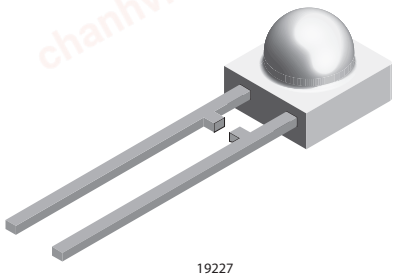
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TLPR5600, TLPH5600, TLPY5600, TLPG5600, TLPP5600

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Vishay Semiconductors

Sideview LED, Ø 5 mm Tinted Diffused Package



19227

FEATURES

- Even luminance of the emitting surface
- Wide viewing angle
- Yellow and green color categorized
- For DC and pulse operation
- Material categorization:
  For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e4

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm side view
- Product series: standard
- Angle of half intensity: ± 80°

APPLICATIONS

- Indicating and illumination purposes

PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (mcd)			at I_F (mA)	WAVELENGTH (nm)			at I_F (mA)	FORWARD VOLTAGE (V)			at I_F (mA)	TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TLPR5600	Red	1	3.5	-	10	-	630	-	10	-	2	3	20	GaAsP on GaP
TLPR5600-AS12Z	Red	1	3.5	-	10	-	630	-	10	-	2	3	20	GaAsP on GaP
TLPH5600	Red	0.63	3.5	-	10	612	-	625	10	-	2	3	20	GaAsP on GaP
TLPY5600	Yellow	0.63	2.25	-	10	581	-	594	10	-	2.4	3	20	GaAsP on GaP
TLPY5600-ASZ	Yellow	0.63	2.25	-	10	581	-	594	10	-	2.4	3	20	GaAsP on GaP
TLPG5600	Green	0.63	2.25	-	10	562	-	575	10	-	2.4	3	20	GaP on GaP
TLPG5600-AS12Z	Green	0.63	2.25	-	10	562	-	575	10	-	2.4	3	20	GaP on GaP
TLPP5600	Pure green	0.63	1.6	-	10	555	-	565	10	-	2.4	3	20	GaP on GaP
TLPP5600-AS12Z	Pure green	0.63	1.6	-	10	555	-	565	10	-	2.4	3	20	GaP on GaP

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)
TLPR5600, TLPH5600, TLPY5600, TLPG5600, TLPP5600

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage			V_R	6	V
DC forward current		TLPR5600	I_F	20	mA
		TLPH5600	I_F	30	mA
		TLPY5600	I_F	30	mA
		TLPG5600	I_F	30	mA
		TLPP5600	I_F	30	mA
Surge forward current	$t_p \leq 10$ µs		I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 60$ °C	TLPR5600	P_V	60	mW
		TLPH5600	P_V	100	mW
		TLPY5600	P_V	100	mW
		TLPG5600	P_V	100	mW
		TLPP5600	P_V	100	mW
Junction temperature			T_j	100	°C
Operating temperature range			T_{amb}	- 40 to + 100	°C
Storage temperature range			T_{stg}	- 55 to + 100	°C

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ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified) **TLPR5600, TLPH5600, TLPY5600, TLPG5600, TLPP5600**					
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**VALUE**	**UNIT**
Soldering temperature	t ≤ 5 s, 2 mm from body		T_{sd}	260	°C
Thermal resistance junction/ambient		TLPR5600	R_{thJA}	500	K/W
		TLPH5600	R_{thJA}	400	K/W
		TLPY5600	R_{thJA}	400	K/W
		TLPG5600	R_{thJA}	400	K/W
		TLPP5600	R_{thJA}	400	K/W

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified) **TLPR5600, RED**						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Luminous intensity (1)	I_F = 10 mA	I_V	1	3.5	-	mcd
Dominant wavelength	I_F = 10 mA	λ_d	-	630	-	nm
Peak wavelength	I_F = 10 mA	λ_p	-	640	-	nm
Angle of half intensity	I_F = 10 mA	φ	-	± 80	-	deg
Forward voltage	I_F = 20 mA	V_F	-	2	3	V
Reverse voltage	I_R = 10 µA	V_R	6	15	-	V
Junction capacitance	V_R = 0 V, f = 1 MHz	C_j	-	50	-	pF

