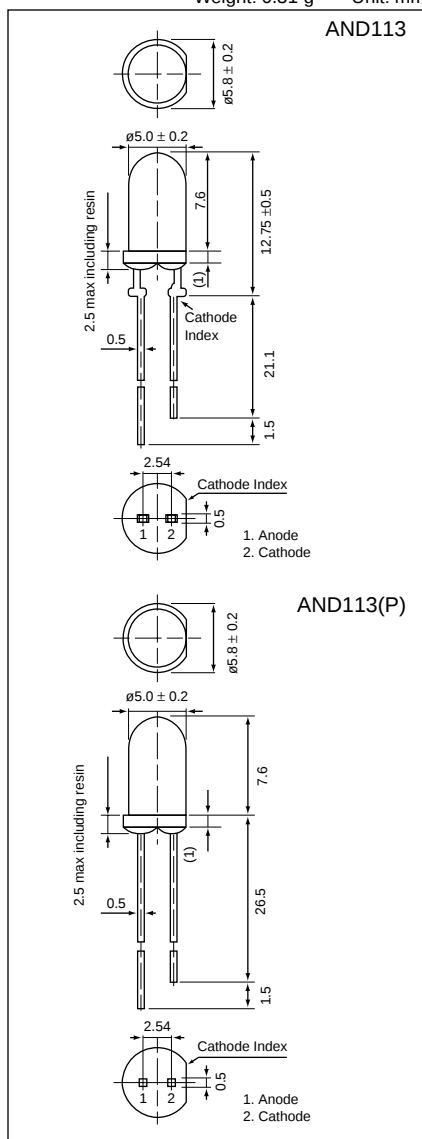




Weight: 0.31 g Unit: mm



AND113(P) Series

Standard LED

T-1 3/4 Package (5 mm)

Features

- Low power requirement
- Stand-off or flush-mount
- All plastic molded lens
- Choice of 3 colors: GaP-Red; GaP-Green; GaAsP-Yellow

Optical Characteristics (T = 25°C)

Part Number	Color		Lens Desc.	Axial Luminous Intensity (mcd)		Test Condition (I _F -mA)	Viewing Angle 2θ1/2 (deg)
	LED	Lens		Min.	Typ.		
AND113G/GP	Green	Green	Clear	20	50	10	30
AND113R/RP	Red	Red	Clear	5	18	10	30
AND113S	Red	Red	Clear	50	150	10	30
AND113Y/YP	Yellow	Yellow	Clear	20	50	10	30

Absolute Maximum Ratings (T_A = 25°C)

Characteristics	Symbol	Rating			Unit
		Red	Green	Yellow	
Forward Current AND113(P) AND113S	I _F	25 30	25 —	30 —	mA
Reverse Voltage	V _R	5	5	5	V
Power Dissipation AND113(P) AND113S	P _D	120 105	105 —	105 —	mW
Operating Temperature	T _{Opr}	-40 to +85			°C
Storage Temperature Range	T _{Stg}	-40 to +85			°C

Electro-Optical Characteristics (T_A = 25°C)

Characteristics	Symbol	Test Condition	Red			Green			Yellow			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward Voltage	V _F	I _F = 20mA	—	2.0	2.5	—	2.1	2.5	—	2.1	2.5	V
Reverse Current	I _R	V _R = 5 V	—	—	10	—	—	10	—	—	10	μA
Peak Emission Wavelength AND113(P) AND113S	λ _p	I _F = 15mA	—	700 625	—	—	565 —	—	—	590 —	—	nm
Spectral Line Half Width AND113(P) AND113S	λ	I _F = 15mA	—	45 45	—	—	30 —	—	—	35 —	—	nm

