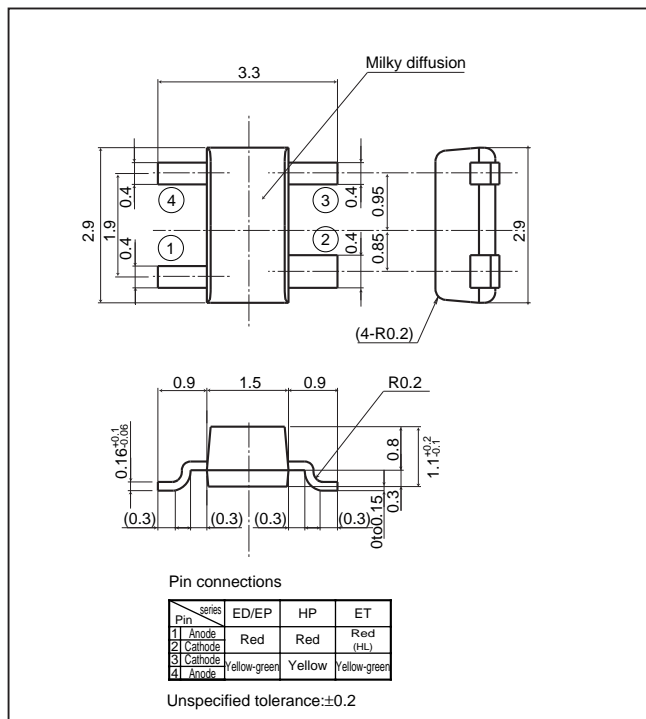


# LT1□□53A series

## 3.3X2.9mm, 1.1mm Thickness, Milky Diffusion, Dichromatic Chip LED Devices

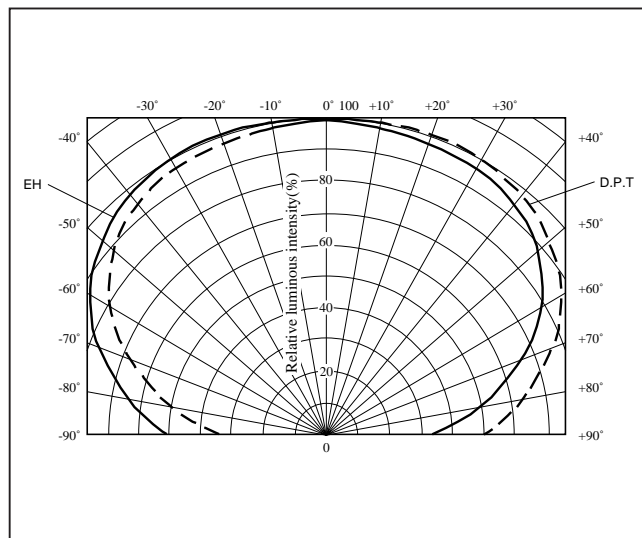
### Outline Dimensions

(Unit : mm)



### Radiation Diagram

(Ta=25°C)



### Absolute Maximum Ratings\*

(Ta=25°C)

| Model No. | Radiation color      | Radiation material | Power dissipation P (mW) | Forward current IF (mA) | Peak forward current IFM <sup>*1</sup> (mA) | Derating factor (mA/°C) |       | Reverse voltage VR (V) | Operating temperature Topr (°C) | Storage temperature Tstg (°C) | Soldering temperature Tsol <sup>*2</sup> (°C) |
|-----------|----------------------|--------------------|--------------------------|-------------------------|---|-------------------------|-------|------------------------|---------------------------------|-------------------------------|---|
|           |                      |                    |                          |                         |   | DC                      | Pulse |                        |                                 |                               |   |
| LT1ET53A  | Yellow-green         | GaP                | 50                       | 20                      | 50  | 0.27                    | 0.67  | 5                      | -25 to +85                      | -25 to +100                   | 350   |
|           | Red(High-luminosity) | GaAlAs on GaAs     | 66                       | 30                      | 50  | 0.40                    | 0.67  | 5                      | -25 to +85                      | -25 to +100                   | 350   |
| LT1ED53A  | Yellow-green         | GaP                | 50                       | 20                      | 50  | 0.27                    | 0.67  | 5                      | -25 to +85                      | -25 to +100                   | 350   |
|           | Red                  | GaAsP on GaP       | 85                       | 30                      | 50  | 0.40                    | 0.67  | 5                      | -25 to +85                      | -25 to +100                   | 350   |
| LT1EP53A  | Yellow-green         | GaP                | 50                       | 20                      | 50  | 0.27                    | 0.67  | 5                      | -25 to +85                      | -25 to +100                   | 350   |
|           | Red                  | GaP                | 23                       | 10                      | 50  | 0.13                    | 0.67  | 5                      | -25 to +85                      | -25 to +100                   | 350   |
| LT1HP53A  | Yellow               | GaAsP on GaP       | 50                       | 20                      | 50  | 0.27                    | 0.67  | 5                      | -25 to +85                      | -25 to +100                   | 350   |
|           | Red                  | GaP                | 23                       | 10                      | 50  | 0.13                    | 0.67  | 5                      | -25 to +85                      | -25 to +100                   | 350   |

