



Square Shape Type 10mm

### ■ Absolute Maximum Ratings

 $T_a = 25^\circ\text{C}$ 

|                      |      | Red       | Green     | Orange    | Unit  |
|----------------------|------|-----------|-----------|-----------|-------|
|                      |      | NAR / NKR | NAG / NKG | NAA / NKA |       |
| Power Dissipation    | Pb   | 60        | 63        | 63        | mW    |
| Forward Current      | IF   | 30        | 25        | 25        | mA    |
| Peak Forward Current | IFM  | 120       | 100       | 100       | mA    |
| Reverse Voltage      | VR   | 4         | 4         | 4         | V     |
| Operating Temp.      | Topr | -40~+85   | -40~+85   | -40~+85   | °C    |
| Storage Temp.        | Tstg | -40~+85   | -40~+85   | -40~+85   | °C    |
| Derating *           | ΔIF  | 0.41      | 0.34      | 0.34      | mA/°C |

\* The current derating for operation applies when temperature is above 25°C.

- IFM Condition :  $t_w \leq 1\text{msec}$ , Duty  $\leq 1/20$

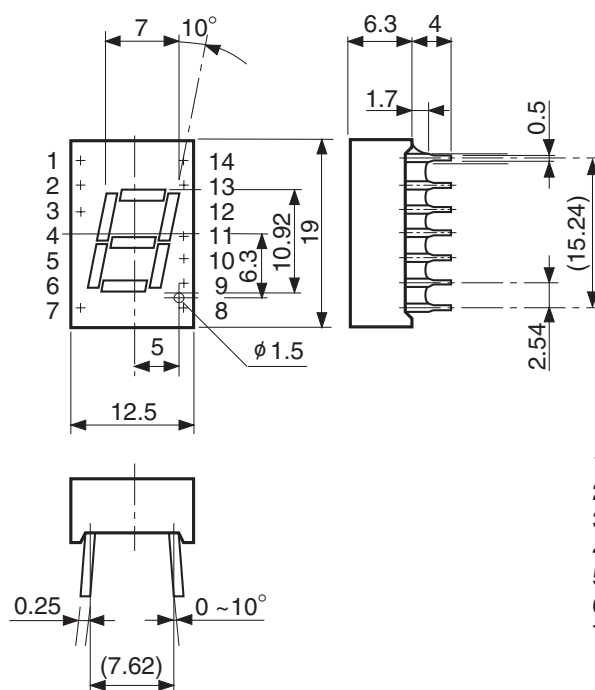
## ■ Electro-Optical Characteristics

 $T_a = 25^\circ\text{C}$ 

| Part No.     |                | Case Color | Chip     |               | Lumminous Intensity Iv |     |        |     |    | Wavelength λ p |    | Forward Voltage VF |     |    | Reverse Current IR |    |
|--------------|----------------|------------|----------|---------------|------------------------|-----|--------|-----|----|----------------|----|--------------------|-----|----|--------------------|----|
| Anode Common | Cathode Common |            | Material | Emitted Color | Rank B                 |     | Rank C |     | IF | TYP            | IF | TYP                | MAX | IF | MAX                | VR |
| NAR141       | NKR141         | Black      | GaAlAs   | Red           | 4                      | 8   | 8      | 11  | 20 | 660            | 20 | 1.7                | 2.0 | 20 | 100                | 4  |
| NAR143       | NKR143         | Gray       |          |               |                        |     |        |     |    |                |    |                    |     |    |                    |    |
| NAG141P      | NKG141P        | Black      | GaP      | Green         | 1                      | 2   | —      | —   | 20 | 565            | 20 | 2.2                | 2.5 | 20 | 100                | 4  |
| NAG143P      | NKG143P        | Gray       |          |               |                        |     |        |     |    |                |    |                    |     |    |                    |    |
| NAA141       | NKA141         | Black      | GaAsP    | Orange        | 3                      | 6   | —      | —   | 20 | 605            | 20 | 2.2                | 2.5 | 20 | 100                | 4  |
| NAA143       | NKA143         | Gray       |          |               |                        |     |        |     |    |                |    |                    |     |    |                    |    |
| Units        |                |            |          |               | mcd                    | mcd | mcd    | mcd | mA | nm             | mA | V                  | V   | mA | μA                 | V  |

