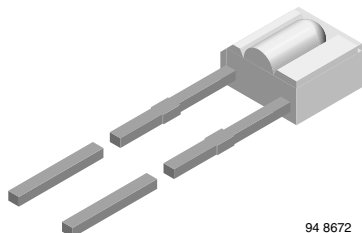


Infrared Emitting Diode, 950 nm, GaAs



94 8672

DESCRIPTION

TSSS2600 is an infrared, 950 nm emitting diode in GaAs technology, molded in a miniature, clear plastic package with side view lens.

FEATURES

- Package type: leaded
- Package form: side view
- Dimensions (L x W x H in mm): 3.6 x 2.2 x 5
- Peak wavelength: $\lambda_p = 950$ nm
- High reliability
- High radiant power
- High radiant intensity
- Angle of half intensity: $\phi = \pm 25^\circ$, horizontal
- Low forward voltage
- Suitable for high pulse current operation
- Good spectral matching with Si photodetectors
- Package matched with detector TEST2600
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



Note

** Please see document "Vishay Material Category Policy":
www.vishay.com/doc?99902

APPLICATIONS

- Infrared source in miniature light barriers or reflective sensor systems with short transmission distances and low forward voltage requirements. Matching with silicon PIN photodiodes or phototransistors (e.g. TEST2600)

PRODUCT SUMMARY

COMPONENT	I_e (mW/sr)	ϕ (deg)	λ_p (nm)	tr (ns)
TSSS2600	2.6	± 25	950	800

Note

- Test conditions see table "Basic Characteristics"

ORDERING INFORMATION

ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
TSSS2600	Bulk	MOQ: 5000 pcs, 5000 pcs/bulk	Side view

Note

- MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	5	V
Forward current		I_F	100	mA
Peak forward current	$t_p/T = 0.5$, $t_p = 100$ μs	I_{FM}	200	mA
Surge forward current	$t_p = 100$ μs	I_{FSM}	2.0	A
Power dissipation		P_V	170	mW
Junction temperature		T_j	100	$^\circ\text{C}$
Operating temperature range		T_{amb}	- 40 to + 100	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 40 to + 100	$^\circ\text{C}$
Soldering temperature	$t \leq 5$ s, 2 mm from case	T_{sd}	260	$^\circ\text{C}$
Thermal resistance junction/ambient	Leads not soldered	R_{thJA}	450	K/W

