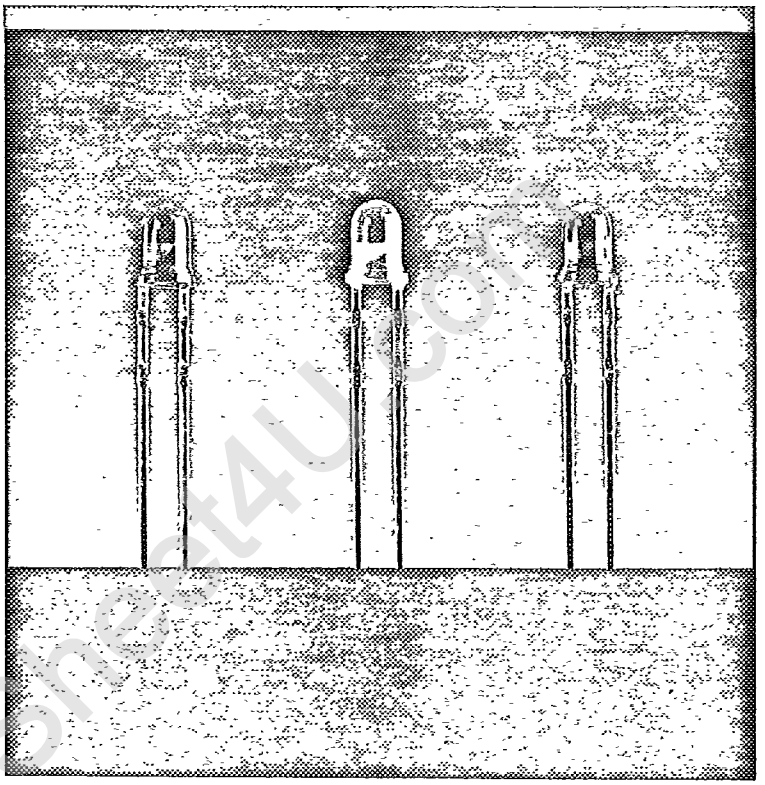
T-41-21

SLH-34 Series of T1 Super-Bright LED Lamps

Description

The SLH-34 Series of Super-Bright T1 LED lamps provides extremely high luminous intensity without high current requirements. Super-Bright LED lamps are ideal for applications where brightness is a primary concern, such as environments with high ambient light conditions. In addition, the small T1 size allows them to be used in applications where space is at a premium. These 3.1 mm diameter lamps feature GaP as the radiating substrate material. Seven emitting colors and a choice of three lenses provide a total of 17 Super-Bright LED lamps in the T1 size.



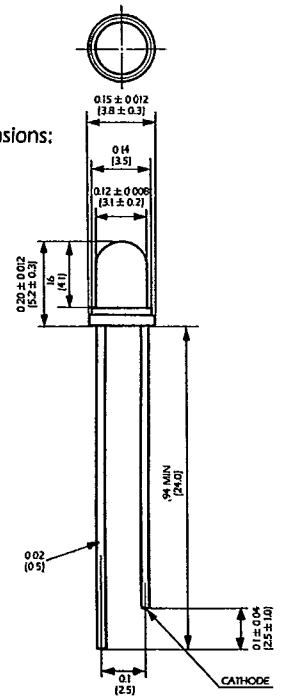
Features:

- Extremely high luminous intensity (minimums to 90 mcd)
- Low current requirements
- Seven emitting colors: red, high-efficiency red, orange, yellow, and three shades of green
- Choice of three lenses: colored diffused, colored transparent, and clear
- High reliability construction
- Shorter cathode lead for easier identification
- IC compatible
- No current vs. luminous intensity saturation
- 3.1 mm diameter package

Part Descriptions

Lens	Emitting Color				
	Red	Hi-Eff. Red	Orange	Yellow	Green
Colored Diffused	SLH-34VR3	SLH-34UR3	SLH-34DU3	SLH-34YY3	SLH-34GG3/MG3
Colored Transparent	SLH-34VC3	SLH-34URC3	SLH-34DC3	SLH-34YC3	SLH-34PC3
Clear	SLH-34VT3	SLH-34UT3	SLH-34DT3	SLH-34YT3	SLH-34MT3/PT3