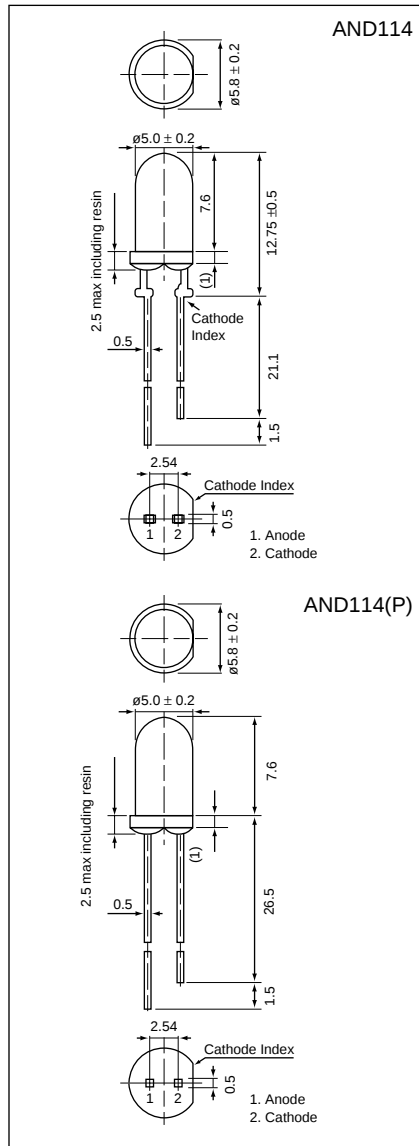
Precaution

Please be careful of the following:

1. Soldering temperature: 260°C max; Soldering time: 3 sec. max; Soldering portion of lead: up to 2 mm from the body of the device.
2. The lead can be formed up to 5 mm from the body of the device without forming stress. Soldering should be performed after the lead forming.



Weight: 0.31 g Unit: mm



AND114(P) Series

Standard LED

T-1 3/4 Package (5 mm)

Features

- Low power requirement
- Stand-off or flush-mount
- All plastic molded lens
- Choice of 3 colors: GaP–Red; GaP–Green; GaAsP–Yellow

Optical Characteristics (T = 25°C)

Part Number	Color		Lens Desc.	Axial Luminous Intensity (mcd)		Test Condition (I _F –mA)	Viewing Angle 2θ1/2 (deg)
	LED	Lens		Min.	Typ.		
AND114G/GP	Green	Green	Diffused	5	18	10	60
AND114R/RP	Red	Red	Diffused	2	5	10	60
AND114S	Red	Red	Diffused	20	50	10	60
AND114Y/YP	Yellow	Yellow	Diffused	5	18	10	60

Absolute Maximum Ratings (T_A = 25°C)

Characteristics	Symbol	Rating			Unit
		Red	Green	Yellow	
Forward Current AND114(P) AND114S	I _F	25 30	25 –	30 –	mA
Reverse Voltage	V _R	5	5	5	V
Power Dissipation AND114(P) AND114S	P _D	120 105	105 –	105 –	mW
Operating Temperature	T _{Opr}	–40 to +85			°C
Storage Temperature Range	T _{Stg}	–40 to +85			°C

Electro-Optical Characteristics (T_A = 25°C)

Characteristics	Symbol	Test Condition	Red			Green			Yellow			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward Voltage	V _F	I _F = 20mA	–	2.0	2.5	–	2.1	2.5	–	2.1	2.5	V
Reverse Current	I _R	V _R = 5 V	–	–	10	–	–	10	–	–	10	μA
Peak Emission Wavelength AND114(P) AND114S	λ _p	I _F = 20mA	–	700 625	–	–	565 –	–	–	590 –	–	nm
Spectral Line Half Width AND114(P) AND114S	λ	I _F = 20mA	–	45 45	–	–	30 –	–	–	35 –	–	nm

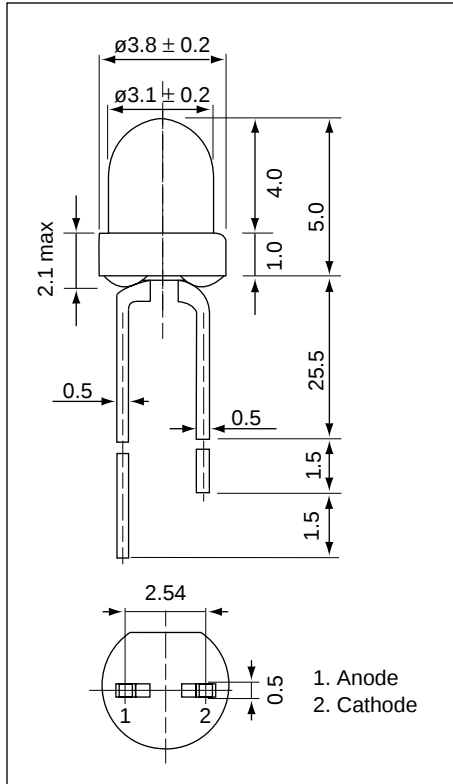
Precaution

Please be careful of the following:

1. Soldering temperature: 260°C max; Soldering time: 3 sec. max; Soldering portion of lead: up to 2 mm from the body of the device.
2. The lead can be formed up to 5 mm from the body of the device without forming stress. Soldering should be performed after the lead forming.