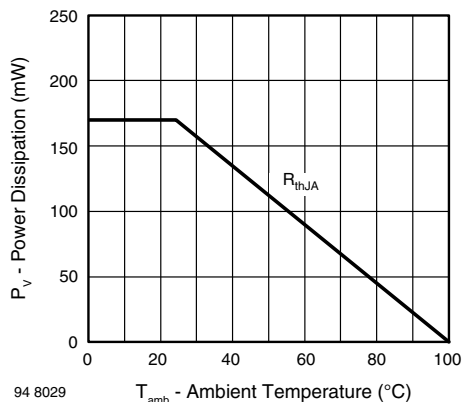


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

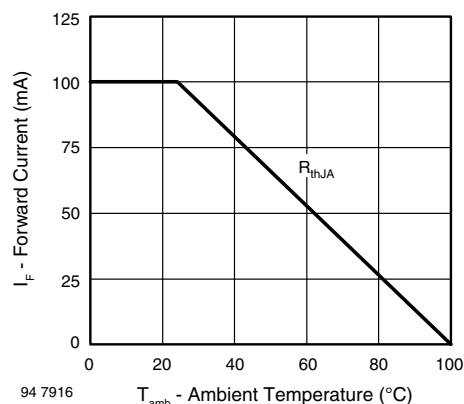


Fig. 1 - Forward Current Limit vs. Ambient Temperature

BASIC CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$	V_F		1.25	1.6	V
	$I_F = 1.5\text{ A}$, $t_p = 100\text{ }\mu\text{s}$	V_F		2.2		V
Temperature coefficient of V_F	$I_F = 100\text{ mA}$	TK_{V_F}		- 1.3		mV/K
Reverse current	$V_R = 5\text{ V}$	I_R			100	μA
Junction capacitance	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$	C_j		30		pF
Radiant intensity	$I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$	I_e	1	2.6	3	mW/sr
	$I_F = 1.5\text{ A}$, $t_p = 100\text{ }\mu\text{s}$	I_e		25		mW/sr
Radiant power	$I_F = 100\text{ mA}$, $t_p = 20\text{ ms}$	ϕ_e		20		mW
Temperature coefficient of ϕ_e	$I_F = 100\text{ mA}$	TK_{ϕ_e}		- 0.8		%/K
Angle of half intensity	horizontal	ϕ_1		± 25		deg
	vertical	ϕ_2		± 60		deg
Peak wavelength	$I_F = 100\text{ mA}$	λ_p		950		nm
Spectral bandwidth	$I_F = 100\text{ mA}$	$\Delta\lambda$		50		nm
Temperature coefficient of λ_p	$I_F = 100\text{ mA}$	TK_{λ_p}		0.2		nm/K
Rise time	$I_F = 100\text{ mA}$	t_r		800		ns
	$I_F = 1.5\text{ A}$	t_r		400		ns
Fall time	$I_F = 100\text{ mA}$	t_f		800		ns
	$I_F = 1.5\text{ A}$	t_f		400		ns
Virtual source diameter		d		2		mm

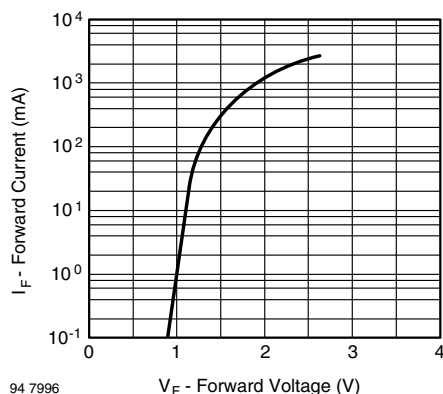
BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 2 - Pulse Forward Current vs. Forward Voltage

