

**STANLEY****STANLEY  
SUPER BRIGHT  
LED LAMP**T-41-21  
**φ3(T-1)TYPE****3401 3411 3421 3431 3901 3911 3921 3931 SERIES****SELECTION GUIDE**

| COLOR  | MATERIAL  | PART NUMBER       |
|--------|-----------|-------------------|
| Red    | GaAlAs    | 3401, 3901        |
|        |           | (E)SBR 3411, 3911 |
|        |           | 3421, 3921        |
|        |           | 3431, 3931        |
|        | GaAsP     | 3401, 3901        |
|        |           | SAR 3411, 3911    |
| Green  | GaP       | 3421, 3921        |
|        |           | 3431, 3931        |
|        |           | 3401, 3901        |
|        |           | 3411, 3911        |
|        | (E)SBG    | 3421, 3921        |
|        |           | 3431, 3931        |
| Yellow | GaP       | 3431, 3921        |
|        |           | 3431, 3931        |
|        |           | 3401, 3901        |
|        |           | (E)SPY 3411, 3911 |
|        | (E)SAY    | 3421, 3921        |
|        |           | 3431, 3931        |
| Orange | GaAsP/GaP | 3401, 3901        |
|        |           | (E)SAA 3411, 3911 |
|        |           | 3421, 3921        |
|        |           | 3431, 3931        |

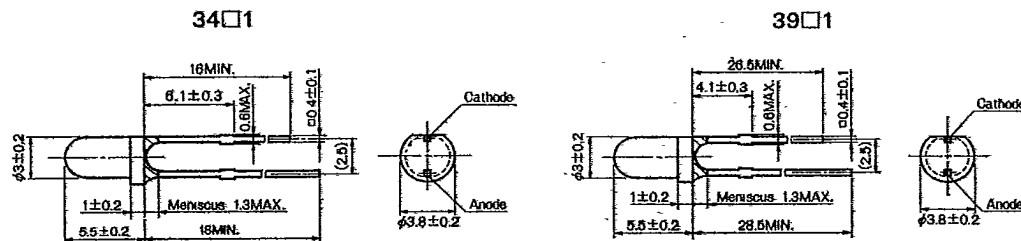
**FEATURES**

- AVAILABLE IN 4 COLORS; RED, GREEN, YELLOW AND ORANGE
- 3mm DIA EPOXY PACKAGE
- AVAILABLE IN BOTH WIDE AND NARROW VIEWING ANGLES
- LOW CURRENT DRIVE, DIRECTLY COMPATIBLE WITH IC
- QUICK RESPONSE, ALLOWING PULSED OPERATION
- HIGH RELIABILITY

**DESCRIPTION**

These series are encapsulated in a 3mm DIA epoxy packages and are available in two types according to the resin of the package; one

with wide viewing angle with diffusive agent, the other with narrow viewing angle with high luminous intensity in axis direction.

**Package Dimensions—Unit in mm**

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## Absolute Maximum Ratings (Ia=25°C)

