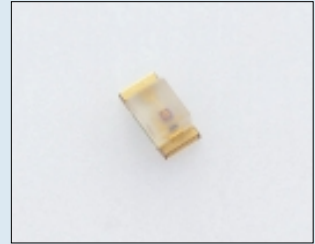


4 Product List for SMD Type

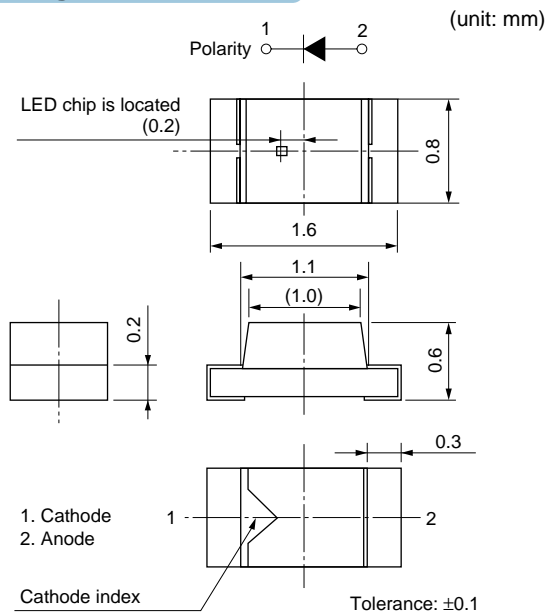
1. TL*1008A (T04), TL*1008A (T5)

Features

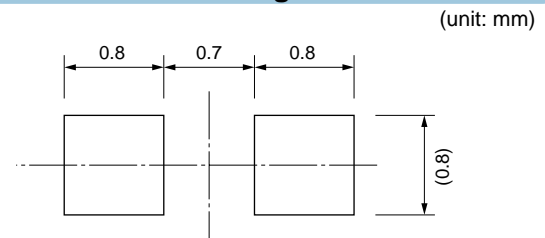
- Package dimensions: 1.6 (L) x 0.8 (W) x 0.6 (H) mm
- Four-element (InGaAlP)
- High-brightness and low power consumption can be accomplished by a switch-over from general-purpose lamps.
- Taping with 4 mm (T04 specification) and 2 mm (T05 specification) pitch is standard. Achieves mounting efficiency.
- Product height of 0.6 mm is suitable for use as backlighting for thin equipment.



Package Dimensions



Recommended Soldering Pad Dimensions



Maximum Rating

(Ta = 25°C)

Characteristics	Symbol	Rating	Unit
DC Forward Current	I _F	25	mA
DC Reverse Voltage	V _R	4	V
Power Dissipation	P _d	60~62.5 (Note 1)	mW
Operating Temperature	T _{opr}	-40~85	°C
Storage Temperature	T _{stg}	-40~100	°C

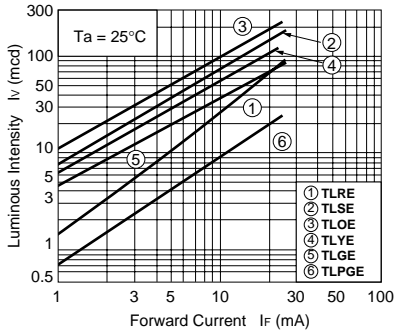
Note 1: please refer to each technical datasheet.

Electrical and Optical Characteristics

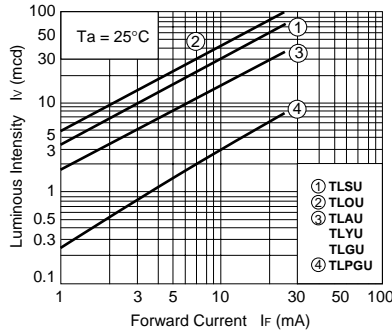
Series Name	Emitted-Light Color	Product Number	Typical Luminous Intensity I _v (mcd)		Forward Voltage V _F (V)		Reverse Current I _R (μA)	Typical Emission Wavelength (nm)		
			@I _F = 20 mA		@I _F = 20 mA			@I _F = 20 mA		
			Min	Typ.	Typ.	Max	Max	λ _p	Δλ	λ _d
TL*E Series	Red	TLRE1008A(T04)/(T05)	27.2	70	1.9	2.4	50	644	18	630
	Red	TLSE1008A(T04)/(T05)	47.6	140	1.9	2.4	50	623	17	613
	Orange	TLOE1008A(T04)/(T05)	47.6	180	2.0	2.4	50	612	15	605
	Yellow	TLYE1008A(T04)/(T05)	27.2	105	2.0	2.4	50	590	13	587
	Green	TLGE1008A(T04)/(T05)	27.2	70	2.0	2.4	50	574	11	571
	Pure green	TLPGE1008A(T04)/(T05)	4.76	18	2.1	2.4	50	562	11	558
TL*U Series	Red	TLSU1008A(T04)/(T05)	27.2	60	2.0	2.4	50	636	17	623
	Orange	TLOU1008A(T04)/(T05)	27.2	78	2.1	2.5	50	612	15	605
	Amber	TLAU1008A(T04)/(T05)	8.5	30	2.1	2.5	50	596	13	592
	Yellow	TLYU1008A(T04)/(T05)	8.5	30	2.1	2.5	50	590	13	587
	Green	TLGU1008A(T04)/(T05)	8.5	30	2.1	2.5	50	574	11	571
	Pure green	TLPGU1008A(T04)/(T05)	1.53	6	2.1	2.5	50	562	11	558

