



LED Lamps

ULTRA BRIGHT

T1¼

AND181P Series
AND182P Series

T1

AND163U Series
AND164U Series

T-41-21

FEATURES

- Ultra Bright
- Low drive current
- Solid state reliability, long life
- Excellent ON-OFF contrast ratio
- Fast response time, capable of pulse drive
- Choice of 4 colors
 - GaAlAs-red
 - GaP-green
 - GaAsP-yellow
 - GaAsP-Orange

AND181P and 182P Series - T1¼ Package Ultra Bright

Part Number	Color		Lens Description	Axial Luminous Intensity (mcd)		Test Condition (I _F -mA)	Viewing Angle 20½ (deg)
	Led	Lens		Min.	Typ.		
AND181RCP	Red	Red	Clear	250	500	20	15
AND182RCP	Red	Red	Diffused	150	300	20	25
AND181URP	Red	LT Red	Clear	125	250	20	15
AND182URP	Red	LT Red	Diffused	75	150	20	25
AND181SP	Red	LT Red	Clear	75	150	20	15
AND182SP	Red	LT Red	Diffused	45	90	20	25
AND181GP	Green	LT Green	Clear	100	200	20	15
AND182GP	Green	LT Green	Diffused	60	120	20	25
AND181YP	Yellow	LT Yellow	Clear	75	150	20	15
AND182YP	Yellow	LT Yellow	Diffused	45	90	20	25
AND181OP	Orange	LT Orange	Clear	75	150	20	15
AND182OP	Orange	LT Orange	Diffused	45	90	20	25

AND163U and 164U Series - T1 Package Ultra Bright

Part Number	Color		Lens Description	Axial Luminous Intensity (mcd)		Test Condition (I _F -mA)	Viewing Angle 20½ (deg)
	Led	Lens		Min.	Typ.		
AND163UR	Red	LT Red	Clear	50	100	20	10
AND164UR	Red	LT Red	Diffused	20	40	20	25
AND163UG	Green	LT Green	Clear	35	70	20	10
AND164UG	Green	LT Green	Diffused	15	30	20	25
AND163UY	Yellow	LT Yellow	Clear	20	40	20	10
AND164UY	Yellow	LT Yellow	Diffused	10	20	20	25

Absolute Maximum Ratings (T_A = 25°C)

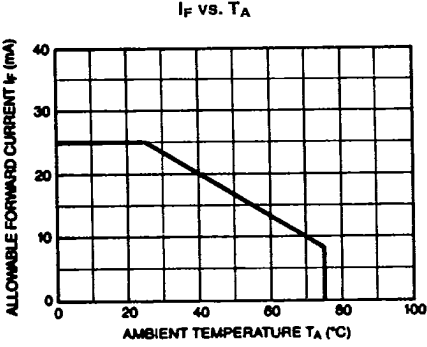
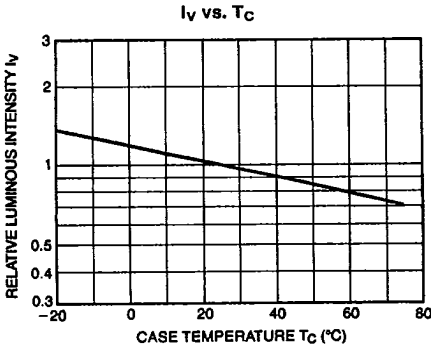
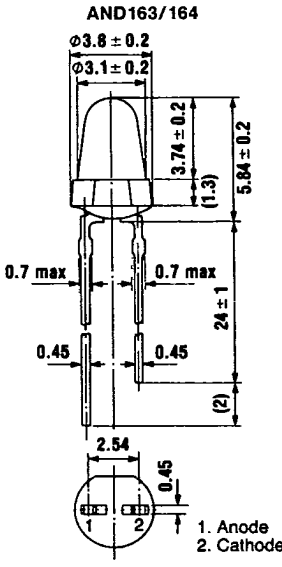
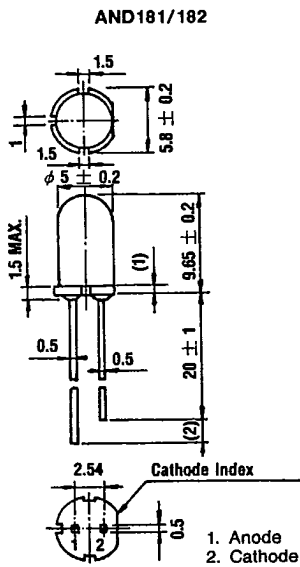
Characteristics	Symbol	Rating				Unit
		Red	Green	Yellow	Orange	
Forward Current (DC)	I _F	25	25	25	25	mA
Reverse Voltage	V _R	4	4	4	4	V
Power Dissipation	P _D	70	70	70	70	mW
Operating Temperature Range	T _{OPR}	-20 to +75				°C
Storage Temperature Range	T _{STC}	-30 to +100				°C