Note

(1) In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified) **TLPH5600, RED**						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Luminous intensity (1)	I_F = 10 mA	I_V	0.63	3.5	-	mcd
Dominant wavelength	I_F = 10 mA	λ_d	612	-	625	nm
Peak wavelength	I_F = 10 mA	λ_p	-	635	-	nm
Angle of half intensity	I_F = 10 mA	φ	-	± 80	-	deg
Forward voltage	I_F = 20 mA	V_F	-	2	3	V
Reverse voltage	I_R = 10 µA	V_R	6	15	-	V
Junction capacitance	V_R = 0 V, f = 1 MHz	C_j	-	50	-	pF

Note

(1) In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified) **TLPY5600, YELLOW**						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Luminous intensity (1)	I_F = 10 mA	I_V	0.63	2.25	-	mcd
Dominant wavelength	I_F = 10 mA	λ_d	581	-	594	nm
Peak wavelength	I_F = 10 mA	λ_p	-	585	-	nm
Angle of half intensity	I_F = 10 mA	φ	-	± 80	-	deg
Forward voltage	I_F = 20 mA	V_F	-	2.4	3	V
Reverse voltage	I_R = 10 µA	V_R	6	15	-	V
Junction capacitance	V_R = 0 V, f = 1 MHz	C_j	-	50	-	pF

Note

(1) In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

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OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLPG5600, GREEN

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity (1)	I_F = 10 mA	I_V	0.63	2.25	-	mcd
Dominant wavelength	I_F = 10 mA	λ_d	562	-	575	nm
Peak wavelength	I_F = 10 mA	λ_p	-	565	-	nm
Angle of half intensity	I_F = 10 mA	φ	-	± 80	-	deg
Forward voltage	I_F = 20 mA	V_F	-	2.4	3	V
Reverse voltage	I_R = 10 µA	V_R	6	15	-	V
Junction capacitance	V_R = 0 V, f = 1 MHz	C_j	-	50	-	pF

Note
(1) In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLPP5600, PURE GREEN

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity (1)	I_F = 10 mA	I_V	0.63	1.6	-	mcd
Dominant wavelength	I_F = 10 mA	λ_d	555	-	565	nm
Peak wavelength	I_F = 10 mA	λ_p	-	555	-	nm
Angle of half intensity	I_F = 10 mA	φ	-	± 80	-	deg
Forward voltage	I_F = 20 mA	V_F	-	2.4	3	V
Reverse voltage	I_R = 10 µA	V_R	6	15	-	V
Junction capacitance	V_R = 0 V, f = 1 MHz	C_j	-	50	-	pF

Note
(1) In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

LUMINOUS INTENSITY CLASSIFICATION

GROUP	LIGHT INTENSITY (mcd)	
STANDARD	MIN.	MAX.
K	0.63	1.25
L	1	2
M	1.6	3.2
N	2.5	5
P	4	8
Q	6.3	12.5
R	10	20
S	16	32
T	25	50
U	40	80

Note
- Luminous intensity is tested at a current pulse duration of 25 ms. These type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each bag (there will be no mixing of two groups on each bag). In order to ensure availability, single brightness groups will not be orderable.
  In a similar manner for colors where wavelength groups are measured and binned, single wavelength groups will be shipped on any one bag.
  In order to ensure availability, single wavelength groups will not be orderable.

COLOR CLASSIFICATION

GROUP	DOM. WAVELENGTH (nm)					
	YELLOW		GREEN		PURE GREEN	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
0					555	559
1	581	584			558	561
2	583	586			560	563
3	585	588	562	565	562	565
4	587	590	564	567		
5	589	592	566	569		
6	591	594	568	571		
7			570	573		
8			572	575		

Note
- Wavelengths are tested at a current pulse duration of 25 ms.