Characteristics Diagram

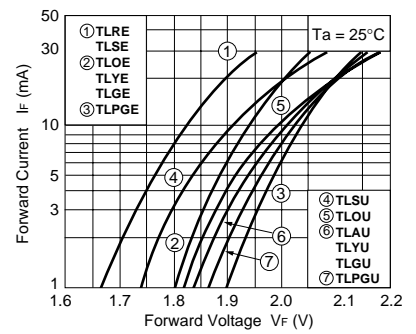
Iv – If



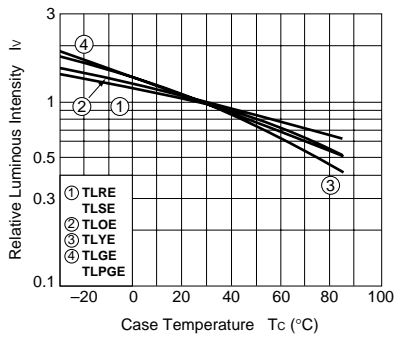
Iv – If



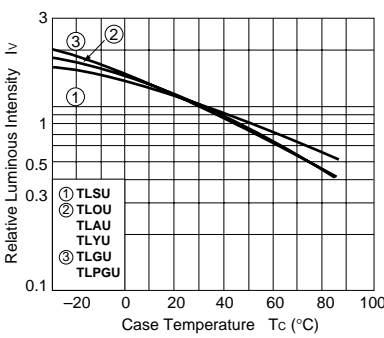
If – Vf



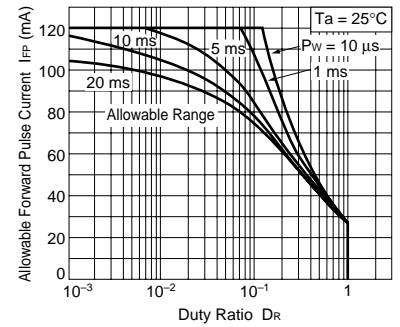
Iv – Tc



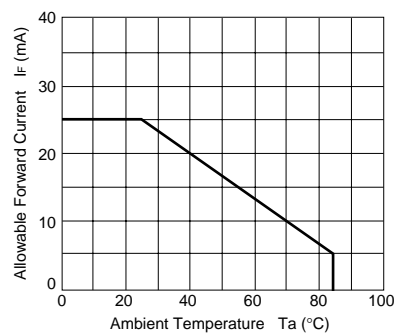
Iv – Tc



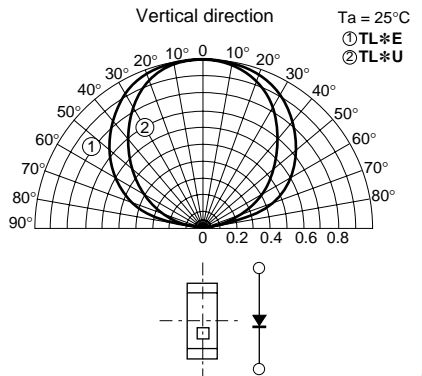
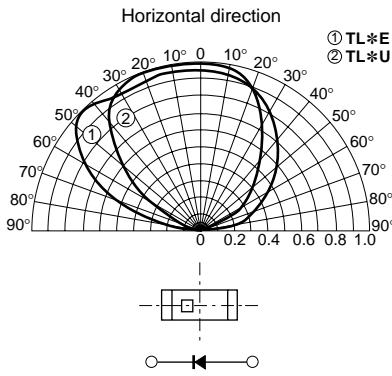
Allowable forward pulse current characteristics



If – Ta



Radiation pattern



Tape Specifications

Tape Packing Type	Tape Type Suffix	Pitches	Packing		Quantity/Reel
			Package dimensions (mm)	Appearance	
Embossed Tape Packing	T04	4 mm			4000/reel
Embossed Tape Packing	T05	2 mm			8000/reel

4 Product List for SMD Type

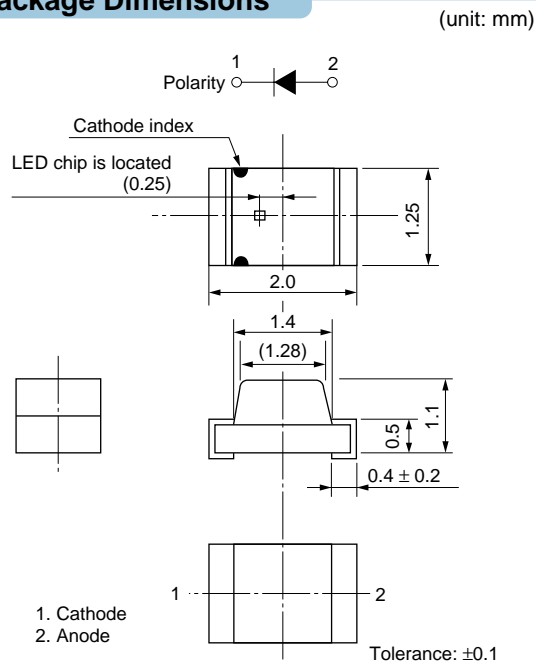
2. TL*1002A (T02)

Features

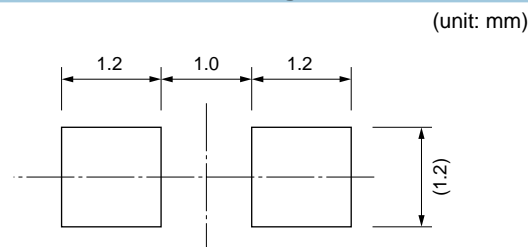
- Package dimensions: 2.0 (L) x 1.25 (W) x 1.1 (H) mm
- Four-element (InGaAlP)
- High-brightness and low power consumption can be accomplished by a switchover from general-purpose lamps.
- Product height of 1.1 mm is suitable for use as backlighting for thin equipment.



