

**STANLEY****STANLEY  
SUPER BRIGHT  
LED LAMP**

T-41-23

**DEBESO(CHIMNEY) TYPE  
φ2.1 TYPE****2511DEB****2531DEB****SERIES****SELECTION GUIDE**

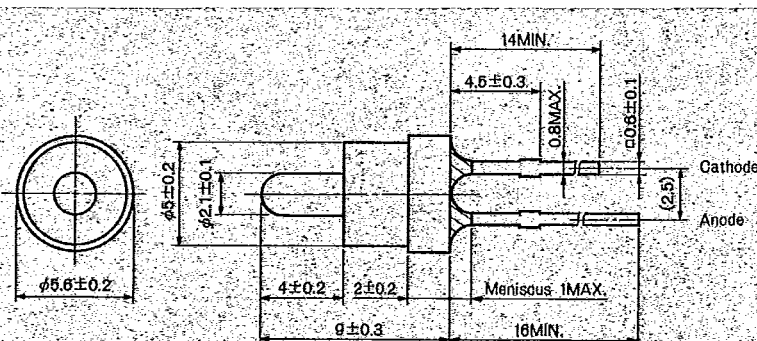
| COLOR  | MATERIAL  | PART NUMBER          |
|--------|-----------|----------------------|
| Red    | GaAlAs    | SBR 2511DEB, 2531DEB |
|        | GaAsP     | SAR 2511DEB, 2531DEB |
|        | GaP       | SPR 2511DEB, 2531DEB |
| Green  | GaP       | SBG 2511DEB, 2531DEB |
|        | GaP       | SPG 2531DEB          |
| Yellow | GaAsP/GaP | SAY 2511DEB, 2531DEB |
| Orange | GaAsP/GaP | SAO 2511DEB, 2531DEB |

**FEATURES**

- AVAILABLE IN 4 COLORS; RED, GREEN, YELLOW AND ORANGE
- STEPPED CYLINDRICAL TYPE, DIAMETER 2.1mm HEMISPHERIC LIGHT EMITTING SURFACE
- DIFFUSED TYPE
- MOST SUITABLE FOR LEVEL INDICATOR
- LOW CURRENT DRIVE, DIRECTLY COMPATIBLE WITH IC
- QUICK RESPONSE, ALLOWING PULSED OPERATION
- HIGH RELIABILITY

**DESCRIPTION**

DEBESO type LEDs can be most effectively used when applied to audio panel use. The materials of chip used are GaAsP GaP and GaAsP/GaP, having special patterns and excellent in light emitting direction.