Weight: 0.14 g Unit: mm



AND123 Series

Standard LED

T-1 Package (3 mm)

Features

- Low power requirement
- Stand-off or flush-mount
- All plastic molded lens
- Choice of 3 colors: GaP-Red; GaP-Green; GaAsP-Yellow

Optical Characteristics (T = 25°C)

Part Number	Color		Lens Desc.	Axial Luminous Intensity (mcd)		Test Condition (I _F -mA)	Viewing Angle 2θ1/2 (deg)
	LED	Lens		Min.	Typ.		
AND123G	Green	Green	Clear	20	50	10	50
AND123R	Red	Red	Clear	5	12	10	50
AND123Y	Yellow	Yellow	Clear	10	45	10	50

Absolute Maximum Ratings (T_A = 25°C)

Characteristics	Symbol	Rating			Unit
		Red	Green	Yellow	
Forward Current	I _F	25	25	30	mA
Reverse Voltage	V _R	5	5	5	V
Power Dissipation	P _D	120	105	105	mW
Operating Temperature Range	T _{Opr}	-40 to +85			°C
Storage Temperature Range	T _{Stg}	-40 to +85			°C

Electro-Optical Characteristics (T_A = 25°C)

Characteristics	Symbol	Test Condition	Red			Green			Yellow			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward Voltage	V _F	I _F = 20mA	—	2.0	2.5	—	2.1	2.5	—	2.1	2.5	V
Reverse Current	I _R	V _R = 5 V	—	—	10	—	—	10	—	—	10	μA
Peak Emission Wavelength	λ _p	I _F = 15mA	—	700	—	—	565	—	—	590	—	nm
Spectral Line Half Width	λ	I _F = 15mA	—	45	—	—	30	—	—	35	—	nm

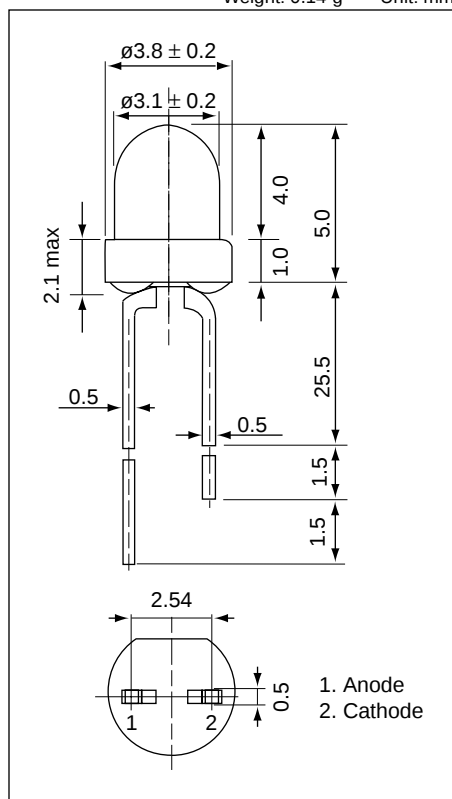
Precaution

Please be careful of the following:

1. Soldering temperature: 260°C max; Soldering time: 3 sec. max; Soldering portion of lead: up to 2 mm from the body of the device.
2. The lead can be formed up to 5 mm from the body of the device without forming stress. Soldering should be performed after the lead forming.