Package Dimensions



Recommended Soldering Pad Dimensions



Maximum Rating

(Ta = 25°C)

Characteristics	Symbol	Rating	Unit
DC Forward Current	I _F	25	mA
DC Reverse Voltage	V _R	4	V
Power Dissipation	P _D	60~62.5 (Note 1)	mW
Operating Temperature	T _{opr}	-40~85	°C
Storage Temperature	T _{stg}	-40~100	°C

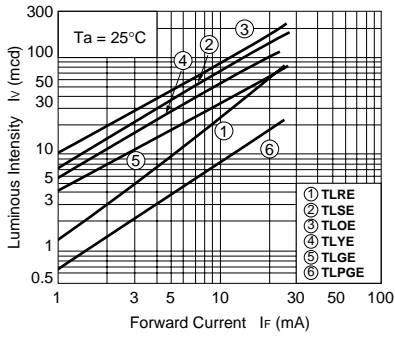
Note 1: please refer to each technical datasheet.

Electrical and Optical Characteristics

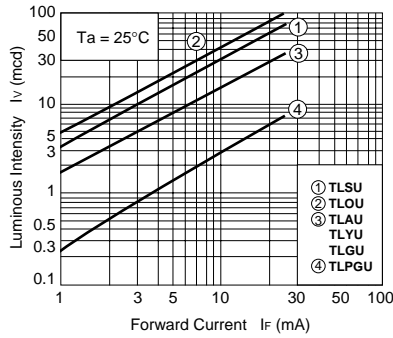
Series Name	Emitted-Light Color	Product Number	Typical Luminous Intensity I _v (mcd) @ I _F = 20 mA		Forward Voltage V _F (V) @ I _F = 20 mA		Reverse Current I _R (μA) @ V _R = 4 V	Typical Emission Wavelength (nm) @ I _F = 20 mA		
			Min	Typ.	Typ.	Max		λ _p	Δλ	λ _d
TL*E Series	Red	TLRE1002A(T02)	27.2	70	1.9	2.4	50	644	18	630
	Red	TLSE1002A(T02)	47.6	140	1.9	2.4	50	623	17	613
	Orange	TLOE1002A(T02)	47.6	180	2.0	2.4	50	612	15	605
	Yellow	TLYE1002A(T02)	27.2	105	2.0	2.4	50	590	13	587
	Green	TLGE1002A(T02)	27.2	70	2.0	2.4	50	574	11	571
	Pure green	TLPGE1002A(T02)	4.76	18	2.1	2.4	50	562	11	558
TL*U Series	Red	TLRU1002A(T02)	15.3	45	2.0	2.4	50	644	18	630
	Red	TLSU1002A(T02)	27.2	60	2.0	2.4	50	636	17	623
	Orange	TLOU1002A(T02)	27.2	78	2.1	2.5	50	612	15	605
	Amber	TLAU1002A(T02)	8.5	30	2.1	2.5	50	596	13	592
	Yellow	TLYU1002A(T02)	8.5	30	2.1	2.5	50	590	13	587
	Green	TLGU1002A(T02)	8.5	30	2.1	2.5	50	574	11	571
	Pure green	TLPGU1002A(T02)	1.53	6	2.1	2.5	50	562	11	558