**Package Dimensions—Unit in mm**

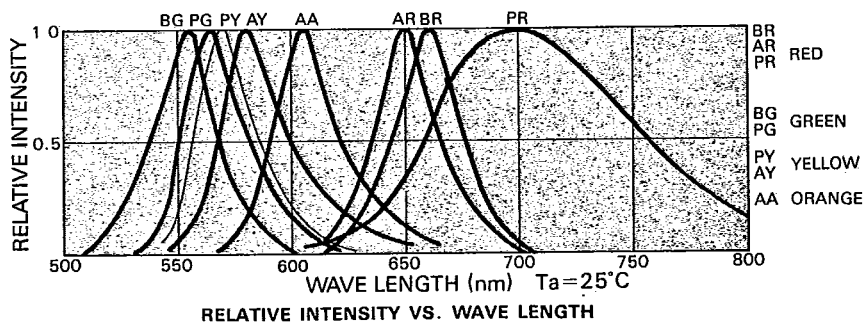
**Absolute Maximum Ratings (Ta=25°C)**

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| Parameter                  | Symbol           | Red                                   |     |     | Green    |     | Yellow   |     | Orange   | Units |
|----------------------------|------------------|---------------------------------------|-----|-----|----------|-----|----------|-----|----------|-------|
|                            |                  | BR                                    | AR  | PR  | BG       | PG  | PY       | AY  | AA       |       |
| Forward Current            | I <sub>F</sub>   | 50                                    | 50  | 30  | 50       | 50  |          | 50  | 50       | mA    |
| Peak Forward Current       | I <sub>FM</sub>  | 300                                   | 300 | 100 | 100      | 100 |          | 100 | 100      | mA    |
| Reverse Voltage            | V <sub>R</sub>   | 4                                     |     |     | 4        |     | 4        |     | 4        | V     |
| Power Dissipation          | P <sub>d</sub>   | 100                                   | 100 | 75  | 125      | 125 |          | 125 | 125      | mW    |
| Operating Temperature      | T <sub>opr</sub> | -30~+ 85                              |     |     | -30~+ 85 |     | -30~+ 85 |     | -30~+85  | °C    |
| Storage Temperature        | T <sub>stg</sub> | -30~+100                              |     |     | -30~+100 |     | -30~+100 |     | -30~+100 | °C    |
| Lead Soldering Temperature |                  | 260°C for 5 seconds (3.0mm from body) |     |     |          |     |          |     |          |       |

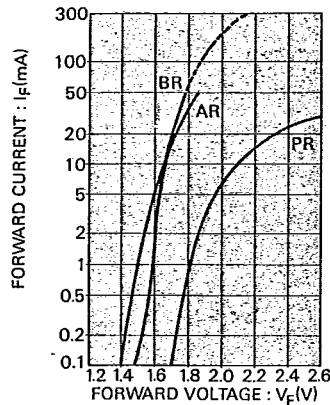
**Electro-Optical Characteristics (Ta=25°C)**

| Type No.          | Chip      |               | Lens      | Iv(mcd) |      | at I <sub>F</sub><br>(mA) | Peak Wave Length<br>λ <sub>p</sub> (nm) | Spectral Line Half Width<br>Δλ(nm) | V <sub>F</sub> (V) |      | at I <sub>F</sub><br>(mA) | at V <sub>R</sub> 4V<br>I <sub>R</sub> (μA) | Capacitance<br>Co(pF) |
|-------------------|-----------|---------------|-----------|---------|------|---------------------------|-----------------------------------------|------------------------------------|--------------------|------|---------------------------|---------------------------------------------|-----------------------|
|                   | Material  | Emitted Color |           | Min.    | Typ. |                           |                                         |                                    | Typ.               | Max. |                           |                                             |                       |
| SBR2531DEB(11DEB) | GaAlAs    | Red           | C.D (W.D) | 1.5     | 3.0  | 20                        | 660                                     | 30                                 | 1.7                | 2.0  | 20                        | 100                                         | 50                    |
| SAR2531DEB(11DEB) | GaAsP     | Red           | C.D (W.D) | 0.5     | 1.0  | 20                        | 650                                     | 30                                 | 1.7                | 2.0  | 20                        | 100                                         | 40                    |
| SPR2531DEB(11DEB) | GaP       | Red           | C.D (W.D) | 0.5     | 1.0  | 10                        | 700                                     | 100                                | 2.1                | 2.5  | 10                        | 100                                         | 70                    |
| SBG2531DEB(11DEB) | GaP       | Green         | C.D (W.D) | 1.0     | 2.0  | 20                        | 555                                     | 30                                 | 2.1                | 2.5  | 20                        | 100                                         | 50                    |
| SPG2531DEB        | GaP       | Green         | C.D       | 2.0     | 4.0  | 20                        | 565                                     | 30                                 | 2.1                | 2.5  | 20                        | 100                                         | 40                    |
| SAY2531DEB(11DEB) | GaAsP/GaP | Yellow        | C.D (W.D) | 1.5     | 3.0  | 20                        | 580                                     | 30                                 | 2.2                | 2.5  | 20                        | 100                                         | 40                    |
| SAA2531DEB(11DEB) | GaAsP/GaP | Orange        | C.D (W.D) | 1.5     | 3.0  | 20                        | 605                                     | 30                                 | 2.2                | 2.5  | 20                        | 100                                         | 50                    |