T-41-21

Electro-Optical Characteristics (T_A = 25°C)

Characteristics	Symbol	Test Condition	Red			Green			Yellow			Orange			Units
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward Voltage															
AND181 / 182, AND163U / 164U	V _F	I _F = 20mA		1.75	2.2		2.1	2.8		2.1	2.8		2.1	2.8	V
AND181SP / 182SP	V _F	I _F = 20mA		2.1	2.8										V
Reverse Current	I _R	V _R = 4V			100			5			100			100	μA
Peak Emission Wavelength															
AND181 / 182, AND163U / 164U	λ _P	I _F = 15mA		660			565			585			610		nm
AND181SP / 182SP	λ _P	I _F = 15mA		635											nm
Spectral Line Half Width															
AND181 / 182, AND163U / 164U	Δλ	I _F = 15mA		25			25			32			35		nm
AND181SP / 182SP	Δλ	I _F = 15mA		40											nm

Outline Dimension (in millimeters)





LED Lamps

ULTRA BRIGHT

T1^{3/4}

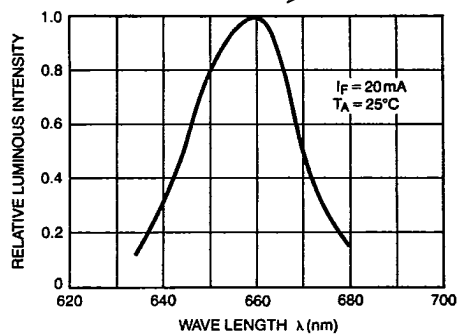
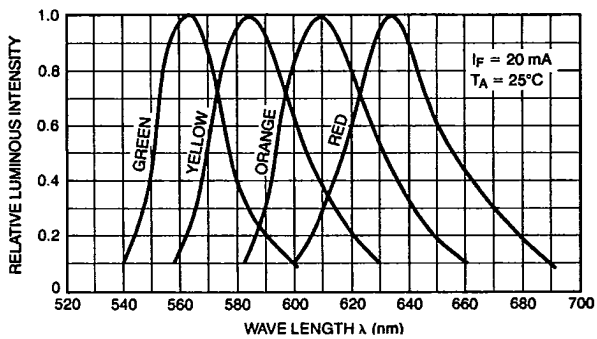
AND181P Series
AND182P Series