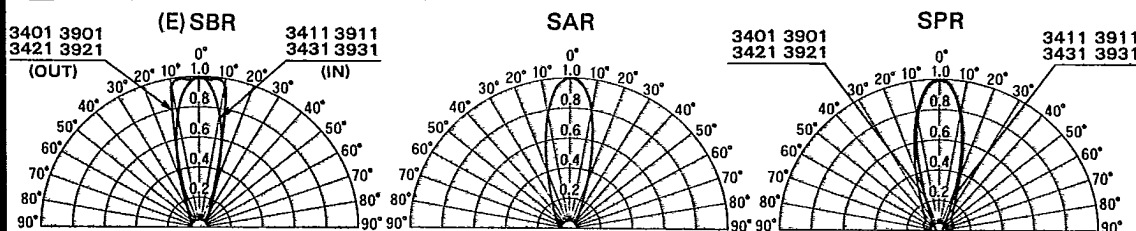
| Parameter                  | Symbol           | Red                                   |     |     | Green    |     | Yellow   |     | Orange   | Units |
|----------------------------|------------------|---------------------------------------|-----|-----|----------|-----|----------|-----|----------|-------|
|                            |                  | BR                                    | AR  | PR  | BG       | PG  | PY       | AY  | AA       |       |
| Forward Current            | I <sub>F</sub>   | 50                                    | 50  | 30  | 50       | 50  | 50       | 50  | 50       | mA    |
| Peak Forward Current       | I <sub>FM</sub>  | 300                                   | 300 | 100 | 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 | 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<br>Length<br>λp(nm) | Spectral<br>Line<br>Half<br>Width<br>Δλ(nm) | V <sub>F</sub> (V) |      | at I <sub>F</sub><br>(mA) | at<br>V <sub>R</sub> 4V<br>I <sub>R</sub> (μA) | Capaci<br>tance<br>Co(pF) |
|--------------|-----------|------------------|--------------|---------|------|---------------------------|-------------------------------|---------------------------------------------|--------------------|------|---------------------------|------------------------------------------------|---------------------------|
|              | Material  | Emitted<br>Color |              | Min.    | Typ. |                           |                               |                                             | Typ.               | Max. |                           |                                                |                           |
| SBR3401(21)  | GaAlAs    | Red              | W.C<br>(C.C) | 15.0    | 30.0 | 20                        | 660                           | 30                                          | 1.7                | 2.0  | 20                        | 100                                            | 50                        |
| 3431(11)     | GaAlAs    | Red              | C.D<br>(W.D) | 12.0    | 24.0 | 20                        | 660                           | 30                                          | 1.7                | 2.0  | 20                        | 100                                            | 50                        |
| ESBR3401(21) | GaAlAs    | Red              | W.C<br>(C.C) | 30.0    | 60.0 | 20                        | 660                           | 30                                          | 1.7                | 2.0  | 20                        | 100                                            | 50                        |
| 3431(11)     | GaAlAs    | Red              | C.D<br>(W.D) | 24.0    | 48.0 | 20                        | 660                           | 30                                          | 1.7                | 2.0  | 20                        | 100                                            | 50                        |
| SAR3401(21)  | GaAsP     | Red              | W.C<br>(C.C) | 2.5     | 5.0  | 20                        | 650                           | 30                                          | 1.7                | 2.0  | 20                        | 100                                            | 40                        |
| 3431(11)     | GaAsP     | Red              | C.D<br>(W.D) | 1.0     | 2.0  | 20                        | 650                           | 30                                          | 1.7                | 2.0  | 20                        | 100                                            | 40                        |
| SPR3401(21)  | GaP       | Red              | W.C<br>(C.C) | 2.5     | 5.0  | 10                        | 700                           | 100                                         | 2.1                | 2.5  | 10                        | 100                                            | 70                        |
| 3431(11)     | GaP       | Red              | C.D<br>(W.D) | 1.0     | 2.0  | 10                        | 700                           | 100                                         | 2.1                | 2.5  | 10                        | 100                                            | 70                        |
| SBG3401(21)  | GaP       | Green            | W.C<br>(C.C) | 5.0     | 10.0 | 20                        | 555                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 50                        |