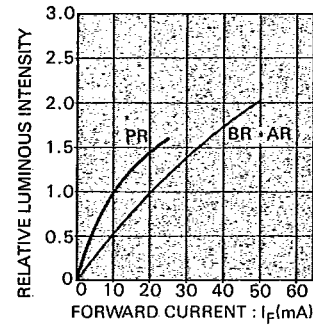


RED

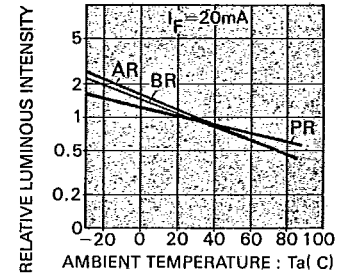
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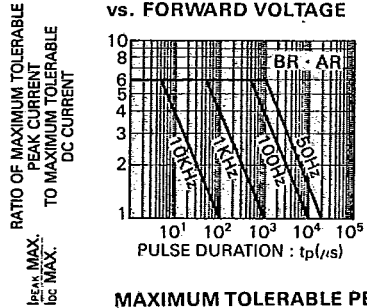
FORWARD CURRENT vs. FORWARD VOLTAGE



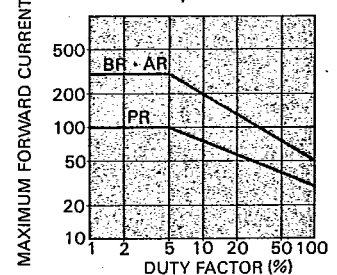
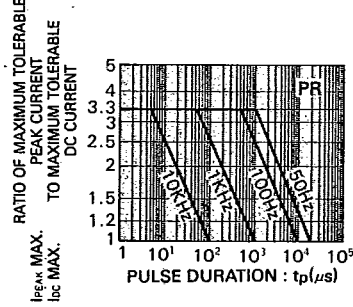
RELATIVE LUMINOUS INTENSITY vs. FORWARD CURRENT



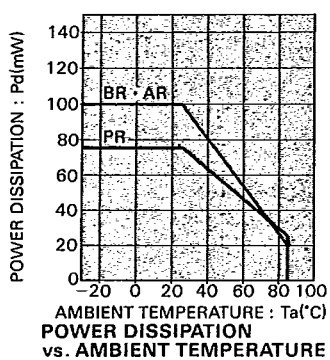
RELATIVE LUMINOUS INTENSITY vs. AMBIENT TEMPERATURE



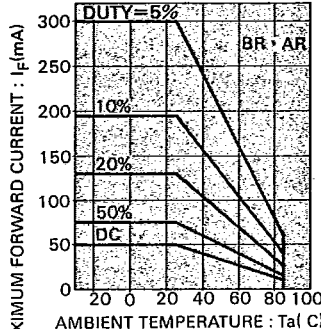
MAXIMUM TOLERABLE PEAK CURRENT vs. PULSE DURATION



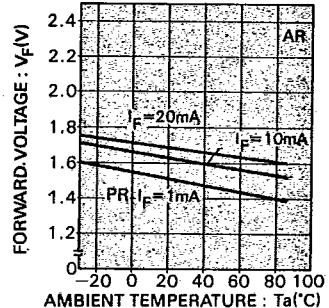
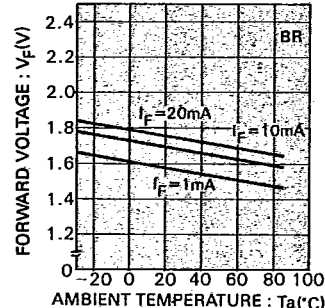
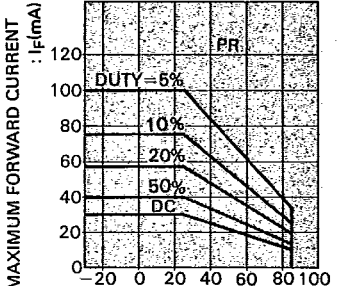
MAXIMUM FORWARD CURRENT vs. DUTY FACTOR