T1

AND163U Series
AND164U Series

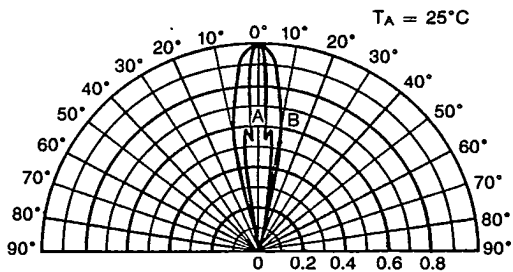
T-41-21

RELATIVE LUMINOUS INTENSITY vs. WAVE LENGTH

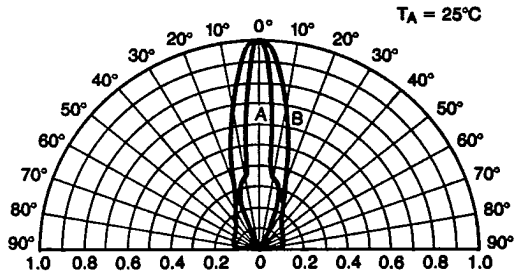


Radiation Pattern

A: AND181
B: AND182



A: AND163
B: AND164





LED Lamps

ULTRA BRIGHT

T1 3/4

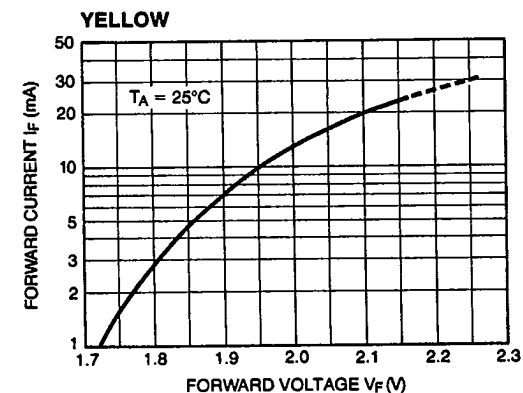
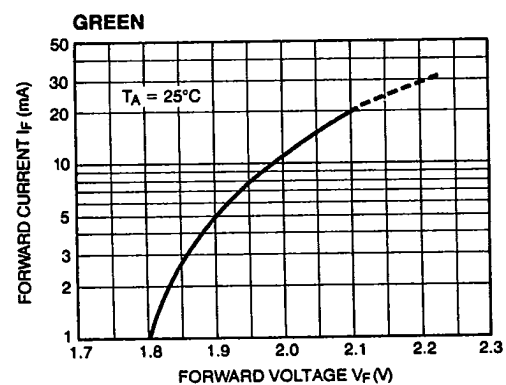
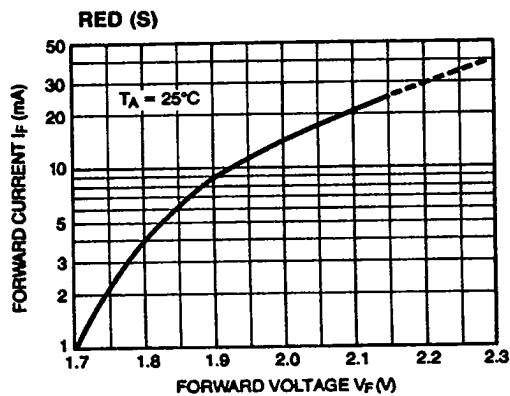
AND181P Series
AND182P Series

T1

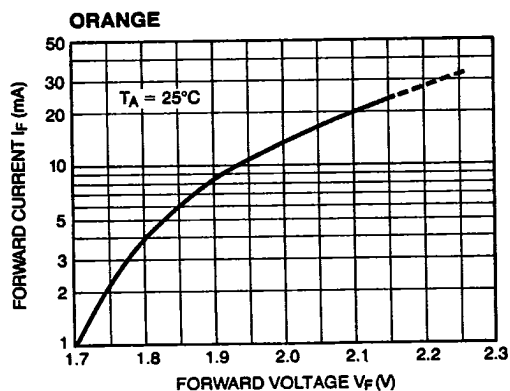
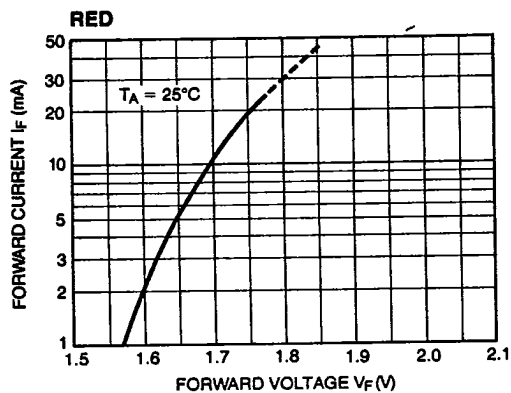
AND163U Series
AND164U Series

T-41-21

I_F vs. V_F

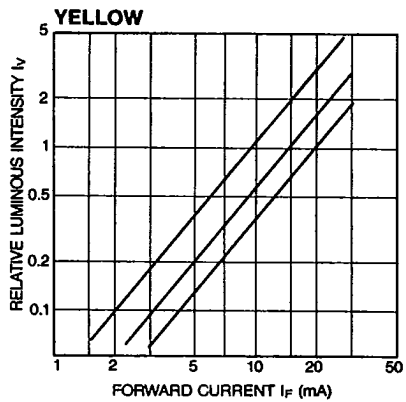
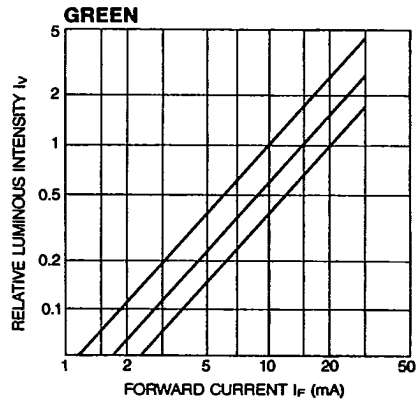
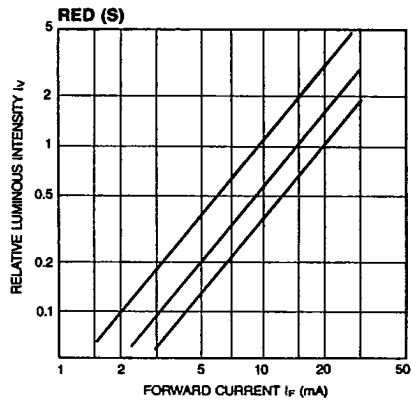


I_V vs. I_F



T-41-21

I_F vs. V_F



I_v vs. I_F