Weight: 0.14 g Unit: mm



AND124 Series

Standard LED

T-1 Package (3 mm)

Features

- Low power requirement
- Stand-off or flush-mount
- All plastic molded lens
- Choice of 3 colors: GaP – Red; GaP – Green; GaAsP – Yellow

Optical Characteristics (T = 25°C)

Part Number	Color		Lens Desc.	Axial Luminous Intensity (mcd)		Test Condition (I _F –mA)	Viewing Angle 2θ1/2 (deg)
	LED	Lens		Min.	Typ.		
AND124G	Green	Green	Diffused	8	20	10	60
AND124R	Red	Red	Diffused	1.3	3.0	10	60
AND124Y	Yellow	Yellow	Diffused	8	20	10	60

Absolute Maximum Ratings (T_A = 25°C)

Characteristics	Symbol	Rating			Unit
		Red	Green	Yellow	
Forward Current	I _F	25	32	30	60
Reverse Voltage	V _R	5	5	5	V
Power Dissipation	P _D	120	105	105	mW
Operating Temperature Range	T _{Opr}	-40 to +85			°C
Storage Temperature Range	T _{Stg}	-40 to +85			°C

Electro-Optical Characteristics (T_A = 25°C)

Characteristics	Symbol	Test Condition	Red			Green			Yellow			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward Voltage	V _F	I _F = 20mA	–	2.0	2.5	–	2.1	2.5	–	2.1	2.5	V
Reverse Current	I _R	V _R = 5 V	–	–	10	–	–	10	–	–	10	μA
Peak Emission Wavelength	λ _p	I _F = 20mA	–	700	–	–	565	–	–	590	–	nm
Spectral Line Half Width	λ	I _F = 15mA	–	45	–	–	30	–	–	35	–	nm

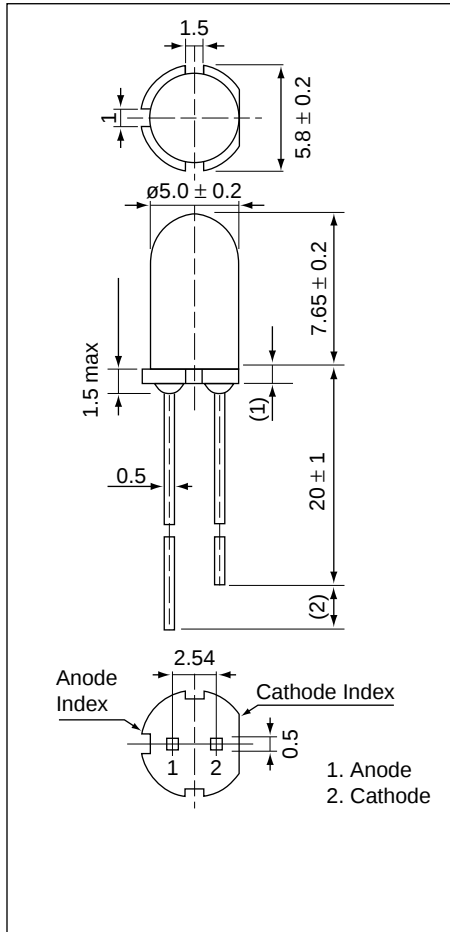
Precaution

Please be careful of the following:

1. Soldering temperature: 260°C max; Soldering time: 3 sec. max; Soldering portion of lead: up to 2 mm from the body of the device.
2. The lead can be formed up to 5 mm from the body of the device without forming stress. Soldering should be performed after the lead forming.



Weight: 0.30 g Unit: mm



AND181YP

Standard LED

T-1 3/4 Package (5 mm)

Features

- Low power requirement
- Stand-off or flush-mount
- All plastic molded lens
- Color: GaAsP–Yellow

Optical Characteristics (T = 25°C)

Color		Lens Desc.	Axial Luminous Intensity (mcd)		Test Condition (I _F –mA)	Viewing Angle 2θ1/2 (deg)
LED	Lens		Min.	Typ.		
Yellow	Lt Yellow	Clear	75	150	20	15

Absolute Maximum Ratings (T_A = 25°C)

Characteristics	Symbol	Rating (Yellow)	Unit
Forward Current (DC)	I _F	25	mA
Reverse Voltage	V _R	4	V
Power Dissipation	P _D	70	mW
Operating Temperature	T _{Opr}	-20 to +75	°C
Storage Temperature Range	T _{Stg}	-30 to +100	°C

Electro-Optical Characteristics (T_A = 25°C)