\* The value is specified under the condition that either color is lightened separately. When the both diodes are lightened simultaneously, the power dissipation of each diode should be less than the half of the value specified in this table.

\*1 Duty ratio=1/10, Pulse width=0.1ms

\*2 For 3s or less at the temperature of hand soldering. Temperature of reflow soldering is shown on the below page.

### Electro-optical Characteristics

(Ta=25°C)

| Lens type       | Model No. | Radiation color      | Forward voltage VF(V) |     | Peak emission wavelength λp(nm) |         | Luminous intensity Iv(mcd) |         | Spectrum radiation bandwidth Δλ(nm) |         | Reverse current IR(μA) |        | Terminal capacitance Cc(pF) |       | Page for characteristics diagrams |
|-----------------|-----------|----------------------|-----------------------|-----|---------------------------------|---------|----------------------------|---------|-------------------------------------|---------|------------------------|--------|-----------------------------|-------|-----------------------------------|
|                 |           |                      | TYP                   | MAX | TYP                             | IF (mA) | TYP                        | IF (mA) | TYP                                 | IF (mA) | MAX                    | VR (V) | TYP                         | (MHz) |                                   |
|                 |           |                      |                       |     |                                 |         |                            |         |                                     |         |                        |        |                             |       |                                   |
| Milky diffusion | LT1ET53A  | Yellow-green         | 1.95                  | 2.5 | 565                             | 10      | 3.6                        | 10      | 30                                  | 10      | 10                     | 4      | 35                          | 1     | →                                 |
|                 |           | Red(High-luminosity) | 1.75                  | 2.2 | 660                             | 20      | 6.5                        | 20      | 20                                  | 20      | 10                     | 4      | 30                          | 1     | →                                 |
|                 | LT1ED53A  | Yellow-green         | 1.95                  | 2.5 | 565                             | 10      | 3.6                        | 10      | 30                                  | 10      | 10                     | 4      | 35                          | 1     | →                                 |
|                 |           | Red                  | 2.0                   | 2.8 | 635                             | 20      | 5.3                        | 20      | 35                                  | 20      | 10                     | 4      | 20                          | 1     | →                                 |
|                 | LT1EP53A  | Yellow-green         | 1.95                  | 2.5 | 565                             | 10      | 3.6                        | 10      | 30                                  | 10      | 10                     | 4      | 35                          | 1     | →                                 |
|                 |           | Red                  | 1.9                   | 2.3 | 695                             | 5       | 1.1                        | 5       | 100                                 | 5       | 10                     | 4      | 55                          | 1     | →                                 |
| LT1HP53A        | Yellow    | 1.9                  | 2.5                   | 585 | 10                              | 3.1     | 10                         | 30      | 10                                  | 10      | 4                      | 35     | 1                           | →     |                                   |
|                 | Red       | 1.9                  | 2.3                   | 695 | 5                               | 1.1     | 5                          | 100     | 5                                   | 10      | 4                      | 55     | 1                           | →     |                                   |

(Notice) • In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.

(Internet) • Data for sharp's optoelectronic/power device is provided for internet.(Address <http://www.sharp.co.jp/ecg/>)

# LED Lamp Characteristics Diagrams

## PR series



## HD series

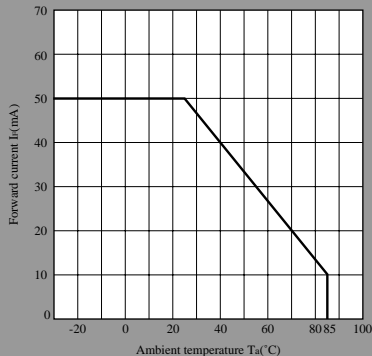


Note) Characteristics shown in diagrams are typical values. (not assurance value)