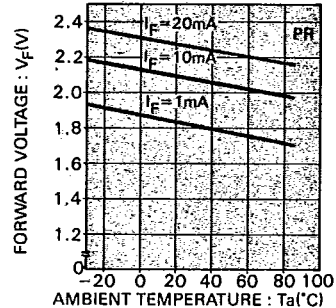
POWER DISSIPATION vs. AMBIENT TEMPERATURE



MAXIMUM FORWARD CURRENT vs. AMBIENT TEMPERATURE

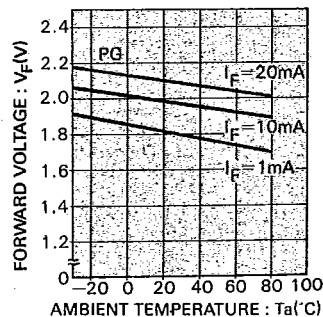
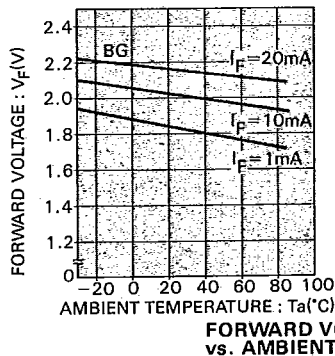
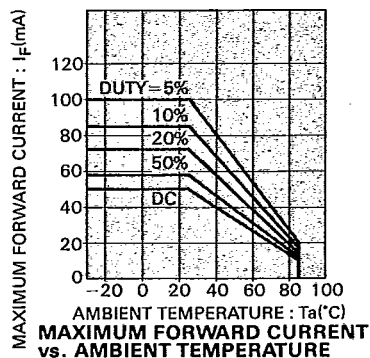
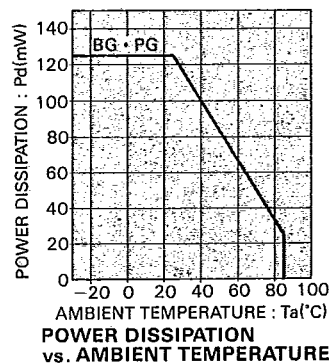
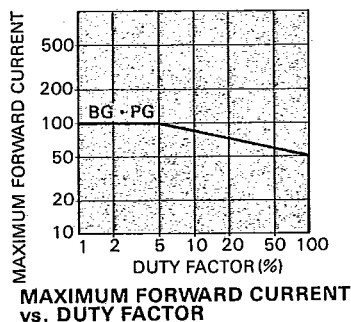
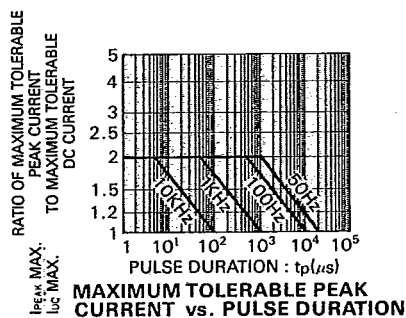
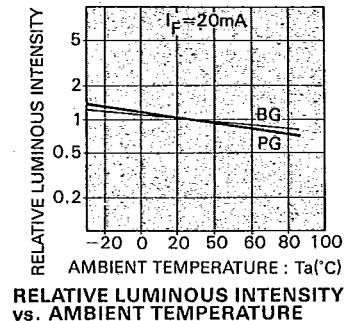
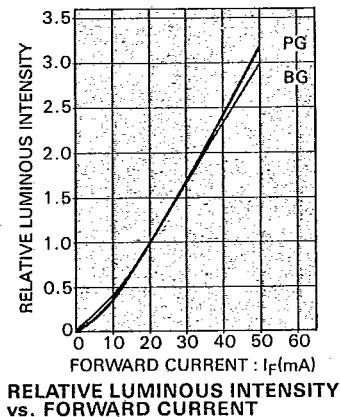
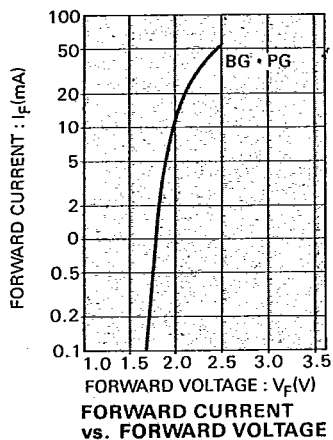