Characteristics Diagram

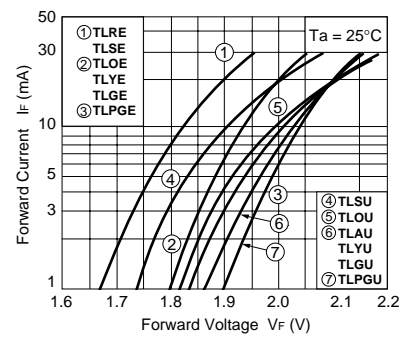
Iv – If



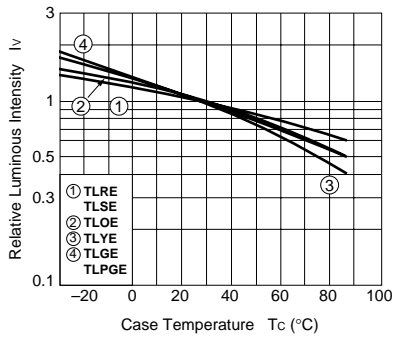
Iv – If



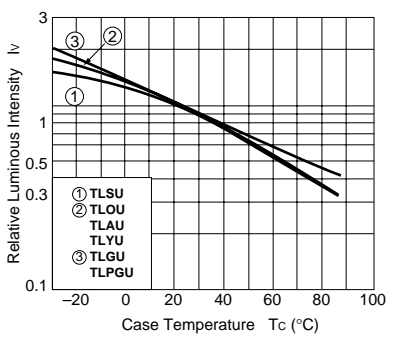
If – Vf



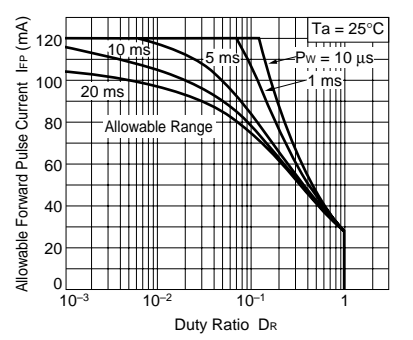
Iv – Tc



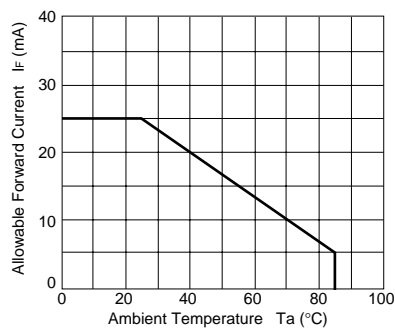
Iv – Tc



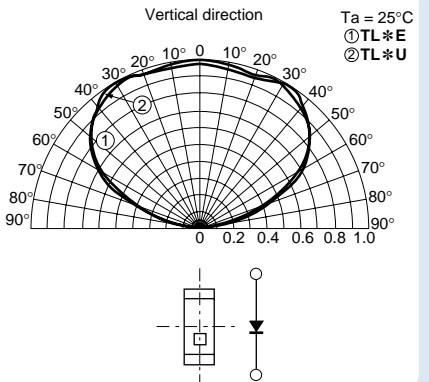
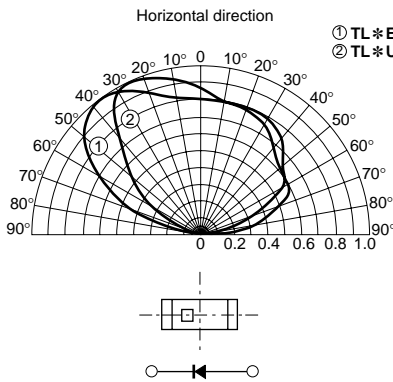
Allowable forward pulse current characteristics



If – Ta



Radiation pattern



Tape Specifications

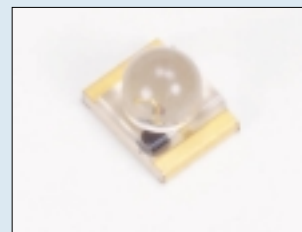
Tape Packing Type	Tape Type Suffix	Pitches	Packing		Quantity/Reel
			Package dimensions (mm)	Appearance	
Embossed Tape Packing	T02	4 mm			3000/reel

4 Product List for SMD Type

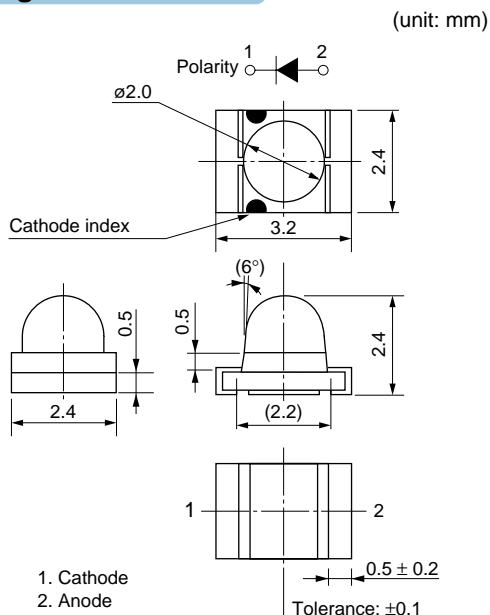
3. TL*E1005B (T03), TL*U1005A (T03)

Features

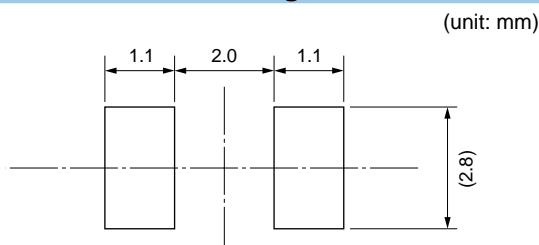
- Package dimensions: 3.2 (L) x 2.4 (W) x 2.4 (H) mm
- Unique $\phi 2$ mm lens top structure substantially improves light extraction.
- Designed for miniaturization and slimming while maintaining high luminance
- Optical axis precision is substantially improved over lead-frame structure LEDs.
Designed to reduce nonuniformity in the display



Package Dimensions



Recommended Soldering Pad Dimensions



Maximum Rating

(Ta = 25°C)

Characteristics	Symbol	Rating	Unit
DC Forward Current	I _F	25	mA
DC Reverse Voltage	V _R	4	V
Power Dissipation	P _D	60~62.5 (Note 1)	mW
Operating Temperature	T _{opr}	TL*U	-25~80
		TL*E	-40~85
Storage Temperature	T _{stg}	TL*U	-30~85
		TL*E	-40~100

Note 1: please refer to each technical datasheet.

Electrical and Optical Characteristics

Series Name	Emitted-Light Color	Product Number	Typical Luminous Intensity I _v (mcd) @ I _F = 20 mA		Forward Voltage V _F (V) @ I _F = 20 mA		Reverse Current I _R (μA) @ V _R = 4 V	Typical Emission Wavelength (nm) @ I _F = 20 mA		
			Min	Typ.	Typ.	Max	Max	λ _p	Δλ	λ _d
TL*E Series	Red	TLRE1005B(T03)	153	450	1.9	2.4	50	644	18	630
	Red	TLSE1005B(T03)	272	1000	1.9	2.4	50	623	17	613
	Orange	TLOE1005B(T03)	476	1500	2.0	2.4	50	612	15	605
	Yellow	TLYE1005B(T03)	272	850	2.0	2.4	50	590	13	587
	Green	TLGE1005B(T03)	153	350	2.0	2.4	50	574	11	571
	Pure green	TLPGE1005B(T03)	47.6	130	2.1	2.4	50	562	11	558
TL*U Series	Red	TLSU1005A(T03)	153	450	2.0	2.4	50	636	17	623
	Orange	TLOU1005A(T03)	153	450	2.0	2.4	50	612	15	605
	Yellow	TLYU1005A(T03)	47.6	140	2.1	2.5	50	590	13	587