Characteristics	Symbol	Test Condition	Yellow			Unit
			Min.	Typ.	Max.	
Forward Voltage	V _F	I _F = 20mA	–	2.1	2.8	V
Reverse Current	I _R	V _R = 4 V	–	–	100	μA
Peak Emission Wavelength	λ _p	I _F = 15mA	–	585	–	nm
Spectral Line Half Width	λ	I _F = 15mA	–	32	–	nm

Precaution

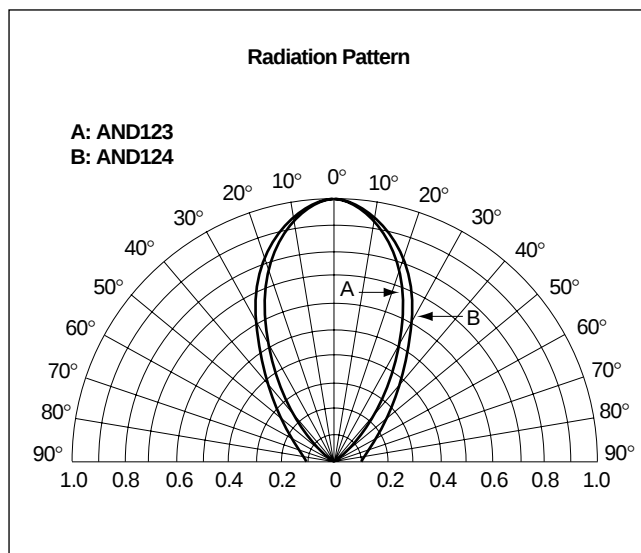
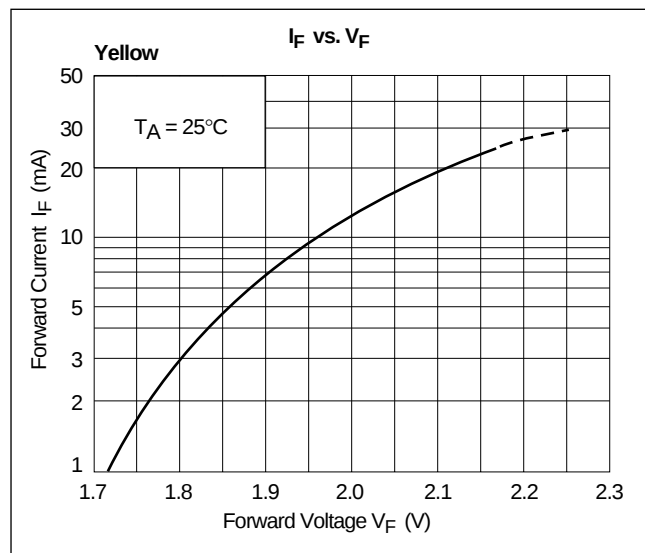
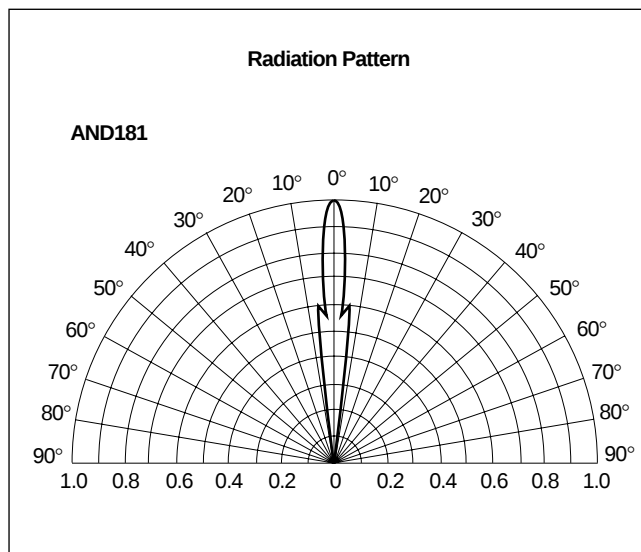
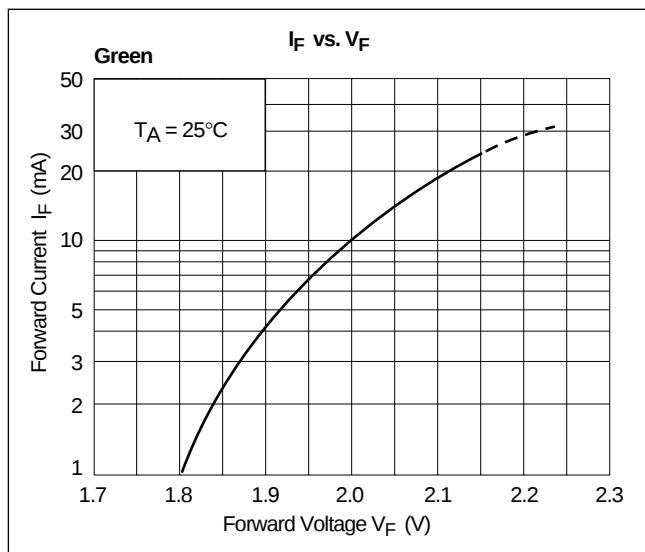
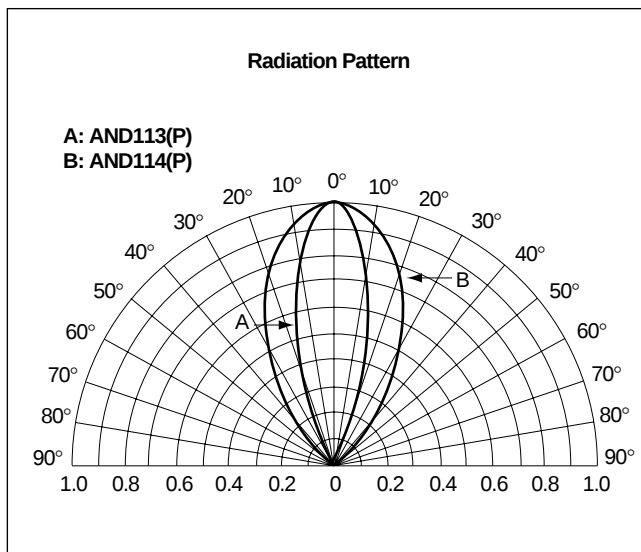
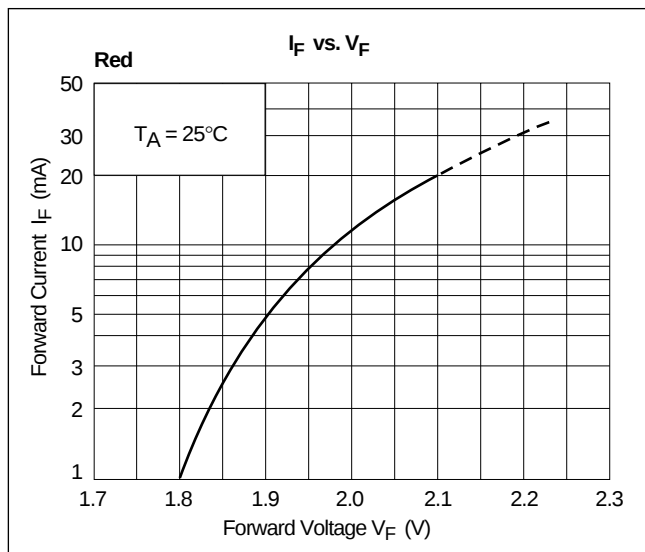
Please be careful of the following:

1. Soldering temperature: 260°C max; Soldering time: 3 sec. max; Soldering portion of lead: up to 2 mm from the body of the device.
2. The lead can be formed up to 5 mm from the body of the device without forming stress. Soldering should be performed after the lead forming.



AND113 (P), 114(P), 123, 124, 181

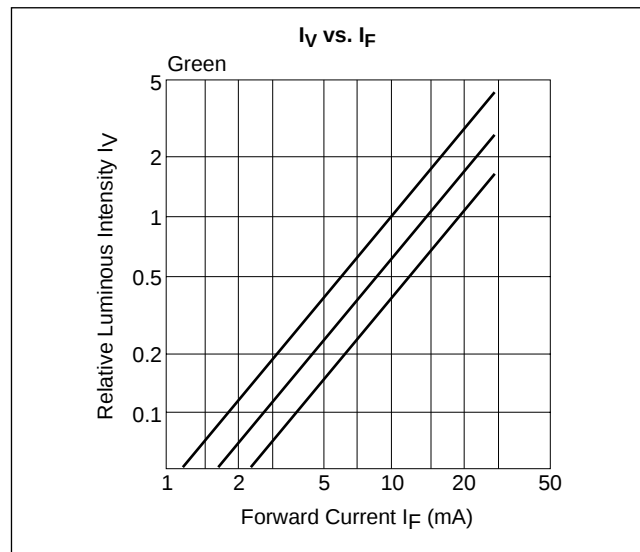
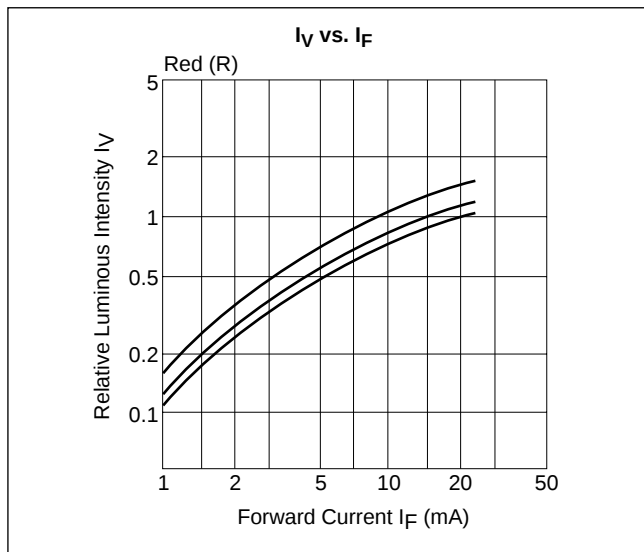
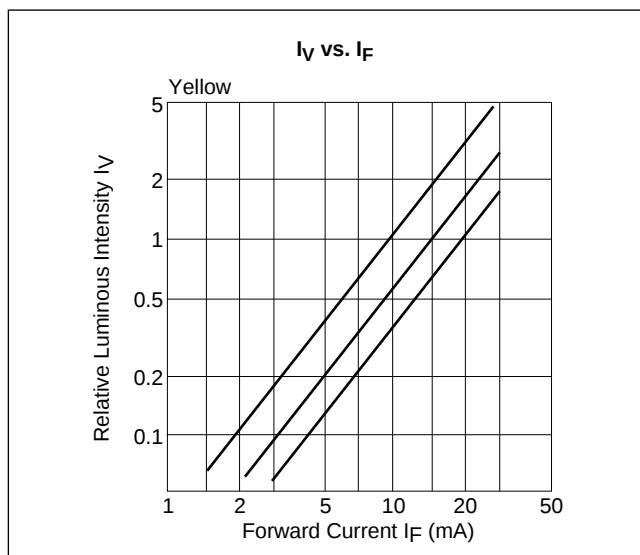
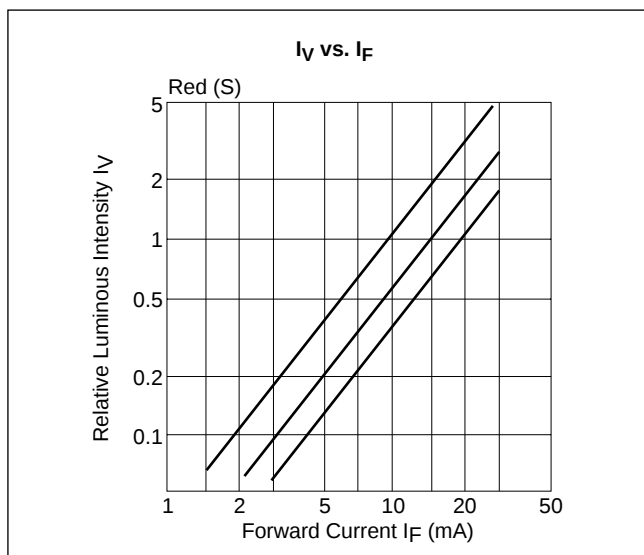
Standard Bright LED Lamps





AND113 (P), 114(P), 123, 124, 181

Standard Bright LED Lamps



This graph shows relative luminous vs. forward current.
At three points ($I_F = 10, 15, 20\text{mA}$) each relation is normalized.)



AND113 (P), 114(P), 123, 124, 181

Standard Bright LED Lamps

