

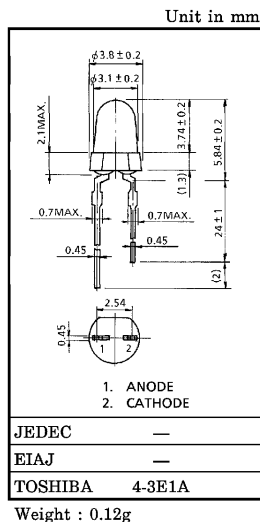
(TLG163)

HIGH PANEL CIRCUIT INDICATOR

- All Plastic Mold Type
TL□163 : Colored Transparent Lens
TL□164 : Colored Diffused Lens
- Low Drive Current, High Intensity Light Emission.
Recommended Forward Current: $I_F = 15 \sim 20 \text{ mA (DC)}$
- All Plastic Molded Lens, Provides an Excellent ON-OFF Contrast Ratio.
- Fast Response Time, Capable of Pulse Operation.

MATERIALS

PRODUCT NAME	Materials	Light emitting color
TLPG163 / TLPY164	GaP	Pure Green
TLG163 / TLG164	GaP	Green
TLUG163 / TLUG164	GaP	
TLPY164	GaP	Pure Yellow
TLY163 / TLY164	GaAsP	Yellow
TLUY163 / TLUY164	GaAsP	
TLO163 / TLO164	GaAsP	Orange
TLS163 / TLS164	GaAsP	Red
TLUR163 / TLUR164	GaAsP	



MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

PRODUCT NAME	Forward Current I_F (mA)	Reverse Voltage V_R (V)	Power Dissipation P_D (mW)	Operating Temperature Range T_{opr} ($^\circ\text{C}$)	Storage Temperature Range T_{stg} ($^\circ\text{C}$)
TLPG163 / TLPY164	25	4	70	$-20 \sim 75$	$-30 \sim 100$
TLG163 / TLG164	25	4	70	$-20 \sim 75$	$-30 \sim 100$
TLUG163 / TLUG164	25	4	70	$-20 \sim 75$	$-30 \sim 100$
TLPY164	25	4	70	$-20 \sim 75$	$-30 \sim 100$
TLY163 / TLY164	25	4	70	$-20 \sim 75$	$-30 \sim 100$
TLUY163 / TLUY164	25	4	70	$-20 \sim 75$	$-30 \sim 100$
TLO163 / TLO164	25	4	70	$-20 \sim 75$	$-30 \sim 100$
TLS163 / TLS164	25	4	70	$-20 \sim 75$	$-30 \sim 100$
TLUR163 / TLUR164	25	4	55	$-20 \sim 75$	$-30 \sim 100$

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In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

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ELECTRO-OPTICAL CHARACTERISTICS (Ta = 25°C)
163 SERIES (Colored Transparent Lens)

PRODUCT NAME	EMISSION SPECTRUM			LUMINOUS INTENSITY I _V			FORWARD VOLTAGE V _F			REVERSE CURRENT I _R	
	λ_p	$\Delta\lambda$	I _F	MIN.	TYP.	I _F	TYP.	MAX.	I _F	MAX.	V _R
TLPG163	555	20	15	6.0	20	20	2.15	2.8	20	5	4
TLG163	565	25	15	10	30	20	2.15	2.8	20	5	4
TLUG163	565	25	15	20	70	20	2.15	2.8	20	5	4
TLY163	585	32	15	10	20	20	2.05	2.8	20	100	4
TLUY163	585	32	15	20	40	20	2.05	2.8	20	100	4
TLO163	610	35	15	10	40	20	2.05	2.8	20	100	4
TLS163	635	40	15	10	40	20	2.05	2.8	20	100	4
TLUR163	660	25	15	20	40	20	1.75	2.2	20	100	4
Unit	nm		mA	mcd		mA	V		mA	μ A	V

164 SERIES (Colored Lusterless Lens)

PRODUCT NAME	EMISSION SPECTRUM			LUMINOUS INTENSITY I _V			FORWARD VOLTAGE V _F			REVERSE CURRENT I _R	
	λ_p	$\Delta\lambda$	I _F	MIN.	TYP.	I _F	TYP.	MAX.	I _F	MAX.	V _R
TLPG164	555	20	20	3.0	6.0	20	2.15	2.8	20	5	4
TLG164	565	25	20	5.0	15	20	2.15	2.8	20	5	4
TLUG164	565	25	20	10	30	20	2.15	2.8	20	5	4
TLPY164	570	25	20	1.5	3.0	20	2.15	2.8	20	100	4
TLY164	585	32	20	5.0	10	20	2.05	2.8	20	100	4
TLUY164	585	32	20	10	20	20	2.05	2.8	20	100	4
TLO164	610	35	20	9.0	20	20	2.05	2.8	20	100	4
TLS164	635	40	20	5.0	20	20	2.05	2.8	20	100	4
TLUR164	660	25	20	10	20	20	1.75	2.2	20	100	4
Unit	nm		mA	mcd		mA	V		mA	μ A	V