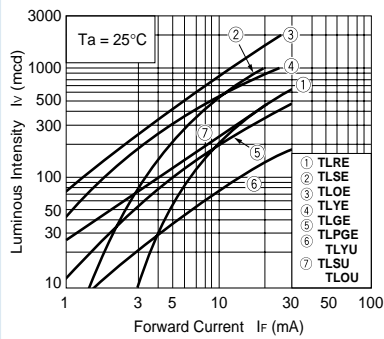
Automatic Mounting: Recommended Conditions

Absorption Head Diameter	ø1.2 mm
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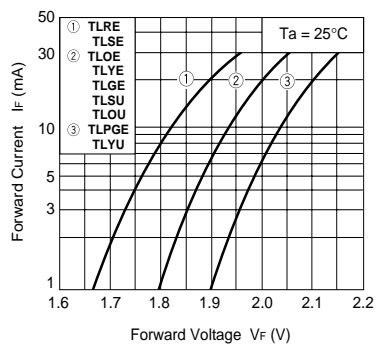
Please ask the mounting equipment maker for the ideal automatic mounting conditions.

Characteristics Diagram

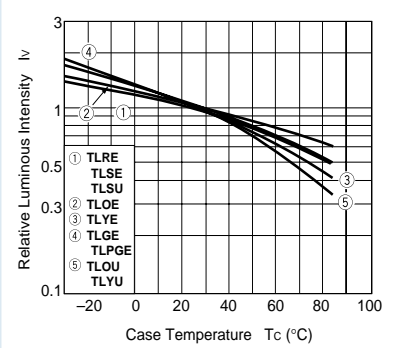
$I_v - I_f$



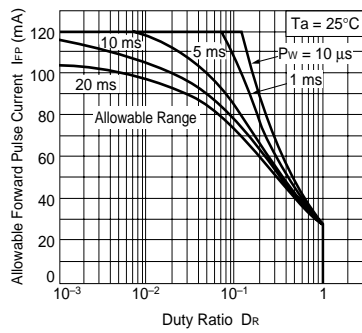
$I_f - V_f$



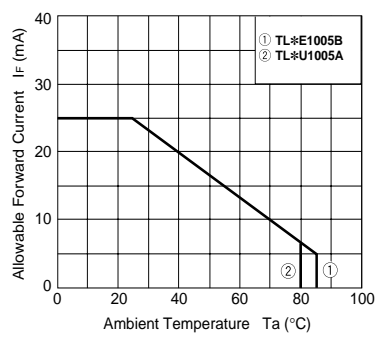
$I_v - T_c$



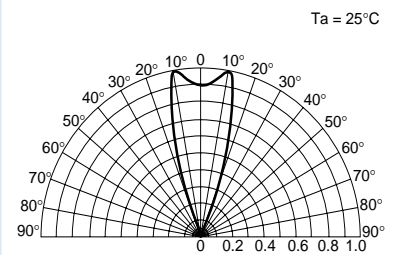
Allowable forward pulse current characteristics



$I_f - T_a$



Radiation pattern



Tape Specifications

Tape Packing Type	Tape Type Suffix	Pitches	Packing		Quantity/Reel
			Package dimensions (mm)	Appearance	
Embossed Tape Packing	T03	4 mm			1000/reel

4 Product List for SMD Type

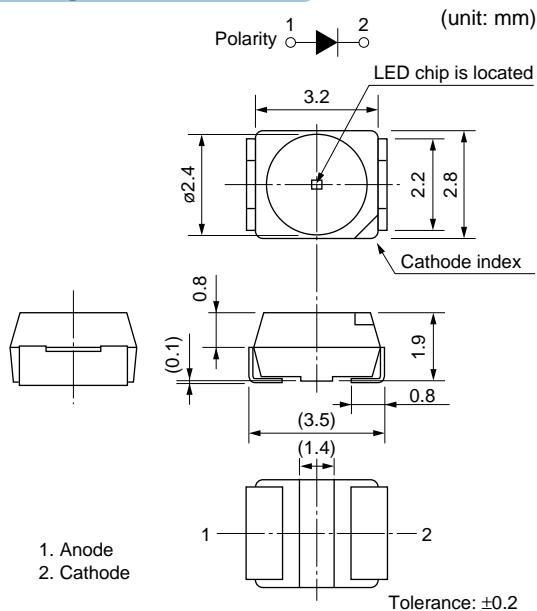
4. TL*1100 (T09), TL*E1100 (T11), S4F42* (T09)

Features

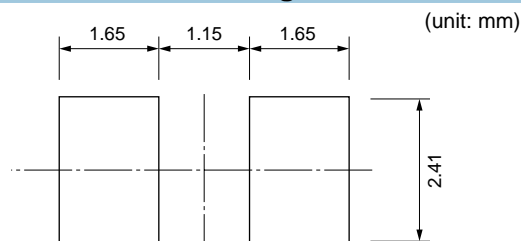
- Package dimensions: 3.2 (L) x 2.8 (W) x 1.9 (H) mm
- Four-element (InGaAlP)
- High-heat resistance extends the operating temperature range.
Topr = -40~100°C



