —      | —    | 20             |      |
| 22.8 X 33.0     | Square shape type<br>  | NAR101/103   | NKR101/103     | Red           | 10                                | 20   | 20     | 25   | 20             | 15   |
|                 |   | NAG101P/103P | NKG101P/103P   | Green         | 4                                 | 8    | —      | —    | 20             |      |
|                 |   | NAA101/103   | NKA101/103     | Orange        | 8                                 | 16   | —      | —    | 20             |      |
| 22.8 X 33.0     | Arrow feather type<br> | NAR105/107   | NKR105/107     | Red           | 10                                | 20   | 20     | 25   | 20             | 16   |
|                 |   | NAG105P/107P | NKG105P/107P   | Green         | 4                                 | 8    | —      | —    | 20             |      |
|                 |   | NAA105/107   | NKA105/107     | Orange        | 8                                 | 16   | —      | —    | 20             |      |
| mm              |   | Units        |                |               | mcd                               |      |        |      |                | mA   |

## Package Dimensions

unit : mm

Tolerance : ±0.25mm

fig.14

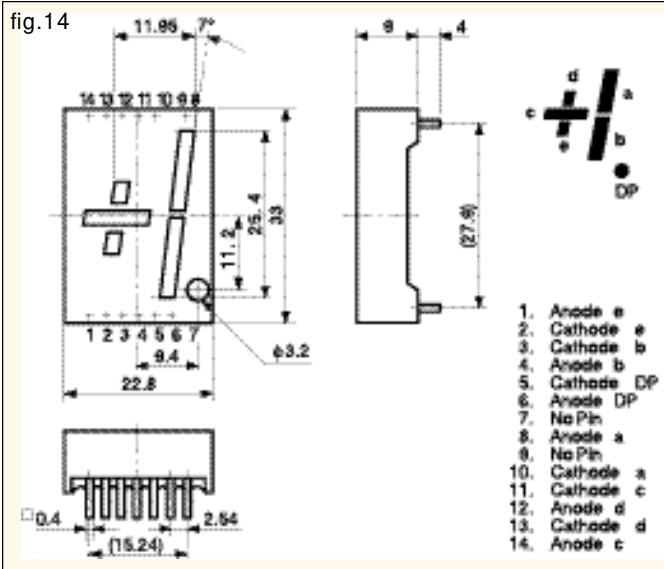


fig.15

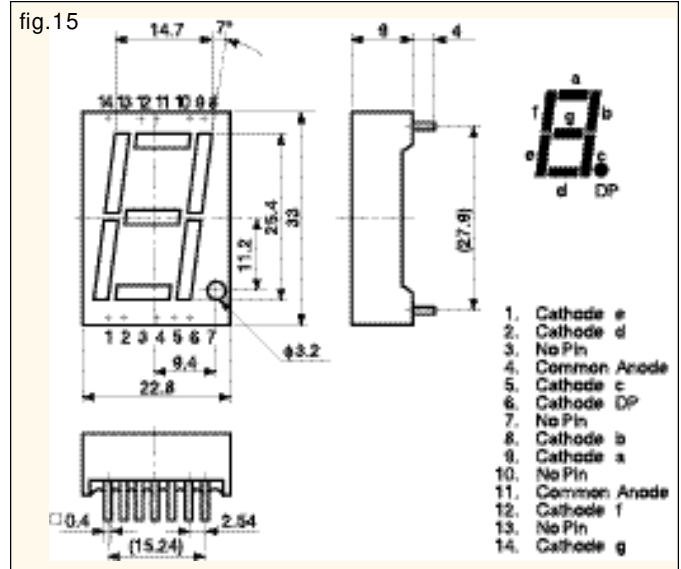
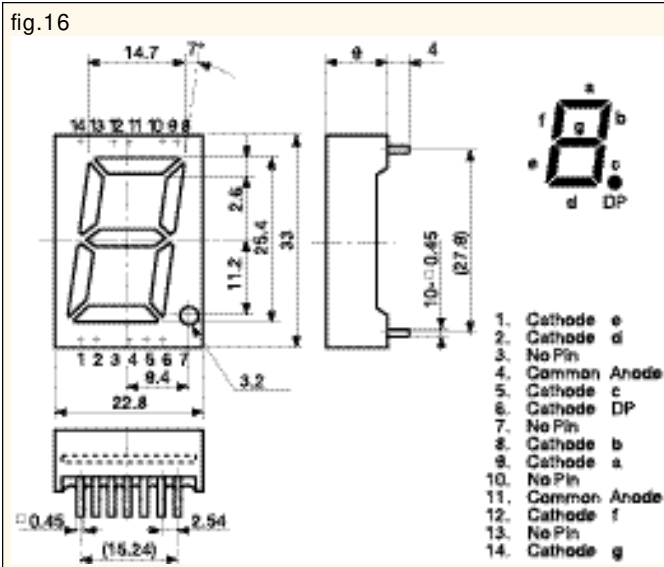


fig.16






• Common cathode types shown in fig. 15 and 16 have a reverse polarity.