Package Dimensions:
Inches (mm)



LUMINOUS INTENSITY I_V
Test Conditions: I_F = 20mA

Color	Type	Min	Typ	Unit
Red	SLH-34 VR3	36	80	mcd
	SLH-34 VC3	56	160	mcd
	SLH-34 VT3	90	200	mcd
High Efficiency Red	SLH-34 UR3	36	80	mcd
	SLH-34 UC3	56	160	mcd
	SLH-34 UT3	90	200	mcd
Orange	SLH-34 DU3	36	80	mcd
	SLH-34 DC3	56	160	mcd
	SLH-34 DT3	90	200	mcd
Yellow	SLH-34 YY3	36	80	mcd
	SLH34 YC3	56	160	mcd
	SLH-34 YT3	90	200	mcd
Yellow Green	SLH-34 GG3	36	80	mcd
Green	SLH-34 MG3	36	80	mcd
	SLH-34 MT3	90	200	mcd
Pure Green	SLH-34 PC3	36	80	mcd
	SLH-34 PT3	56	160	mcd

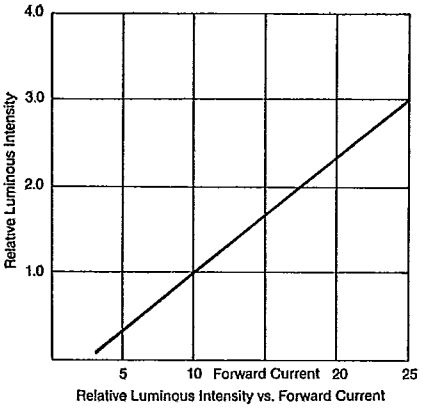
ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Red	High-Eff. Red	Orange	Yellow	Green	Unit
		SLH-34 VR3 SLH-34 VC3 SLH-34 VT3	SLH-34 UR3 SLH-34 UC3 SLH-34 UT3	SLH-34 DU3 SLH-34 DC3 SLH-34 DT3	SLH-34 YY3 SLH-34 YC3 SLH-34 YT3	SLH-34 GG3 SLH-34 MG3 SLH-34 PC3 SLH-34 MT3 SLH-34 PT3	
Power Dissipation	P_d	75	75	75	75	75	mW
Forward Current	I_F	25	25	25	25	25	mA
Peak Forward Current	I_{FP}	60	60	60	60	60	mA
Reverse Voltage	V_R	3	3	3	3	3	V
Operating Temperature	T_{opr}	−55 to 100					°C
Storage Temperature	T_{stg}	−55 to 100					°C
Lead Soldering Temperature	—	260°C (max 5 sec; min .063"/1.6mm from body)					—

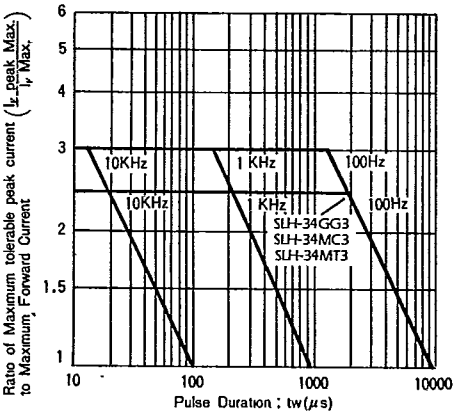
ELECTRO/OPTICAL CHARACTERISTICS (Ta = 25°C)

Parameter	Symbol	Condition	Red			Hi-Eff. Red			Orange			Yellow			Green			Unit
			Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Forward Voltage	V_F	I_F = 20mA	-	2.1	3.0	-	2.1	3.0	-	2.1	3.0	-	2.2	3.0	-	2.1	3.0	V
Reverse Current	I_R	V_R = 3V	-	-	10	-	-	10	-	-	10	-	-	10	-	-	10	μA
Peak Wavelength	λ_P	I_F = 20mA	-	650	-	-	635	-	-	610	-	-	585	-	-	*	-	nm
Spectral Line Half Width	$\Delta\lambda$	I_F = 20mA	-	40	-	-	40	-	-	40	-	-	40	-	-	40	-	nm
Included Angle Between Half		Diffused Type	-	50	-	-	50	-	-	50	-	-	50	-	-	50	-	deg
Luminous Intensity Points	20½	Trans-parent Type	-	30	-	-	30	-	-	30	-	-	30	-	-	30	-	deg