## ■ Package Dimensions

Unit : mm

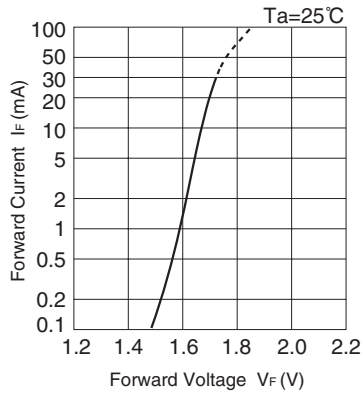


- |                 |                  |
|-----------------|------------------|
| 1. Cathode a    | 8. Cathode d     |
| 2. Cathode f    | 9. Cathode DP    |
| 3. Common Anode | 10. Cathode c    |
| 4. No Pin       | 11. Cathode g    |
| 5. No Pin       | 12. No Pin       |
| 6. No Pin       | 13. Cathode b    |
| 7. Cathode e    | 14. Common Anode |

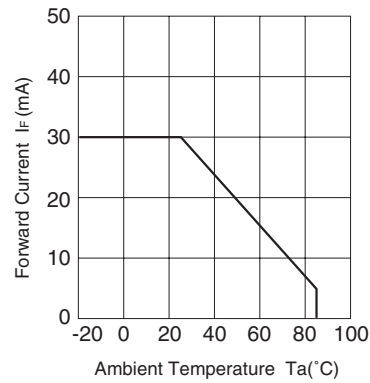
\* Leave a minimum clearance of 1.7 mm from body resin to solder.

Tolerance :  $\pm 0.25\text{mm}$

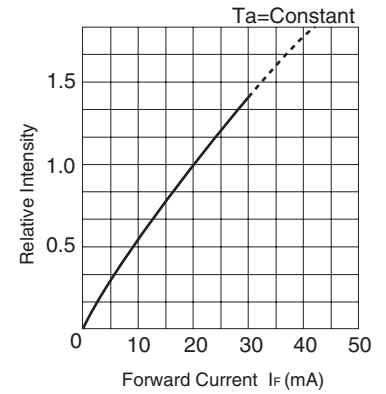
■ Forward Voltage vs. Forward Current



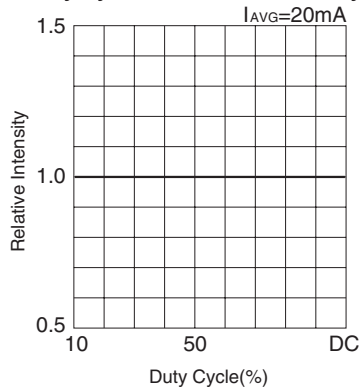
■ Ambient Temperature vs. Maximum Forward Current



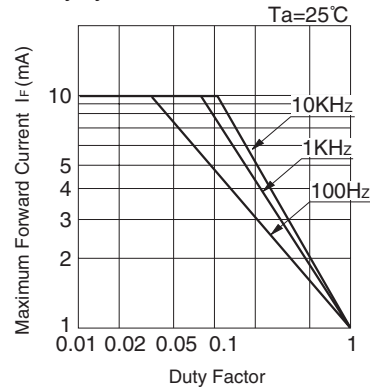
■ Forward Current vs. Relative Intensity



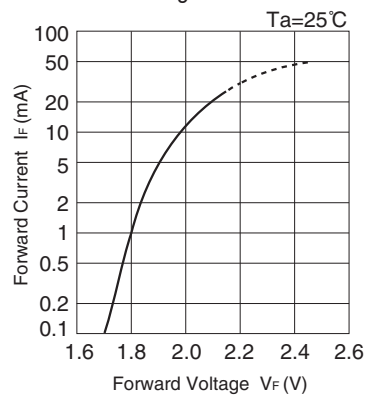
■ Duty Cycle vs. Relative Intensity



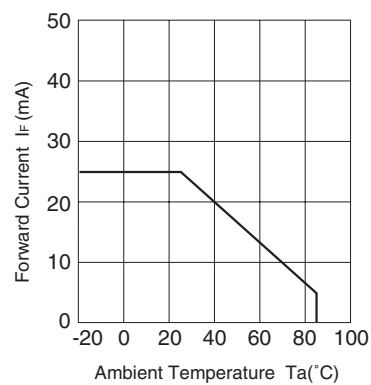
■ Duty Cycle vs. Maximum Forward Current