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TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

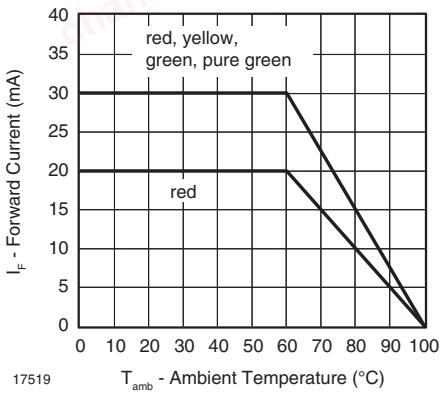


Fig. 1 - Forward Current vs. Ambient Temperature

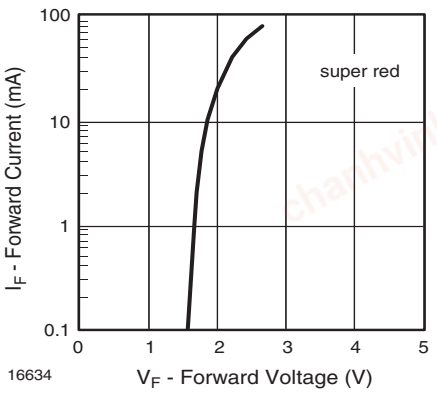


Fig. 4 - Forward Current vs. Forward Voltage

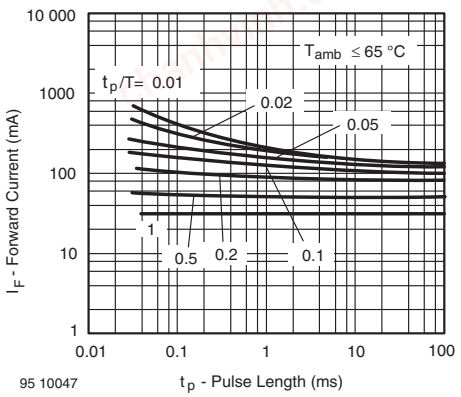


Fig. 2 - Forward Current vs. Pulse Length

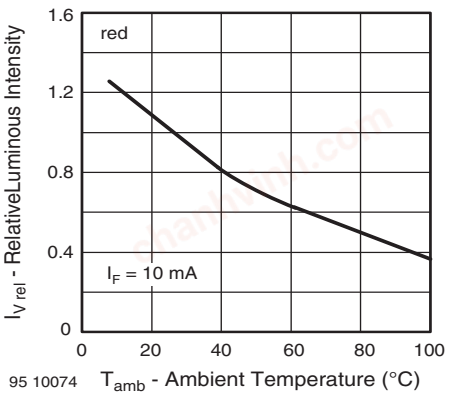


Fig. 5 - Relative Luminous Intensity vs. Ambient Temperature

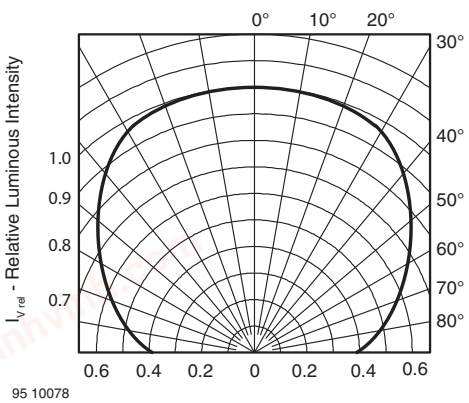


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

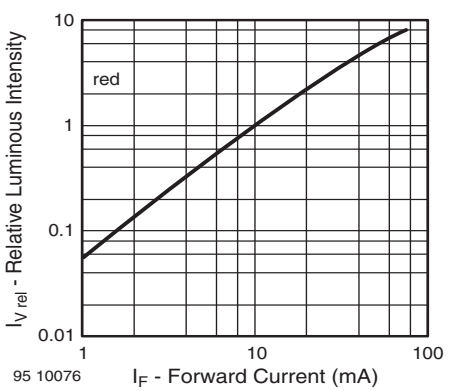


Fig. 6 - Relative Luminous Intensity vs. Forward Current

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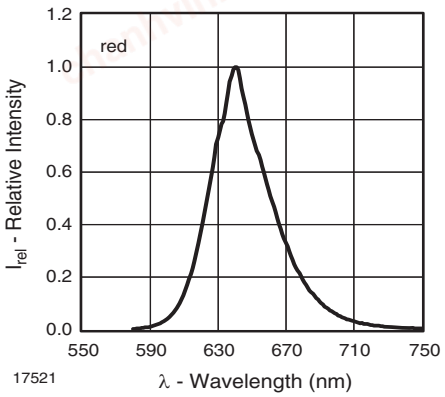