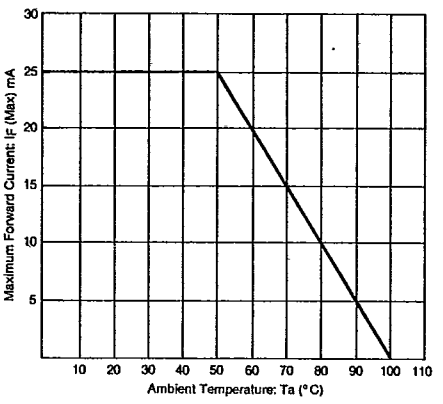
*Peak wavelength for SLH-34GG3 = 565 nm.
Peak wavelength for SLH-34MG3/MT3 = 563 nm.
Peak wavelength for SLH-34PC3/PT3 = 555 nm.



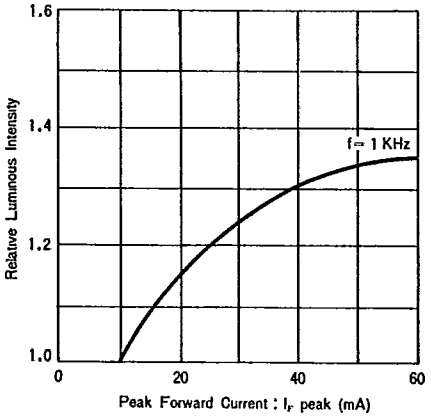
Forward Current vs. Luminous Intensity
ALL MODELS



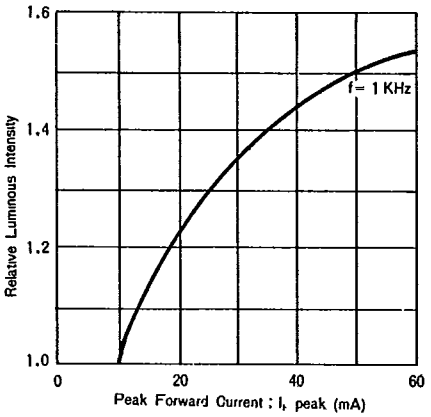
Pulse Duration vs. Maximum Tolerable Peak Current
ALL MODELS



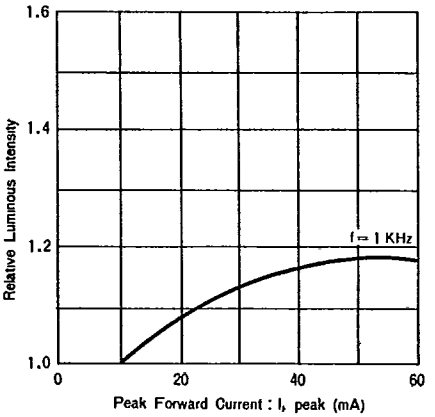
Ambient Temperature vs. Maximum Forward Current
ALL MODELS



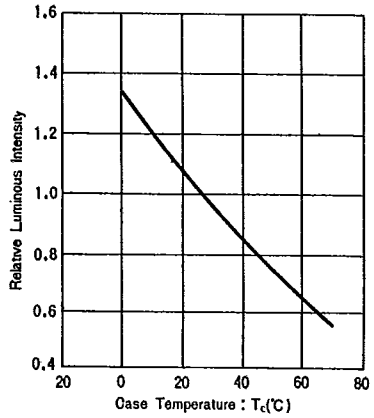
Peak Forward Current vs. Luminous Intensity
SLH-34VR3, SLH-34VC3, SLH-34VT3
SLH-34UR3, SLH-34URC3, SLH-34UT3
SLH-34DU3, SLH-34DC3, SLH-34DT3