| 3431(11)     | GaP       | Green            | C.D<br>(W.D) | 2.0     | 4.0  | 20                        | 555                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 50                        |
| ESBG3401(21) | GaP       | Green            | W.C<br>(C.C) | 10.0    | 15.0 | 20                        | 555                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 50                        |
| 3431(11)     | GaP       | Green            | C.D<br>(W.D) | 4.0     | 8.0  | 20                        | 555                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 50                        |
| SPG3421      | GaP       | Green            | C.C          | 10.0    | 20.0 | 20                        | 565                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 40                        |
| 3431         | GaP       | Green            | C.D          | 7.0     | 14.0 | 20                        | 565                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 40                        |
| SPY3401(21)  | GaP       | Yellow           | W.C<br>(C.C) | 12.0    | 24.0 | 20                        | 570                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 40                        |
| 3431(11)     | GaP       | Yellow           | C.D<br>(W.D) | 10.0    | 20.0 | 20                        | 570                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 40                        |
| ESPY3401(21) | GaP       | Yellow           | W.C<br>(C.C) | 24.0    | 48.0 | 20                        | 570                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 40                        |
| 3431(11)     | GaP       | Yellow           | C.D<br>(W.D) | 20.0    | 30.0 | 20                        | 570                           | 30                                          | 2.1                | 2.5  | 20                        | 100                                            | 40                        |
| SAY3401(21)  | GaAsP/GaP | Yellow           | W.C<br>(C.C) | 8.0     | 16.0 | 20                        | 580                           | 30                                          | 2.2                | 2.5  | 20                        | 100                                            | 40                        |
| 3431(11)     | GaAsP/GaP | Yellow           | C.D<br>(W.D) | 6.0     | 12.0 | 20                        | 580                           | 30                                          | 2.2                | 2.5  | 20                        | 100                                            | 40                        |
| ESAY3401(21) | GaAsP/GaP | Yellow           | W.C<br>(C.C) | 16.0    | 24.0 | 20                        | 580                           | 30                                          | 2.2                | 2.5  | 20                        | 100                                            | 40                        |
| 3431(11)     | GaAsP/GaP | Yellow           | C.D<br>(W.D) | 12.0    | 18.0 | 20                        | 580                           | 30                                          | 2.2                | 2.5  | 20                        | 100                                            | 40                        |
| SAA3401(21)  | GaAsP/GaP | Orange           | W.C<br>(C.C) | 8.0     | 16.0 | 20                        | 605                           | 30                                          | 2.2                | 2.5  | 20                        | 100                                            | 50                        |
| 3431(11)     | GaAsP/GaP | Orange           | C.D<br>(W.D) | 6.0     | 12.0 | 20                        | 605                           | 30                                          | 2.2                | 2.5  | 20                        | 100                                            | 50                        |
| ESAA3401(21) | GaAsP/GaP | Orange           | W.C<br>(C.C) | 16.0    | 24.0 | 20                        | 605                           | 30                                          | 2.2                | 2.5  | 20                        | 100                                            | 50                        |
| 3431(11)     | GaAsP/GaP | Orange           | C.D<br>(W.D) | 12.0    | 18.0 | 20                        | 605                           | 30                                          | 2.2                | 2.5  | 20                        | 100                                            | 50                        |