Fig. 7 - Relative Intensity vs. Wavelength

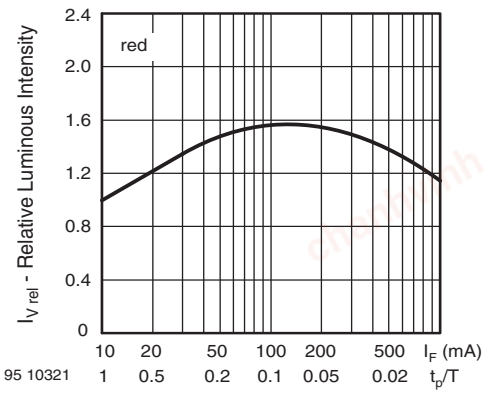


Fig. 10 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

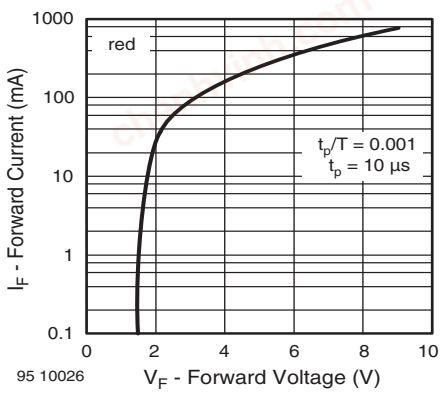


Fig. 8 - Forward Current vs. Forward Voltage

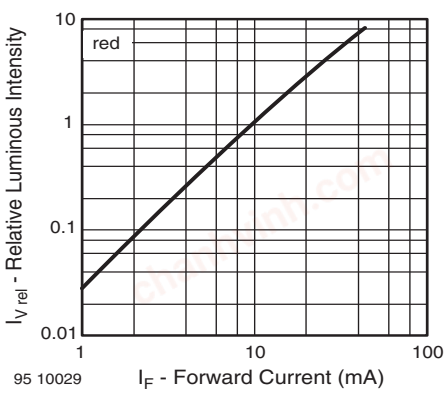


Fig. 11 - Relative Luminous Intensity vs. Forward Current

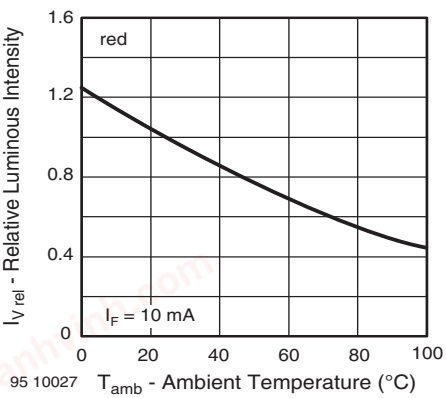


Fig. 9 - Relative Luminous Intensity vs. Ambient Temperature

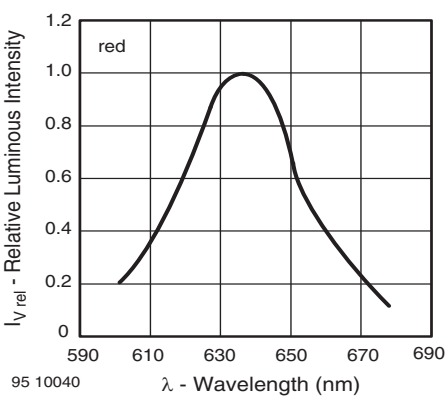


Fig. 12 - Relative Intensity vs. Wavelength

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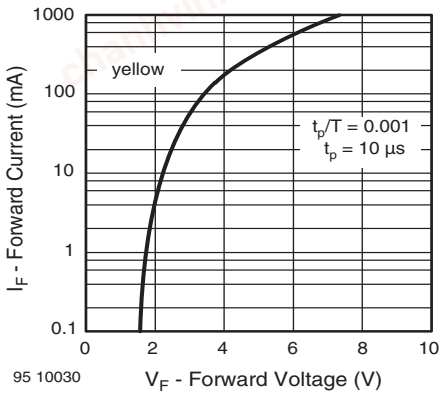