Package Dimensions



Recommended Soldering Pad Dimensions



Maximum Rating

(Ta = 25°C)

Characteristics	Symbol	Rating	Unit
DC Forward Current	IF	30/50 (Note 1)	mA
DC Reverse Voltage	VR	4	V
Power Dissipation	PD	72~140 (Note 1)	mW
Operating Temperature	Topr	-40~100	°C
Storage Temperature	Tstg	-40~100	°C

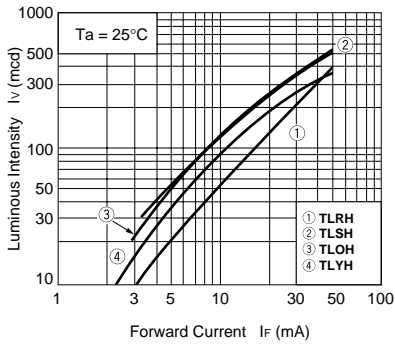
Note 1: please refer to each technical datasheet.

Electrical and Optical Characteristics

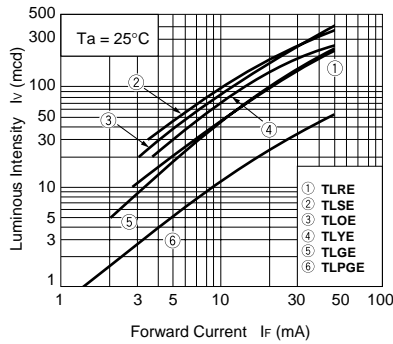
Series Name	Emitted-Light Color	Product Number	Typical Luminous Intensity Iv (mcd) @IF = 20 mA		Forward Voltage VF (V) @IF = 20 mA		Reverse Current IR (μA) @VR = 4 V	Typical Emission Wavelength (nm) @IF = 20 mA		
			Min	Typ.	Typ.	Max		Max	λp	Δλ
TL*H Series	Red	TLRH1100(T09)	47.6	130	1.9	2.5	50	644	18	630
	Red	TLSH1100(T09)	85	240	2.1	2.5	50	623	15	613
	Orange	TLOH1100(T09)	85	260	2.1	2.5	50	612	15	605
	Yellow	TLYH1100(T09)	85	190	2.1	2.5	50	590	13	587
TL*E Series	Red	TLRE1100(T11)	47.6	100	1.9	2.4	50	644	18	630
	Red	TLSE1100(T11)	47.6	180	1.9	2.4	50	623	15	613
	Orange	TLOE1100(T11)	47.6	180	2.0	2.4	50	612	15	605
	Yellow	TLYE1100(T11)	47.6	150	2.0	2.4	50	590	13	587
	Green	TLGE1100(T11)	47.6	100	2.0	2.4	50	574	11	571
	Pure green	TLPGE1100(T11)	8.5	25	2.1	2.4	50	562	11	558
TL*U Series	Red	TLSU1100(T09)	27.2	80	2.0	2.4	50	636	17	623
	Orange	TLOU1100(T09)	47.6	100	2.0	2.4	50	612	15	605
	Yellow	TLYU1100(T09)	15.3	50	2.1	2.5	50	590	13	587
	Green	TLGU1100(T09)	15.3	45	2.3	2.8	50	574	11	571
	Pure green	TLPGU1100(T09)	4.76	12	2.3	2.8	50	562	11	558
Others	Green	S4F42Q1(T09)	47.6	110	2.27	2.8	50	574	11	571
	Pure green	S4F42Z1(T09)	8.5	25	2.27	2.8	50	562	11	558