39□1 types have the same characteristics with those of 34□1 types

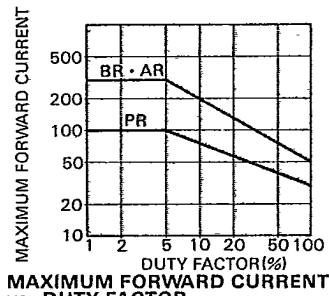
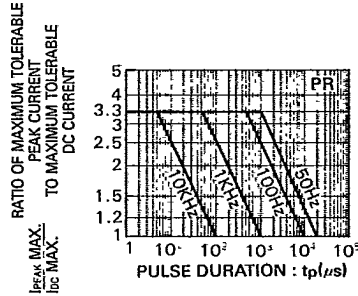
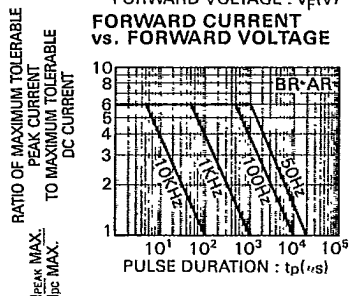
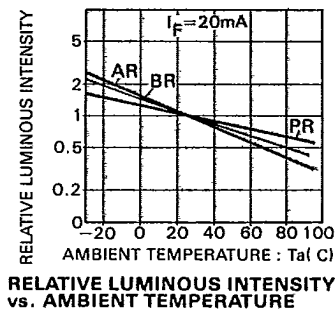
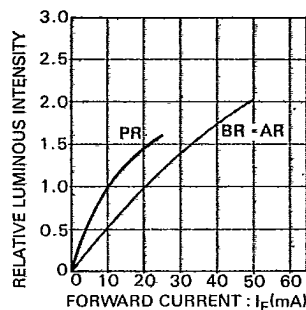
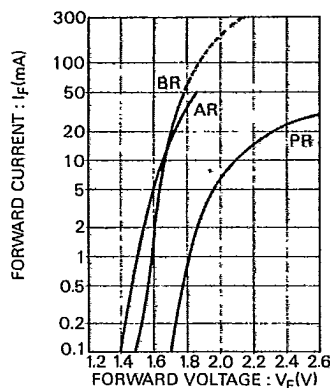
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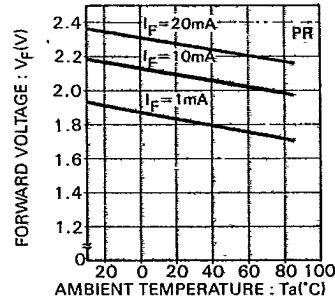
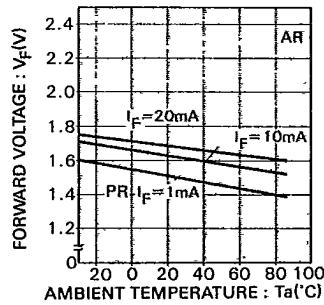
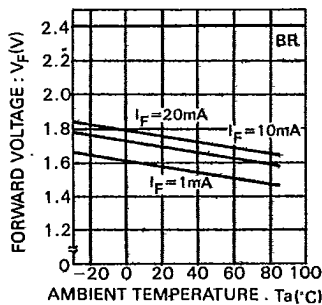
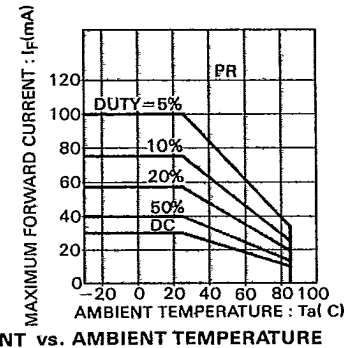
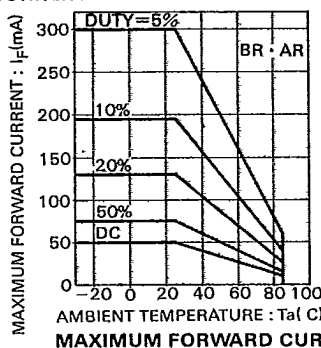
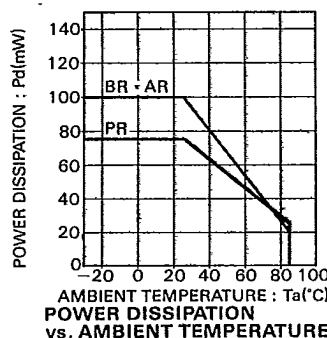
RED

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MAXIMUM TOLERABLE PEAK CURRENT vs. PULSE DURATION



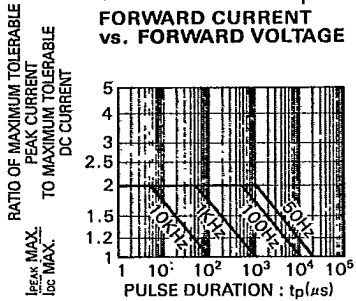
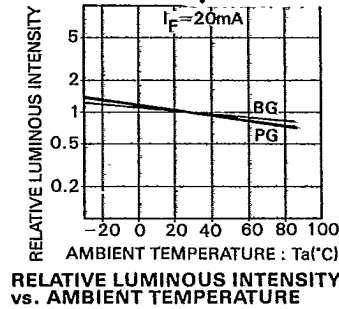
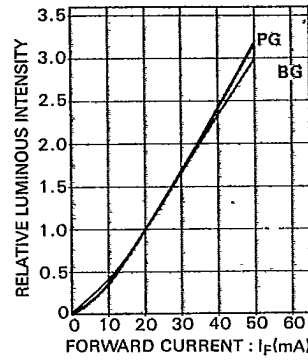
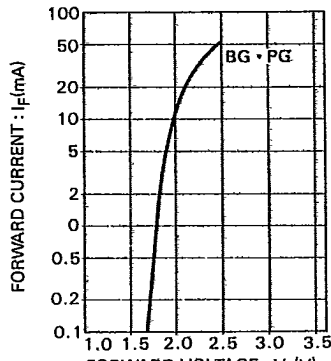
FORWARD VOLTAGE vs. AMBIENT TEMPERATURE