Fig. 13 - Forward Current vs. Forward Voltage

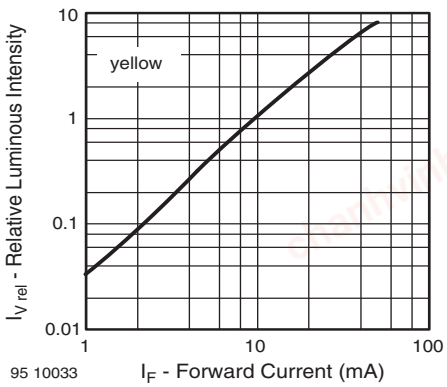


Fig. 16 - Relative Luminous Intensity vs. Forward Current

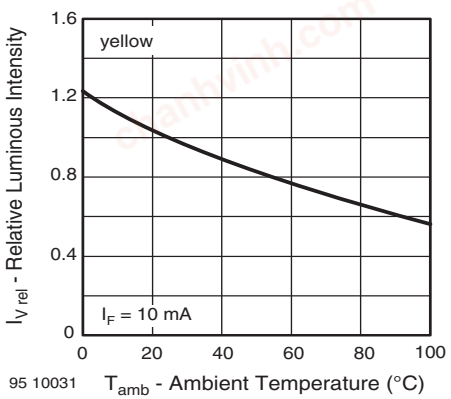


Fig. 14 - Relative Luminous Intensity vs. Ambient Temperature

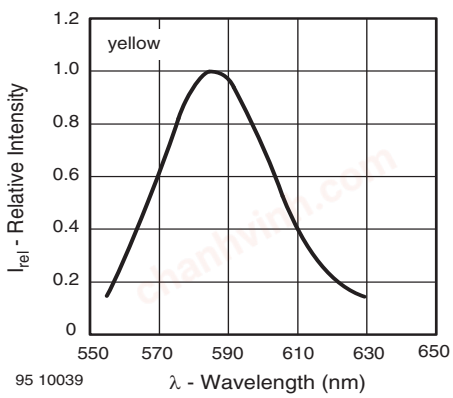


Fig. 17 - Relative Intensity vs. Wavelength

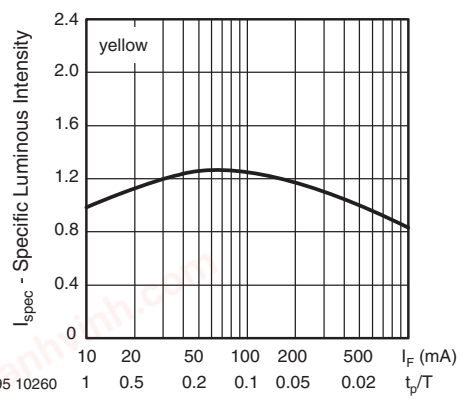


Fig. 15 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

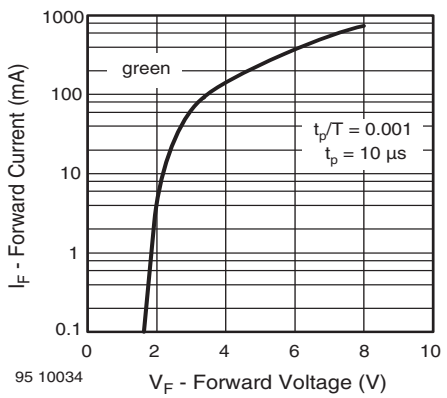


Fig. 18 - Forward Current vs. Forward Voltage

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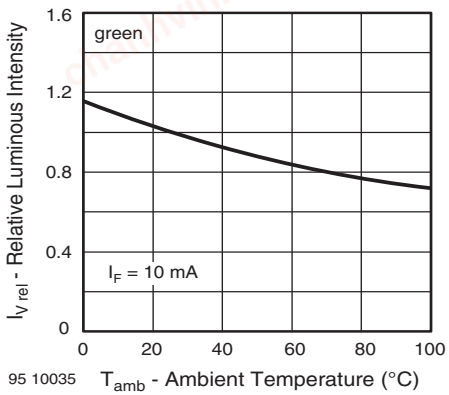