# SUPER BRIGHT LED NUMERIC DISPLAY

## Bi-color LED Numeric Displays 10/15/25mm TYPE

Ta=25°C

| Case Size (WXH)   | Shape   | Part No.     |                | Emitted Color | Luminous Intensity Iv |      |                | fig. |
|-------------------|---|--------------|----------------|---------------|-----------------------|------|----------------|------|
|                   |   | Anode Common | Cathode Common |               | MIN.                  | TYP. | I <sub>F</sub> |      |
| 10.0<br>X<br>19.0 | Arrow feather type<br> | NARG141/143  | NKRK141/143    | Red           | 1.2                   | 2.4  | 10             | 17   |
|                   |   |              |                | Green         | 1.2                   | 2.4  | 10             |      |
| 12.5<br>X<br>19.0 | Arrow feather type<br> | NARG161/163  | NKRK161/163    | Red           | 1.2                   | 2.4  | 10             | 18   |
|                   |   |              |                | Green         | 1.2                   | 2.4  | 10             |      |
| 22.8<br>X<br>33.0 | Arrow feather type<br> | NARG105/107  |                | Red           | 2                     | 4    | 10             | 19   |
|                   |   |              |                | Green         | 2                     | 4    | 10             |      |
| mm                |   | Units        |                |               | mcd                   |      | mA             |      |

## Package Dimensions

unit : mm

Tolerance : ±0.25mm

fig.17

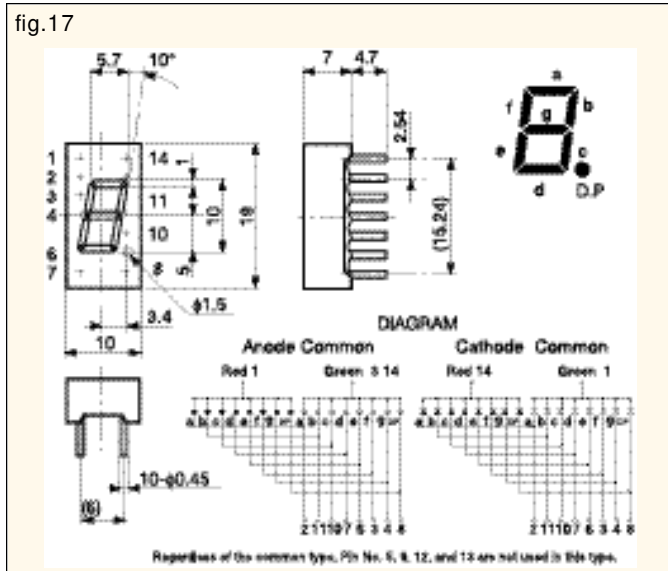


fig.18

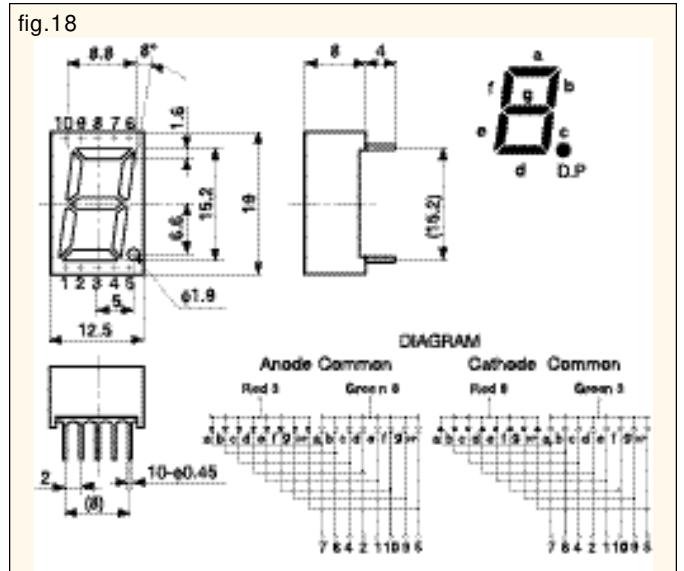


fig.19