GREEN

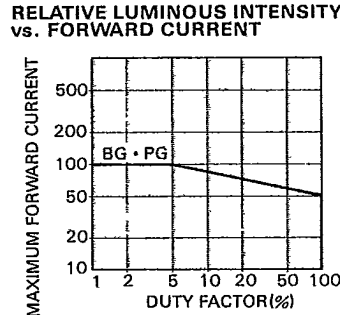
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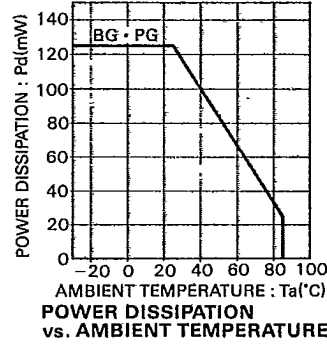
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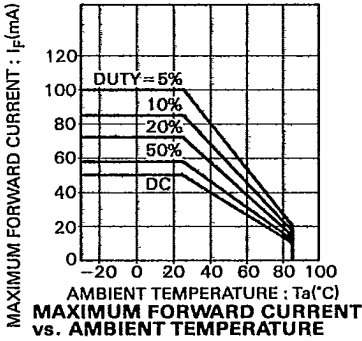
MAXIMUM TOLERABLE PEAK CURRENT vs. PULSE DURATION



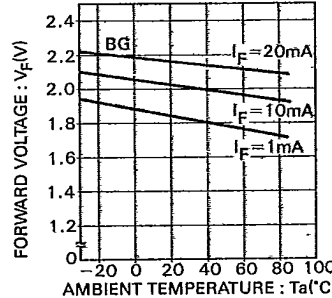
MAXIMUM FORWARD CURRENT vs. DUTY FACTOR



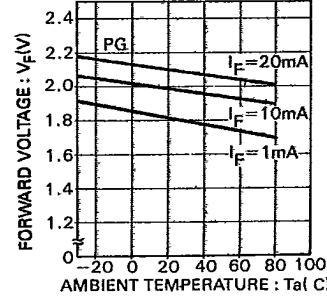
POWER DISSIPATION vs. AMBIENT TEMPERATURE