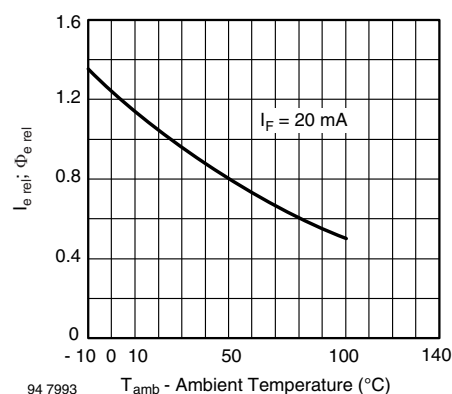


Fig. 5 - Relative Radiant Intensity/Power vs. Ambient Temperature

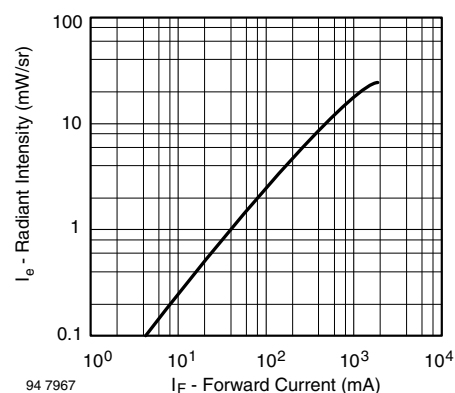


Fig. 3 - Radiant Intensity vs. Forward Current

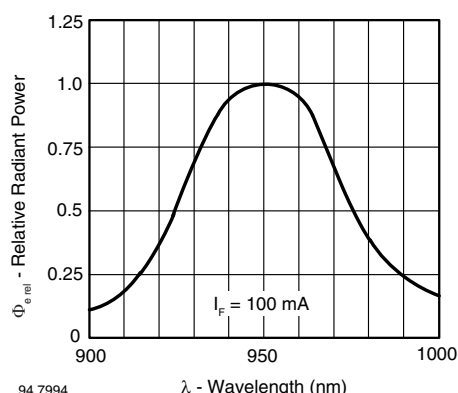


Fig. 6 - Relative Radiant Power vs. Wavelength

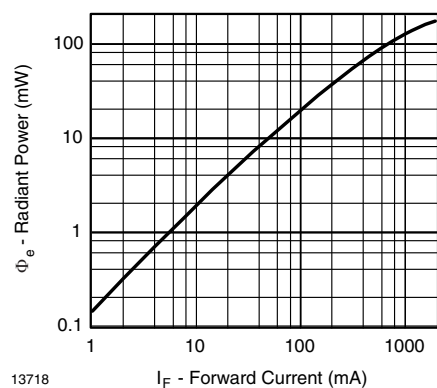


Fig. 4 - Radiant Power vs. Forward Current

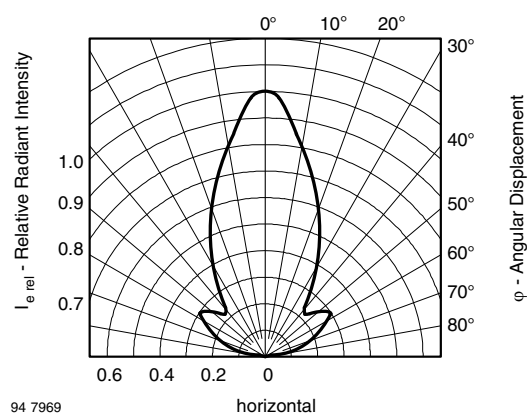


Fig. 7 - Relative Radiant Intensity vs. Angular Displacement

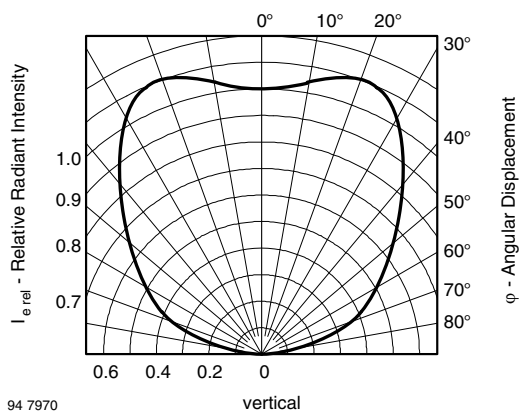
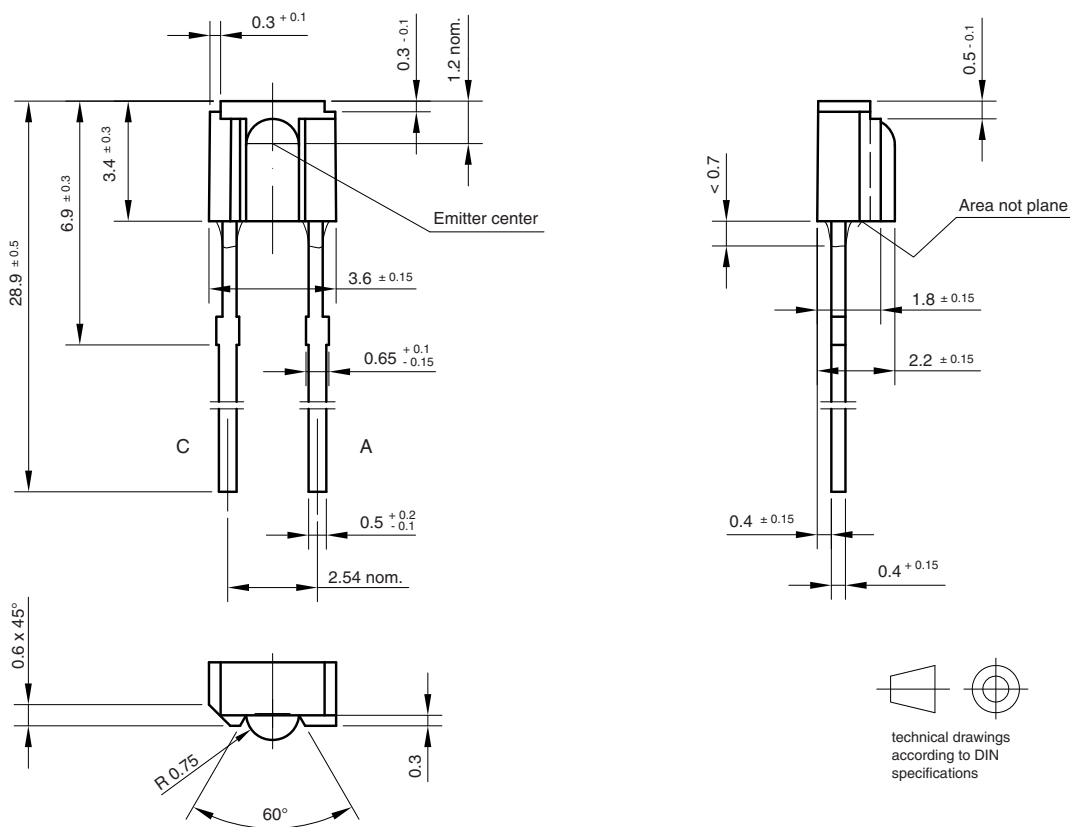


Fig. 2 - Relative Radiant Intensity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5241.01-4

Issue: 3; 18.04.96

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