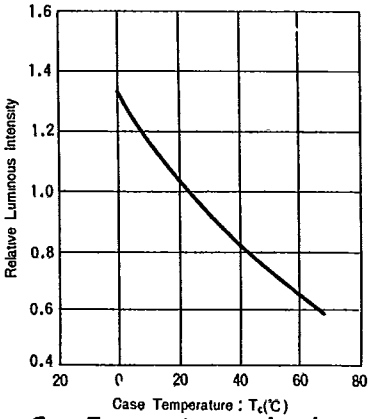
Peak Forward Current vs. Luminous Intensity
SLH-34YY3, SLH-34YC3, SLH-34YT3



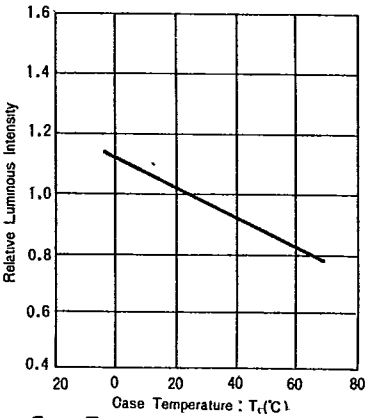
Peak Forward Current vs. Luminous Intensity
SLH-34GG3/MG3, SLH-34PC3
SLH-34MT3/PT3



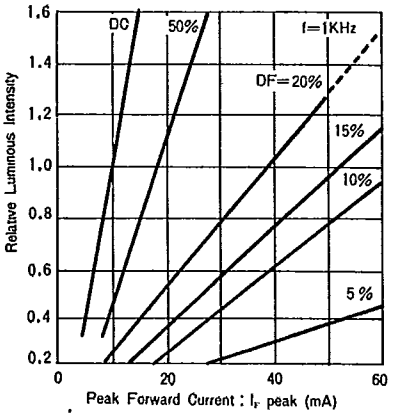
Case Temperature vs. Luminous Intensity
SLH-34VR3, SLH-34VC3, SLH-34VT3
SLH-34UR3, SLH-34URC3, SLH-34UT3



Case Temperature vs. Luminous Intensity
SLH-34DU3, SLH-34DC3, SLH-34DT3

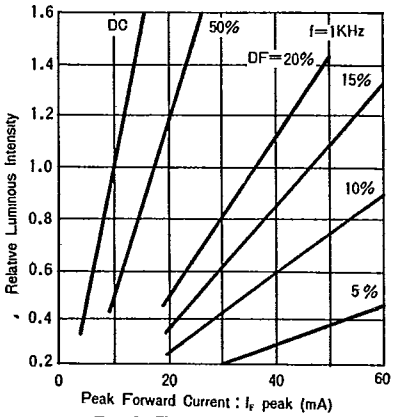


Case Temperature vs. Luminous Intensity
SLH-34YY3, SLH-34YC3, SLH-34YT3
SLH-34GG3/MG3, SLH-34PC3, SLH-34MT3/PT3



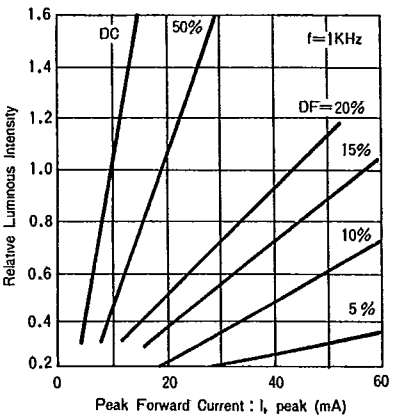
Peak Forward Current vs. Luminous Intensity

SLH-34VR3, SLH-34VC3, SLH-34VT3
SLH-34UR3, SLH-34URC3, SLH-34UT3
SLH-34DU3, SLH-34DC3, SLH-34DT3



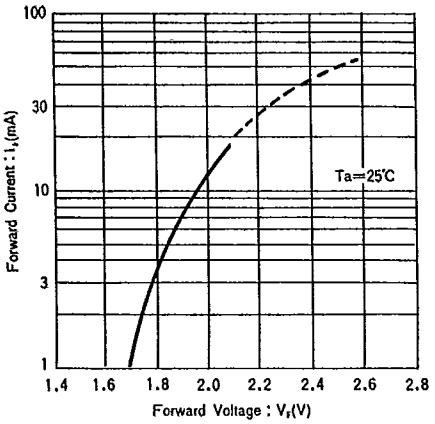
Peak Forward Current vs. Luminous Intensity