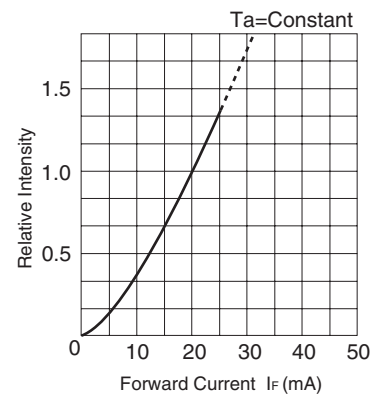
■ Forward Voltage vs. Forward Current



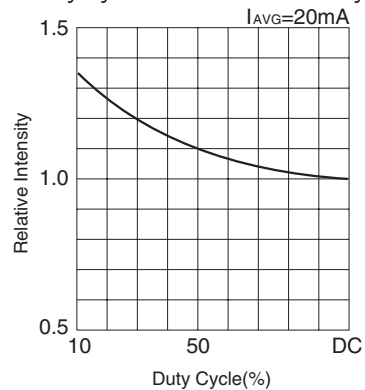
■ Ambient Temperature vs. Maximum Forward Current



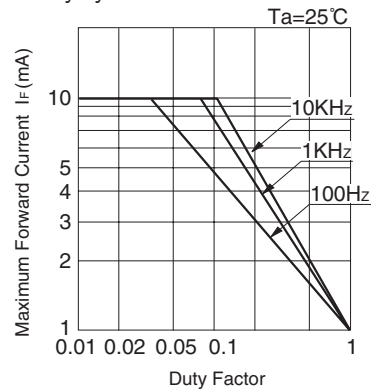
■ Forward Current vs. Relative Intensity



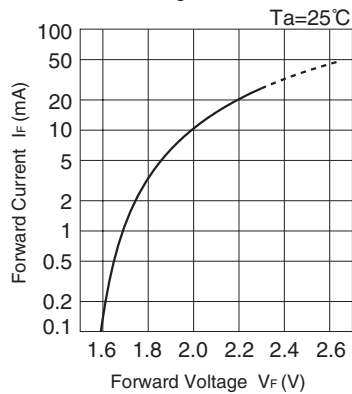
■ Duty Cycle vs. Relative Intensity



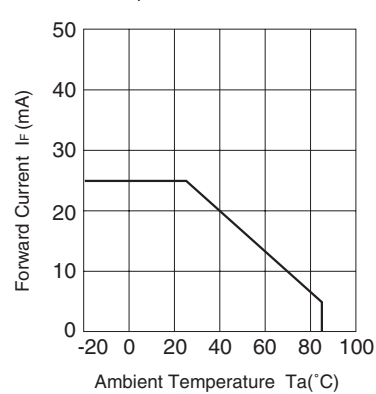
■ Duty Cycle vs. Maximum Forward Current



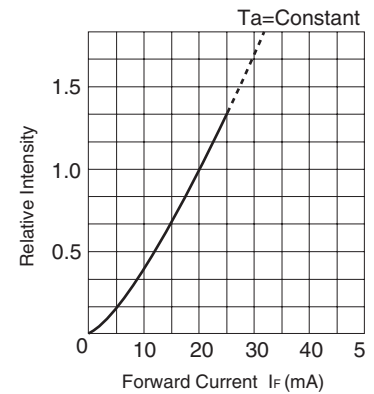
■ Forward Voltage vs. Forward Current



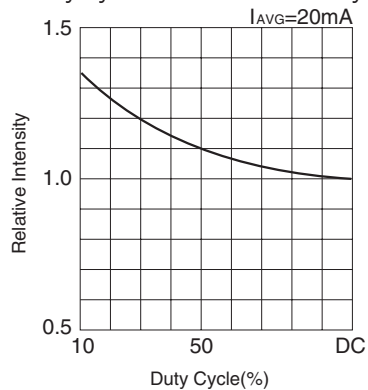
■ Ambient Temperature vs. Maximum Forward Current



■ Forward Current vs. Relative Intensity



■ Duty Cycle vs. Relative Intensity



■ Duty Cycle vs. Maximum Forward Current