FORWARD VOLTAGE vs. AMBIENT TEMPERATURE

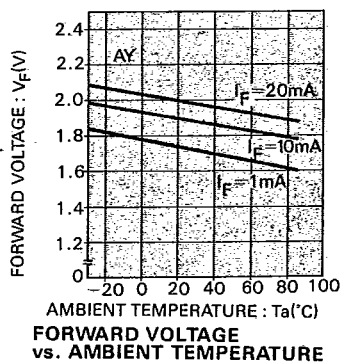
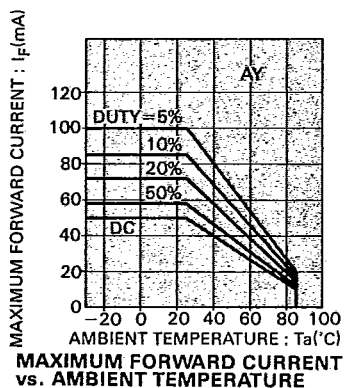
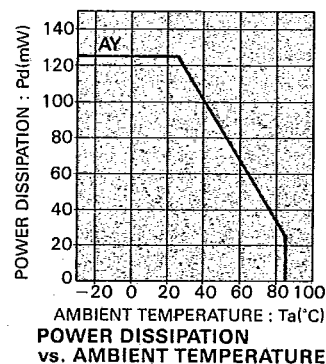
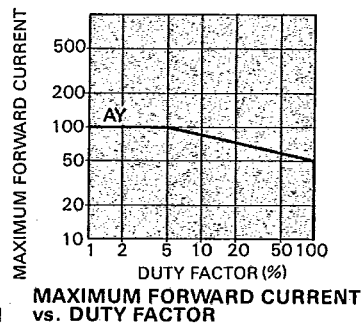
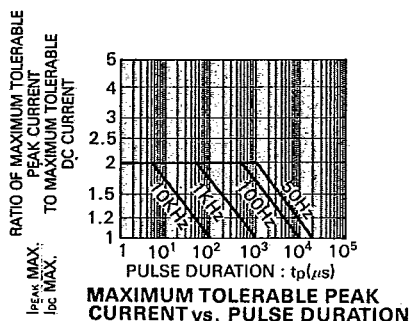
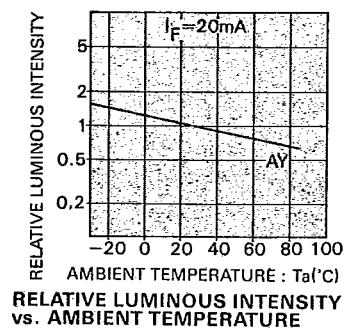
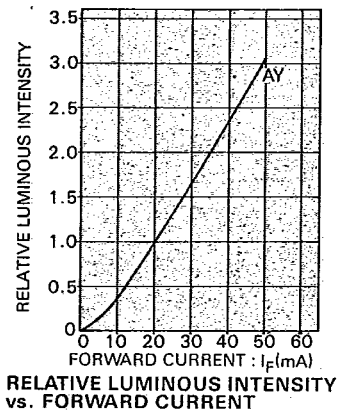
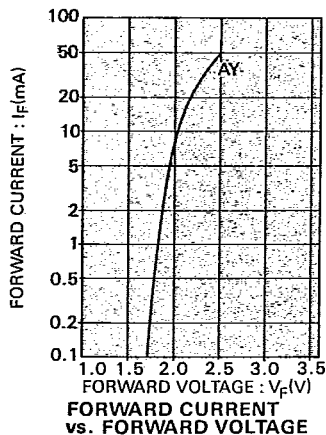


**GREEN**

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**YELLOW**

LED LAMP

# ORANGE

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