Characteristics Diagram

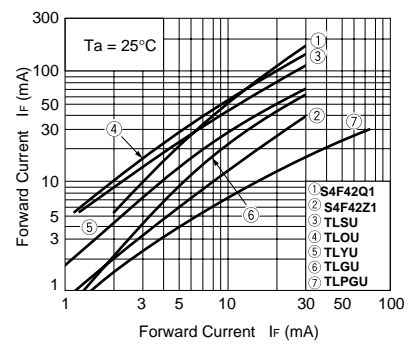
Iv – If



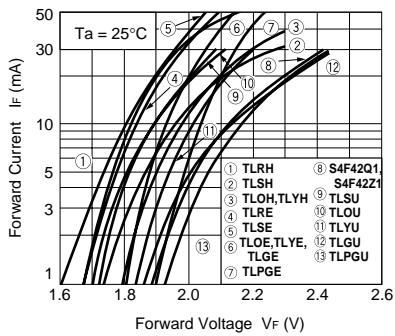
Iv – If



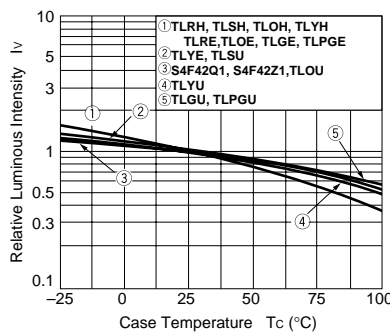
Iv – If



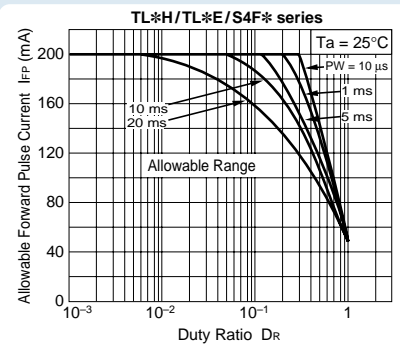
If – Vf



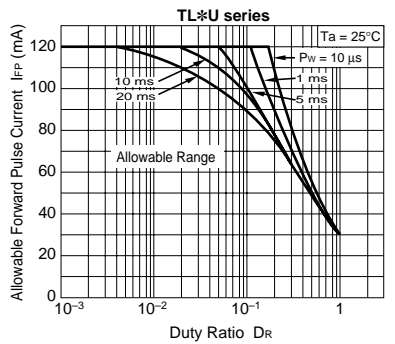
Iv – Tc



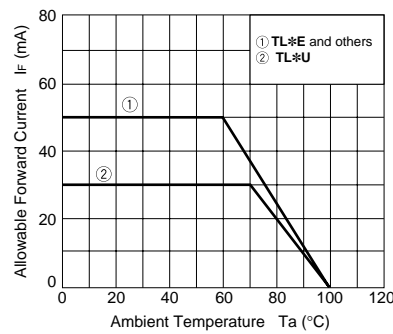
Allowable forward pulse current characteristics



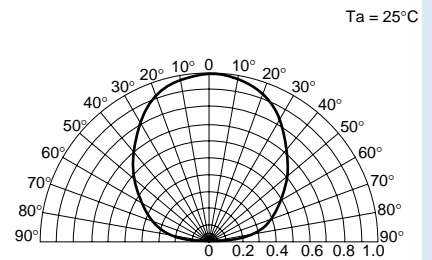
Allowable forward pulse current characteristics



If – Ta



Radiation pattern



Tape Specifications

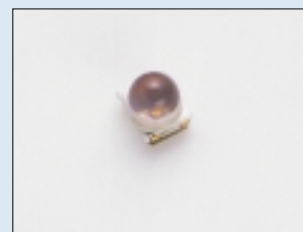
Tape Packing Type	Tape Type Suffix	Pitches	Packing		Quantity/Reel
			Package dimensions (mm)	Appearance	
Embossed Tape Packing	T09	8 mm			1000/reel
Embossed Tape Packing	T11	4 mm			2000/reel

4 Product List for SMD Type

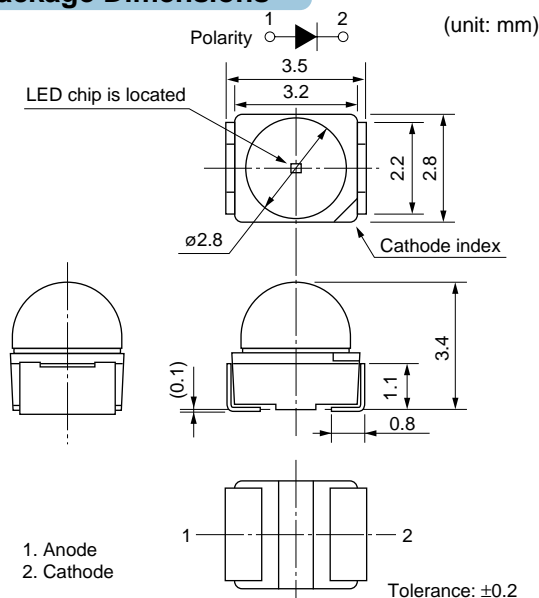
5. TL*1102 (T10), S4F43* (T10)

Features

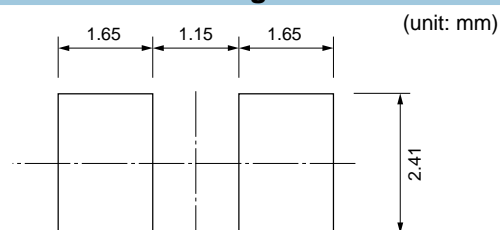
- Package dimensions: 3.2 (L) x 2.8 (W) x 3.4 (H) mm
- 4-element (InGaAlP), H Series / U Series
- High-heat resistance extends the operating temperature range.
Topr = -40~100°C



Package Dimensions



Recommended Soldering Pad Dimensions



Maximum Rating

(Ta = 25°C)

Characteristics	Symbol	Rating	Unit
DC Forward Current	IF	30/50 (Note 1)	mA
DC Reverse Voltage	VR	4	V
Power Dissipation	PD	72~140 (Note 1)	mW
Operating Temperature	Topr	-40~100	°C
Storage Temperature	Tstg	-40~100	°C

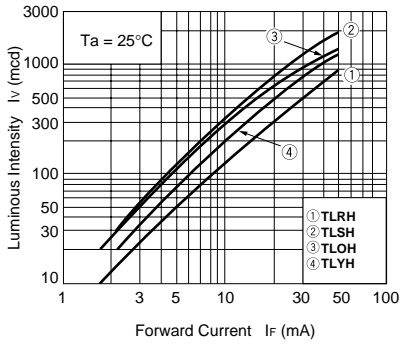
Note1: please refer to each technical datasheet.

