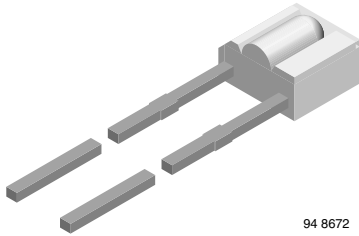


Infrared Emitting Diode, 950 nm, GaAs



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 | $t_p/T = 0.5, t_p = 100 \mu\text{s}$ | I_{FM} | 200 | mA |
| Surge forward current | $t_p = 100 \mu\text{s}$ | 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 |

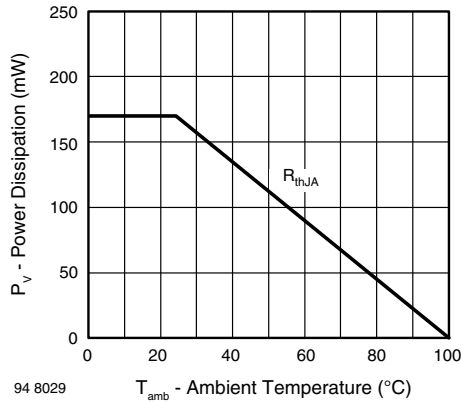


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

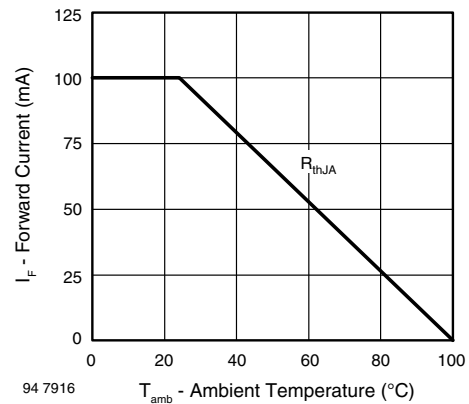


Fig. 1 - Forward Current Limit vs. Ambient Temperature

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

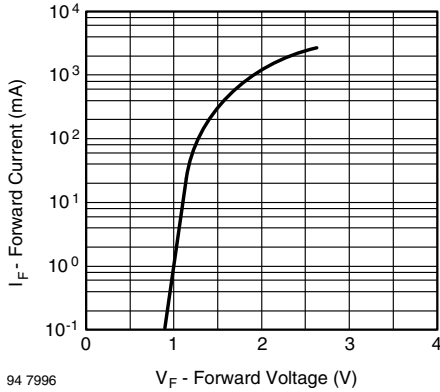


Fig. 2 - Pulse Forward Current vs. Forward Voltage

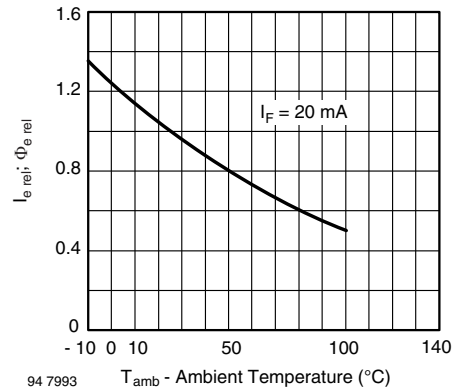