Fig. 19 - Relative Luminous Intensity vs. Ambient Temperature

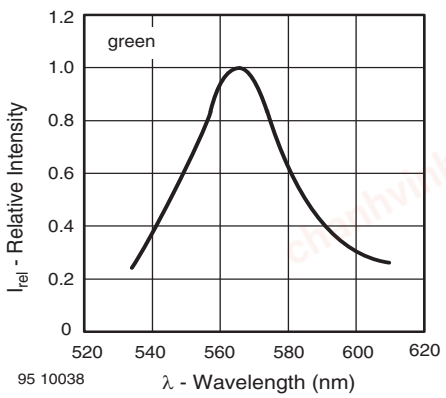


Fig. 22 - Relative Intensity vs. Wavelength

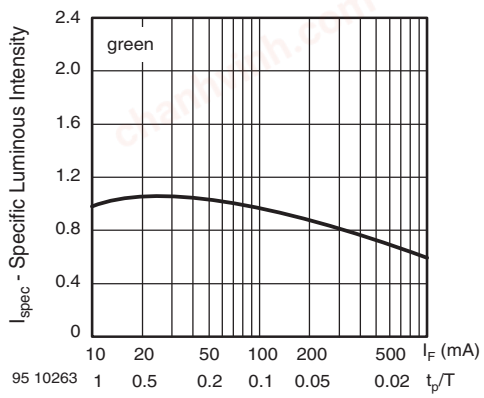


Fig. 20 - Specific Luminous Intensity vs. Forward Current

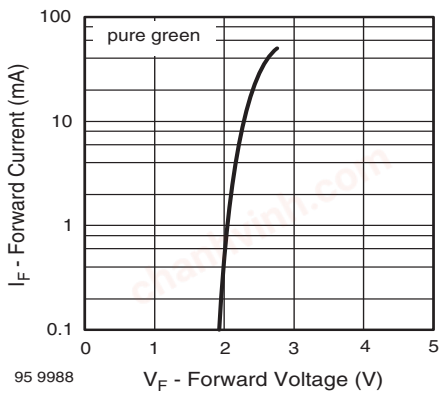


Fig. 23 - Forward Current vs. Forward Voltage

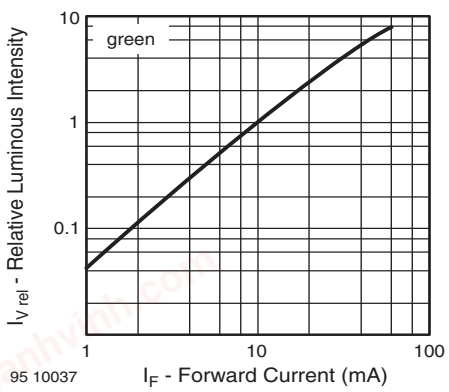


Fig. 21 - Relative Luminous Intensity vs. Forward Current

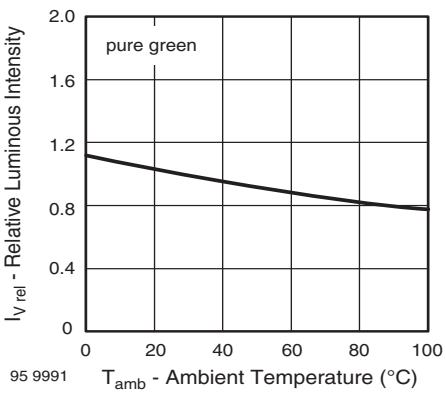


Fig. 24 - Relative Luminous Intensity vs. Ambient Temperature

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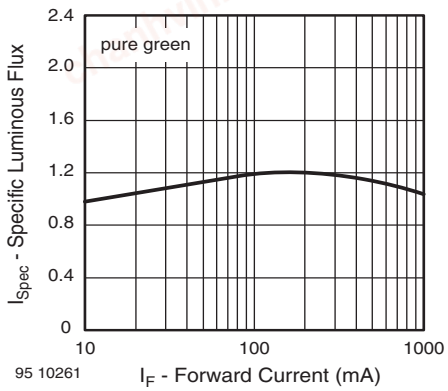