Electrical and Optical Characteristics

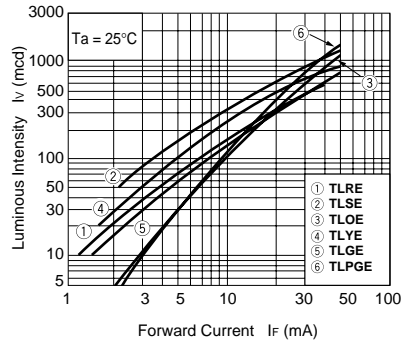
Series Name	Emitted-Light Color	Product Number	Typical Luminous Intensity Iv (mcd) @IF = 20 mA		Forward Voltage VF (V) @IF = 20 mA		Reverse Current IR (µA) @VR = 4 V	Typical Emission Wavelength (nm) @IF = 20 mA		
			Min	Typ.	Typ.	Max		Max	λp	Δλ
TL*H Series	Red	TLRH1102(T10)	85	320	1.9	2.5	50	644	18	630
	Red	TLSH1102(T10)	153	600	2.1	2.5	50	623	15	613
	Orange	TLOH1102(T10)	272	650	2.1	2.5	50	612	15	605
	Yellow	TLYH1102(T10)	153	480	2.1	2.5	50	590	13	587
TL*E Series	Red	TLRE1102(T10)	85	320	1.9	2.4	50	644	18	630
	Red	TLSE1102(T10)	272	600	1.9	2.4	50	623	17	613
	Orange	TLOE1102(T10)	272	650	2.0	2.4	50	612	15	605
	Yellow	TLYE1102(T10)	153	480	2.0	2.4	50	590	13	587
	Green	TLGE1102(T10)	85	300	2.0	2.4	50	574	11	571
	Pure green	TLPGE1102(T10)	27.2	75	2.1	2.4	50	562	11	558
TL*U Series	Red	TLSU1102(T10)	85	200	2.0	2.4	50	636	17	623
	Orange	TLOU1102(T10)	85	250	2.0	2.4	50	612	15	605
	Yellow	TLYU1102(T10)	47.6	130	2.1	2.5	50	590	13	587
	Green	TLGU1102(T10)	47.6	120	2.3	2.8	50	574	11	571
	Pure green	TLPGU1102(T10)	8.5	30	2.3	2.8	50	562	11	558
Others	Green	S4F43Q1(T10)	85	250	2.27	2.8	50	574	11	571
	Pure green	S4F43Z1(T10)	27.2	60	2.27	2.8	50	562	11	558

Characteristics Diagram

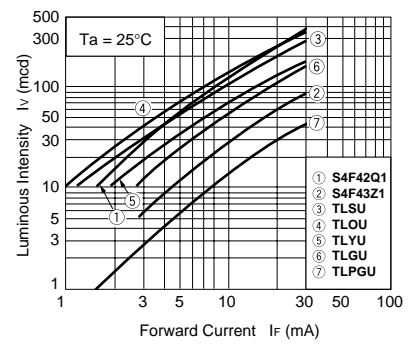
$I_v - I_f$



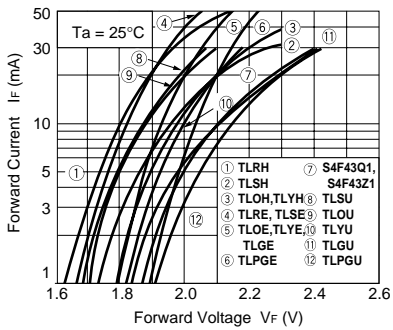
$I_v - I_f$



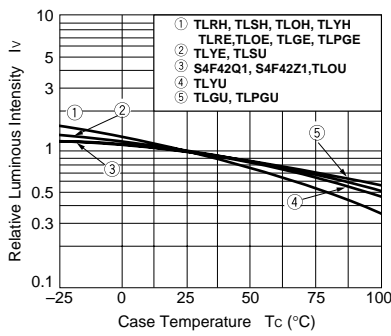
$I_v - I_f$



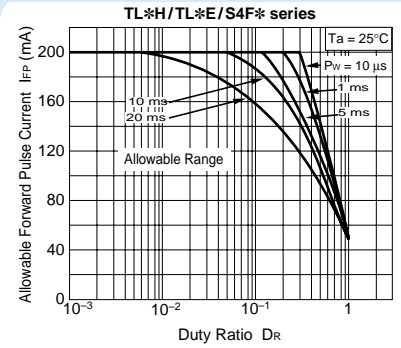
$I_f - V_f$



$I_v - T_c$

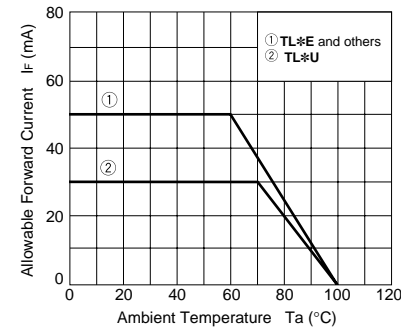


Allowable forward pulse current characteristics

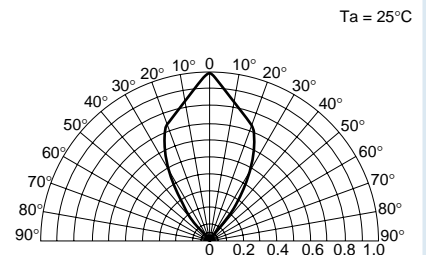


Allowable forward pulse current characteristics

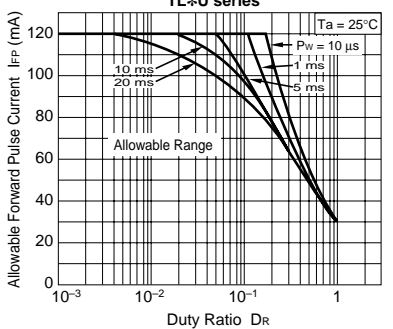
$I_f - T_a$



Radiation pattern



TL*U series



Tape Specifications

Tape Packing Type	Tape Type Suffix	Pitches	Packing		Quantity/Reel
			Package dimensions (mm)	Appearance	
Embossed Tape Packing	T10	8 mm			500/reel