SLH-34YY3, SLH-34YC3, SLH-34YT3



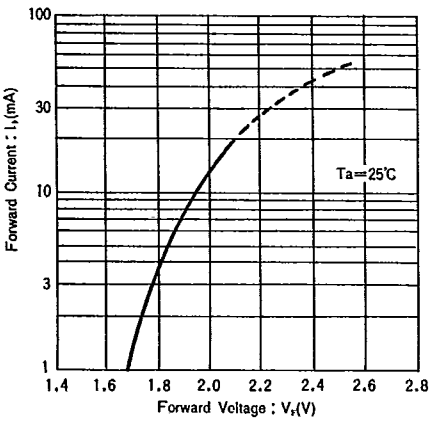
Peak Forward Current vs. Luminous Intensity

SLH-34GG3/MG3, SLH-34PC3
SLH-34MT3/PT3



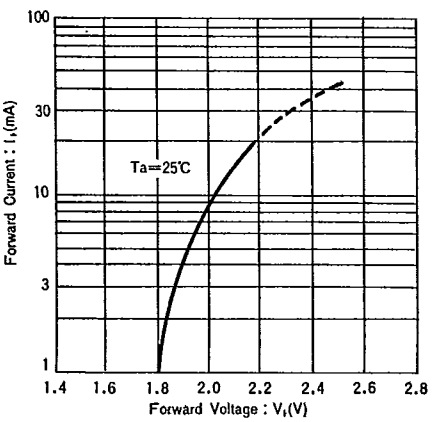
Forward Voltage vs. Forward Current

SLH-34VR3, SLH-34VC3, SLH-34VT3
SLH-34UR3, SLH-34URC3, SLH-34UT3



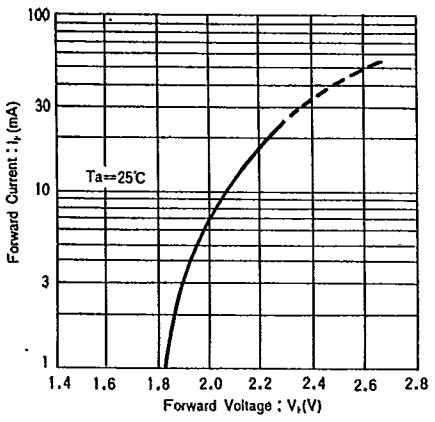
Forward Voltage vs. Forward Current

SLH-34DU3, SLH-34DC3, SLH-34DT3



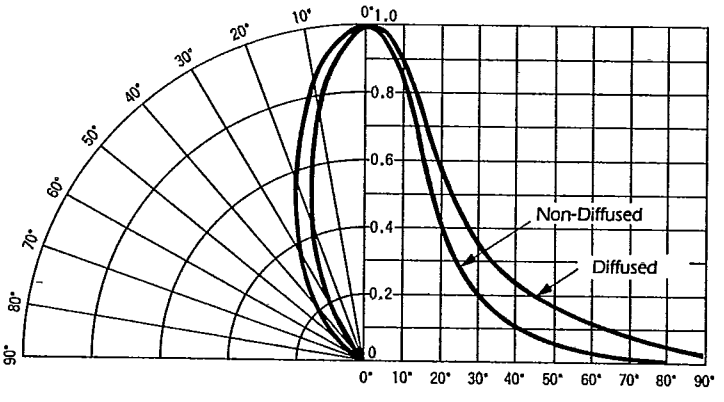
Forward Voltage vs. Forward Current

SLH-34YY3, SLH-34YC3, SLH-34YT3



Forward Voltage vs. Forward Current

SLH-34GG3/MG3, SLH-34PC3
SLH-34MT3/PT3



Directional Pattern

ALL MODELS