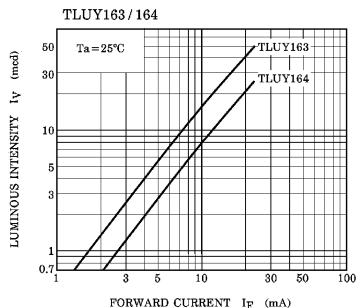
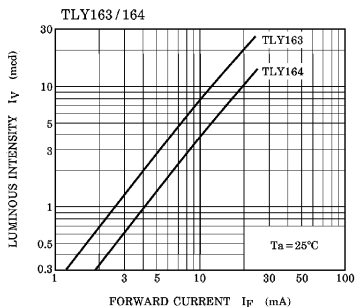
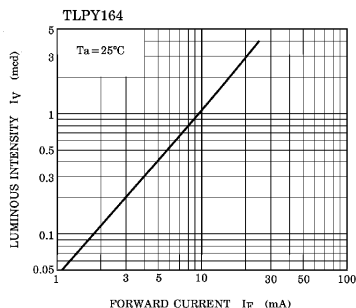
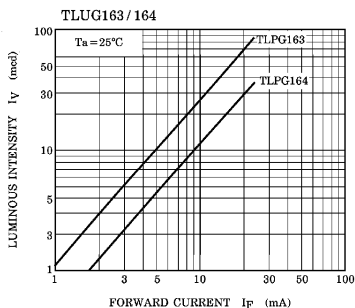
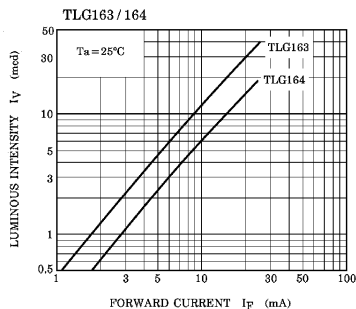
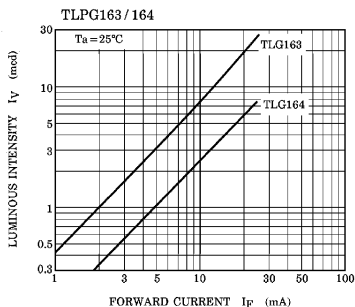
PRECAUTION

Please be careful of the followings.

- Soldering temperature : 260°C MAX. Soldering time : 3s MAX.
 (Soldering portion of lead : up to 2mm from the body of the device)
- If the lead is formed, the lead should be formed at a distance of 5mm from the body of the device.
 Soldering shall be performed after lead forming.

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$I_V - I_F$



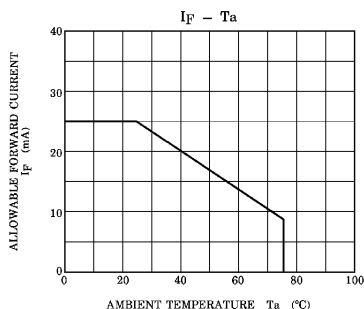
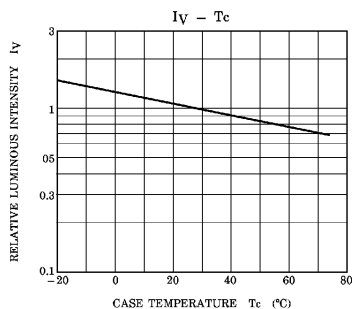
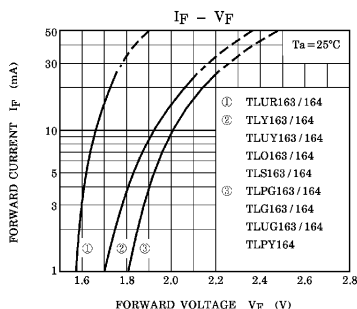
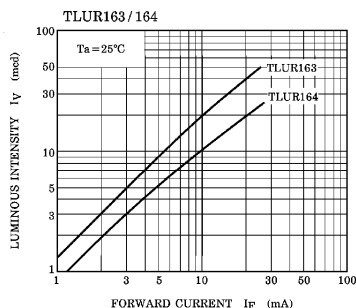
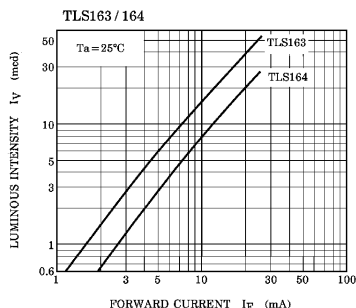
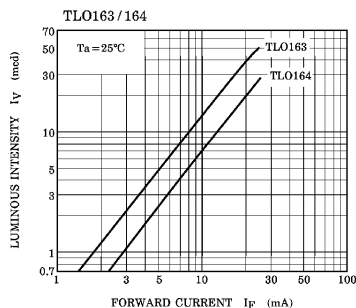
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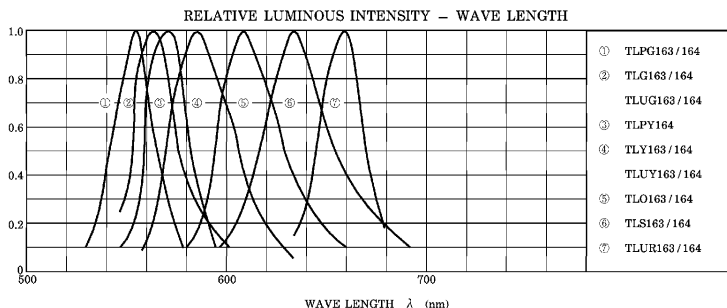
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$I_V - I_F$



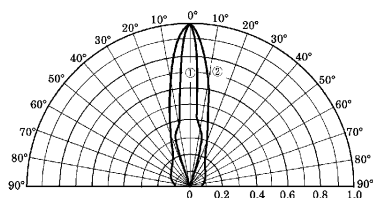
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RADIATION PATTERN

①: TL□163
②: TL□164

$T_a = 25^\circ\text{C}$



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