Fig. 25 - Specific Luminous Intensity vs. Forward Current

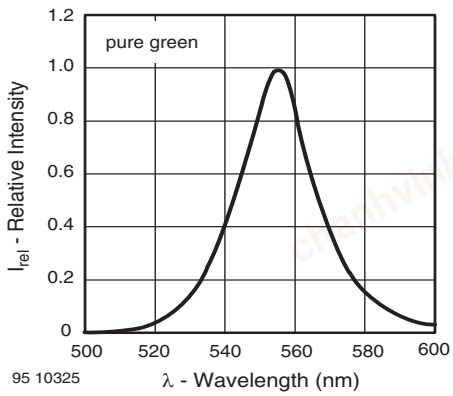


Fig. 27 - Relative Intensity vs. Wavelength

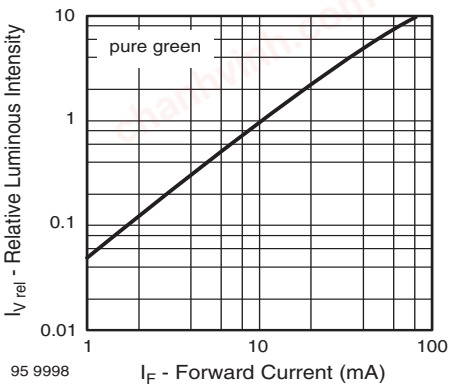
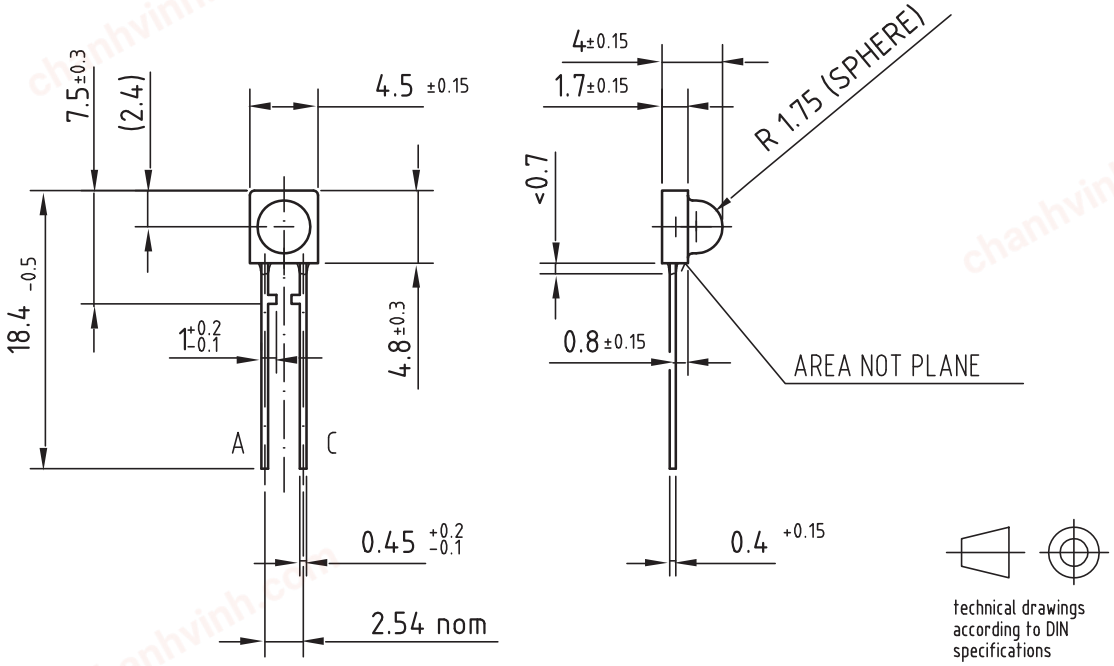


Fig. 26 - Relative Luminous Intensity vs. Forward Current

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PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5127.01-4
Issue: 1; 15.11.95
95 11321

AMMOPACK (Z)