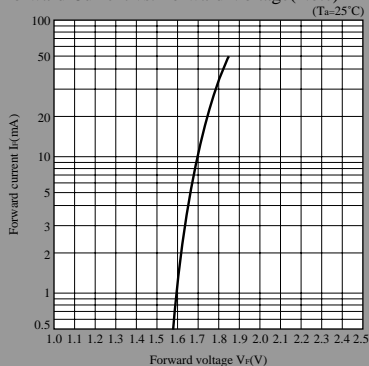
- (Notice) • In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.
- (Internet) • Data for sharp's optoelectronic/power device is provided for internet.(Address <http://www.sharp.co.jp/ecg/>)

# TR series

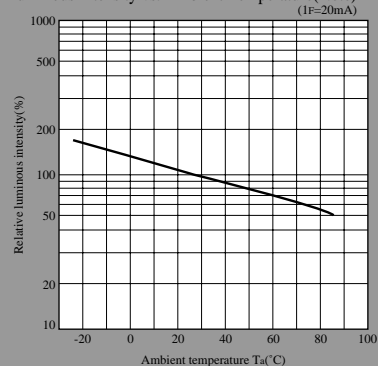
### Forward Current Derating Curve



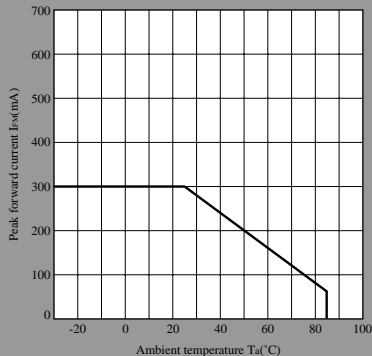
### Forward Current vs. Forward Voltage(Note)



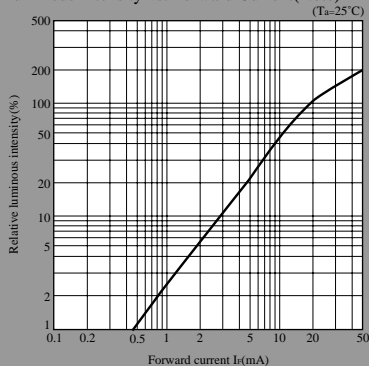
### Luminous Intensity vs. Ambient Temperature(Note)



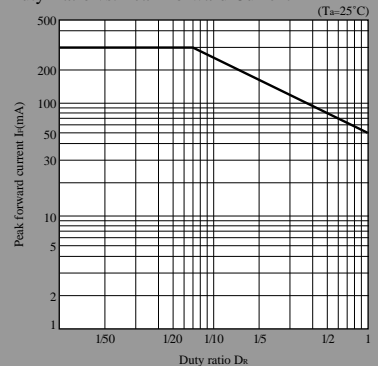
### Peak Forward Current Derating Curve



### Luminous Intensity vs. Forward Current(Note)



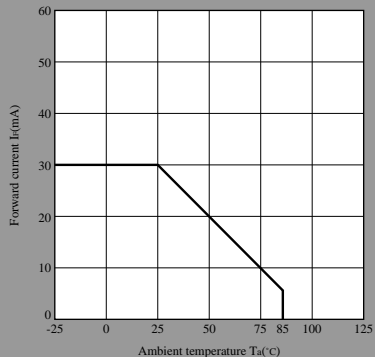
### Duty Ratio vs. Peak Forward Current



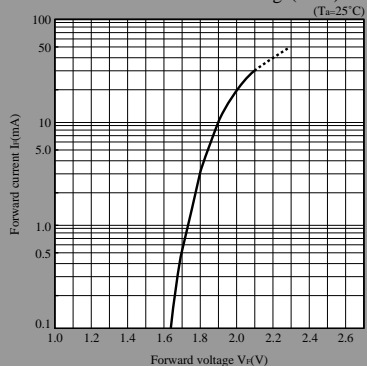
Note) Characteristics shown in diagrams are typical values. (not assurance value)

# HY series

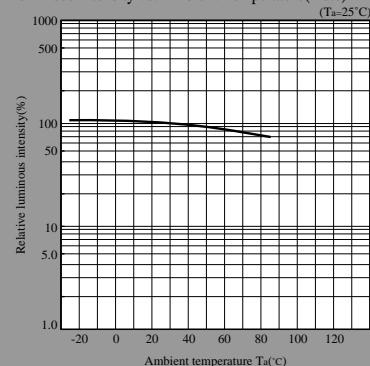
### Forward Current Derating Curve



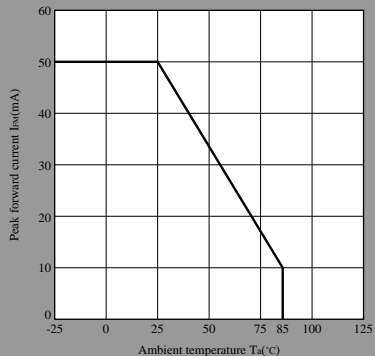
### Forward Current vs. Forward Voltage(Note)