Fig. 5 - Relative Radiant Intensity/Power vs. Ambient Temperature

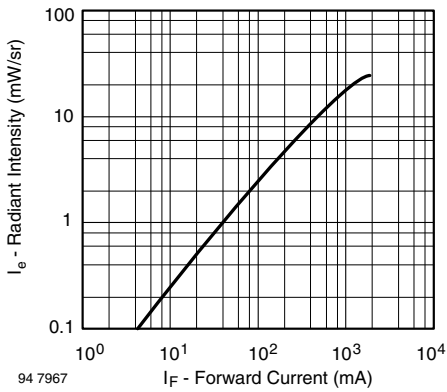


Fig. 3 - Radiant Intensity vs. Forward Current

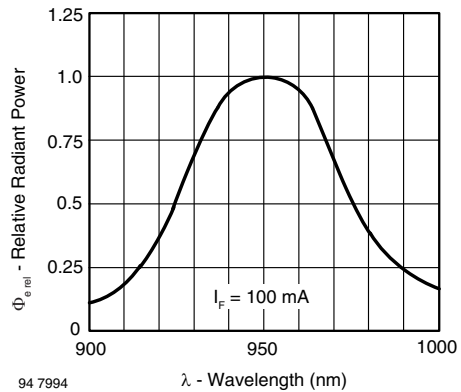


Fig. 6 - Relative Radiant Power vs. Wavelength

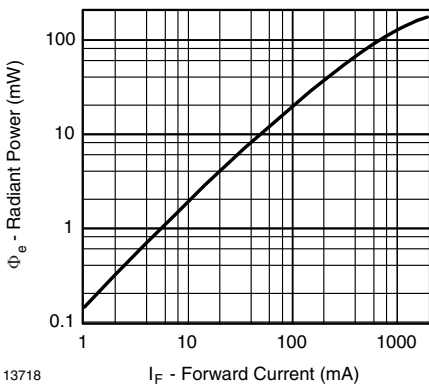


Fig. 4 - Radiant Power vs. Forward Current

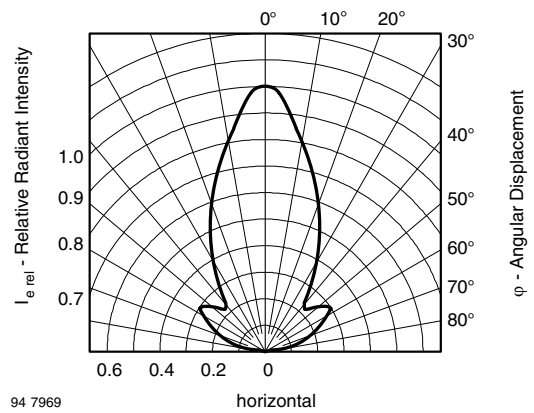


Fig. 7 - Relative Radiant Intensity vs. Angular Displacement

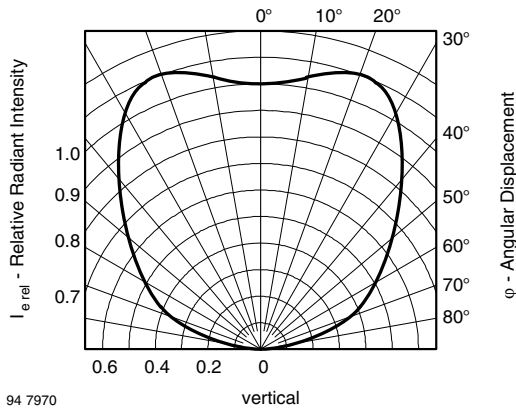
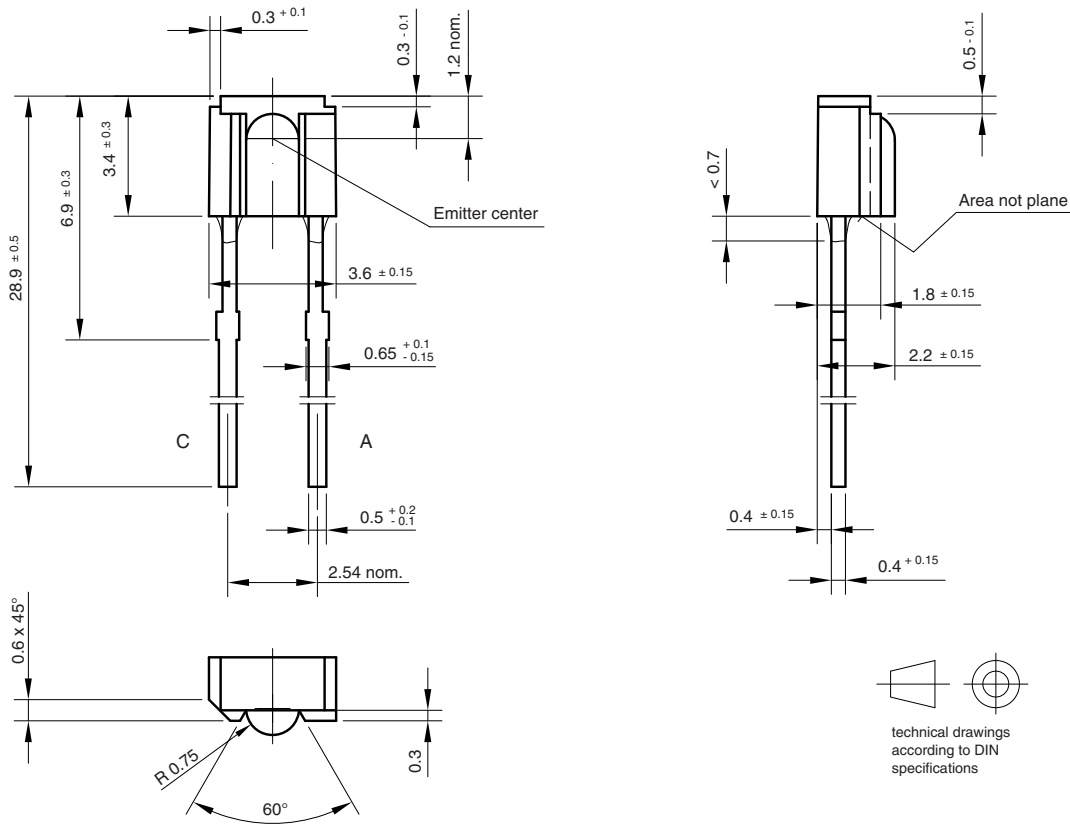


Fig. 2 - Relative Radiant Intensity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5241.01-4
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