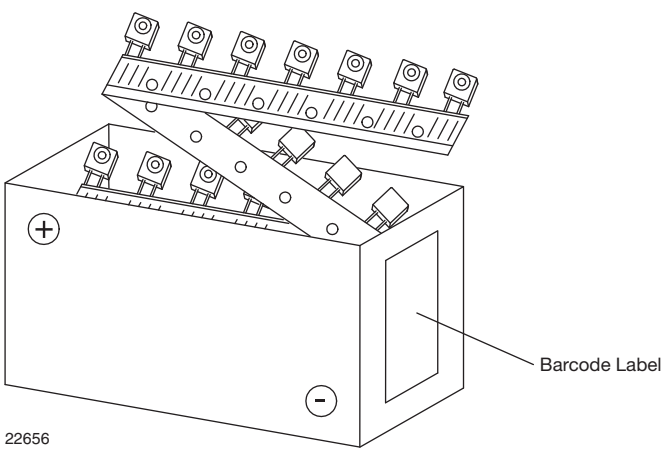


Fig. 28 - Tape Direction

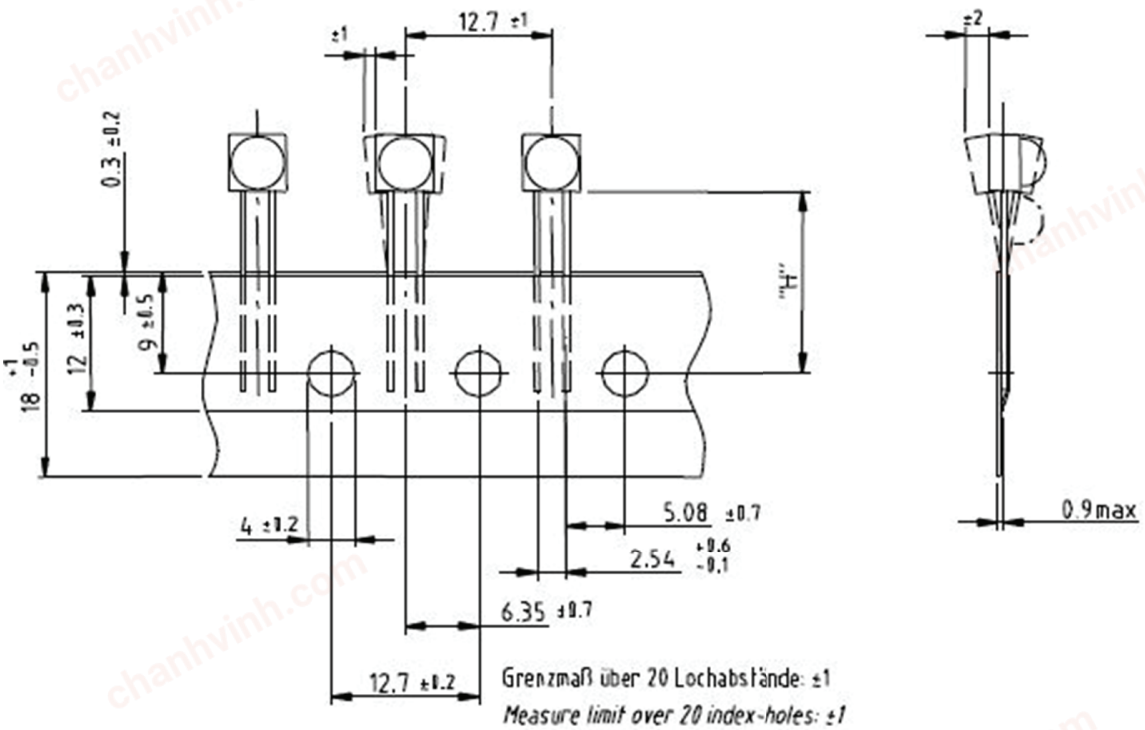
Note

- The new nomenclature for ammopack is ASZ only, without suffix for the LED orientation. The carton box has to be turned to the desired position: “+” for anode first, or “-“ for cathode first. AS12Z and AS21Z are still valid for already existing types, BUT NOT FOR NEW DESIGN.

For technical questions, contact: LED@vishay.com
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TAPE DIMENSIONS in millimeters



OPTION	DIMENSION "H" ± 0.5 mm
AS	16

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