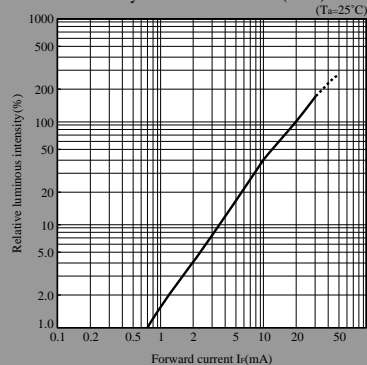
### Luminous Intensity vs. Ambient Temperature(Note)



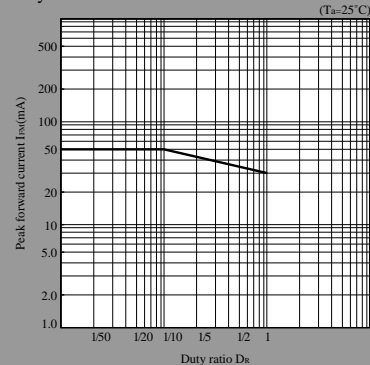
### Peak Forward Current Derating Curve



### Luminous Intensity vs. Forward Current(Note)

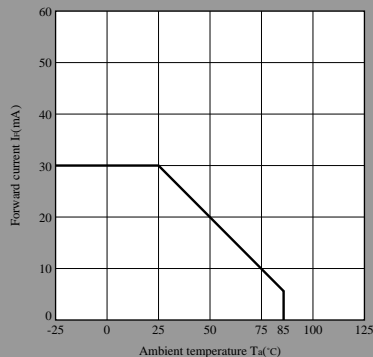


### Duty Ratio vs. Peak Forward Current

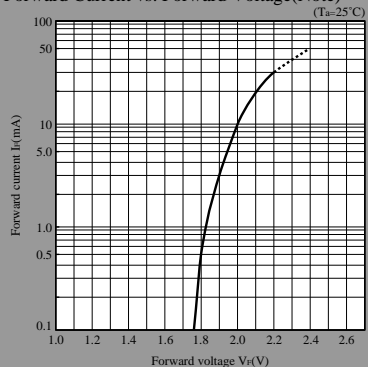


Note) Characteristics shown in diagrams are typical values. (not assurance value)

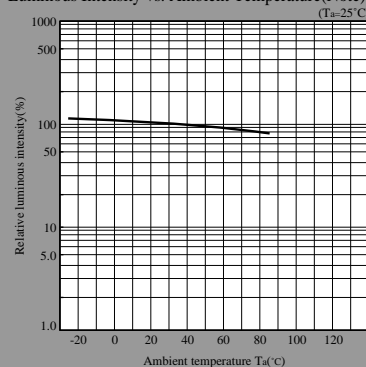
Forward Current Derating Curve



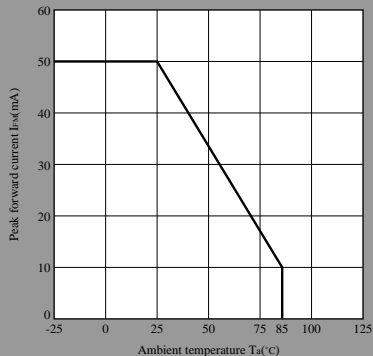
Forward Current vs. Forward Voltage(Note)



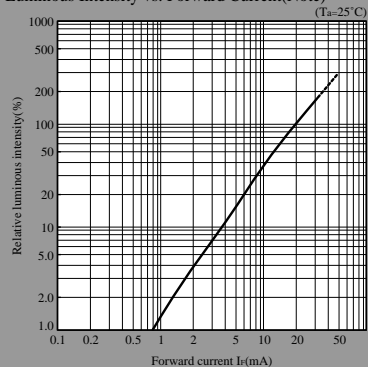
Luminous Intensity vs. Ambient Temperature(Note)



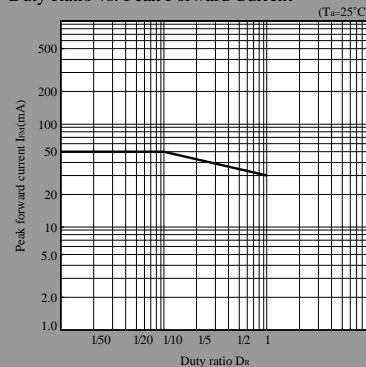
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)



Duty Ratio vs. Peak Forward Current



Note) Characteristics shown in diagrams are typical values. (not assurance value)