MAXIMUM FORWARD CURRENT vs. AMBIENT TEMPERATURE

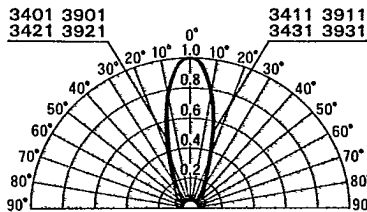


FORWARD VOLTAGE vs. AMBIENT TEMPERATURE

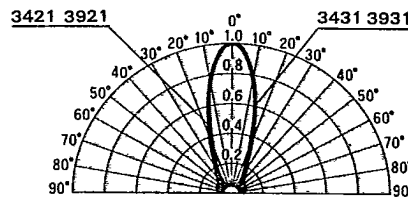


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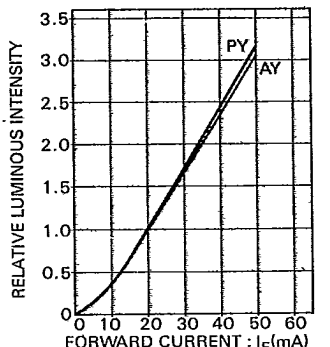
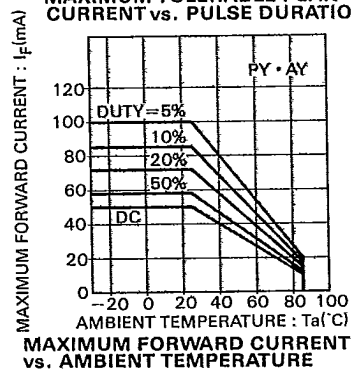
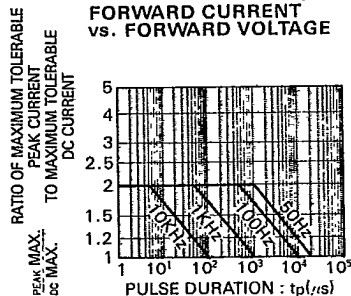
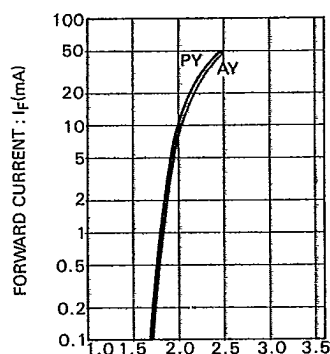
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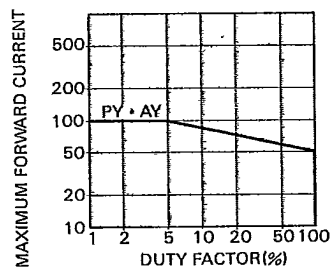
SPG



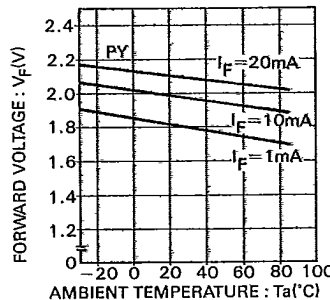
# YELLOW



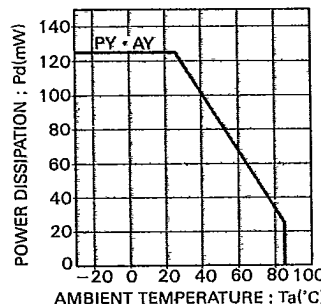
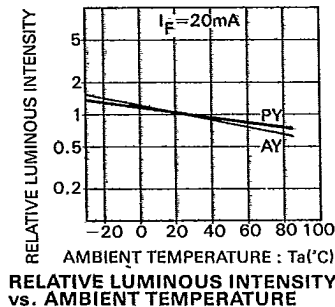
RELATIVE LUMINOUS INTENSITY vs. FORWARD CURRENT



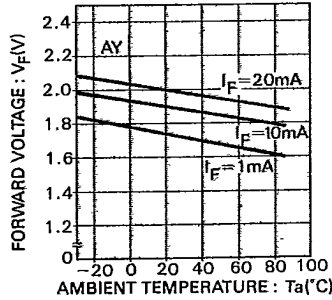
MAXIMUM FORWARD CURRENT vs. DUTY FACTOR



FORWARD VOLTAGE vs. AMBIENT TEMPERATURE

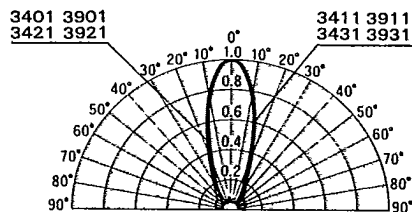


POWER DISSIPATION vs. AMBIENT TEMPERATURE

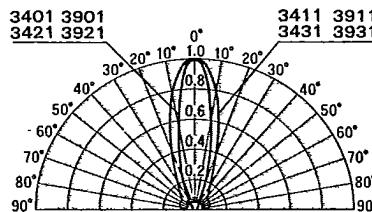


## SPATIAL DISTRIBUTATION

(E) SPY



(E) SAY



ORANGE

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