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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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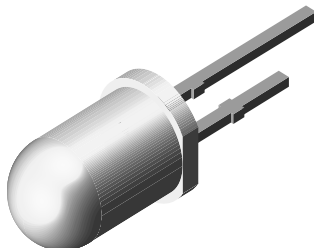
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Infrared Emitting Diode, 950 nm, GaAs



94 8390

FEATURES

- Package type: leaded
- Package form: T-1¾
- Dimensions (in mm): Ø 5
- Peak wavelength: $\lambda_p = 950$ nm
- High reliability
- Angle of half intensity: $\phi = \pm 15^\circ$
- Low forward voltage
- Suitable for high pulse current operation
- Good spectral matching with Si photodetectors
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

HALOGEN
FREE
GREEN
(5-2008)

DESCRIPTION

TSUS6202 is an infrared, 950 nm emitting diode in GaAs technology molded in a blue-gray tinted plastic package.

APPLICATIONS

- Emitter in transmissive sensors
- Emitter in reflective sensors

PRODUCT SUMMARY

COMPONENT	I_e (mW/sr)	ϕ (deg)	λ_p (nm)	t_r (ns)
TSUS6202	30	± 15	950	800

Note

- Test conditions see table "Basic Characteristics"

ORDERING INFORMATION

ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
TSUS6202	Bulk	MOQ: 4000 pcs, 4000 pcs/bulk	T-1¾

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	150	mA
Peak forward current	$t_p/T = 0.5, t_p = 100 \mu\text{s}$	I_{FM}	300	mA
Surge forward current	$t_p = 100 \mu\text{s}$	I_{FSM}	2.5	A
Power dissipation		P_V	170	mW
Junction temperature		T_j	100	$^\circ\text{C}$
Operating temperature range		T_{amb}	-40 to +85	$^\circ\text{C}$
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	J-STD-051, leads 7 mm, soldered on PCB	R_{thJA}	230	K/W

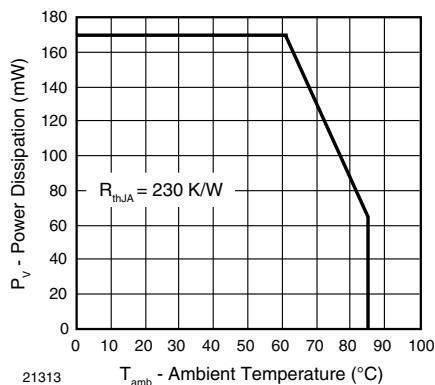


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

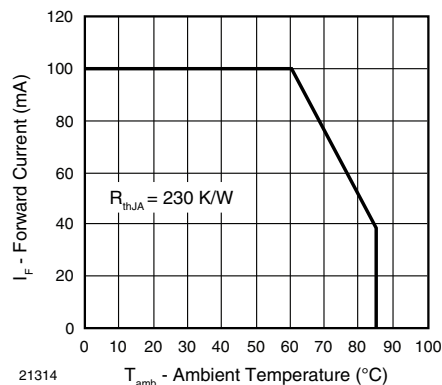


Fig. 2 - Forward Current Limit vs. Ambient Temperature

BASIC CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 100 mA, t _p = 20 ms	V _F	-	1.3	1.7	V
	I _F = 1.5 A, t _p = 100 μs	V _F	-	2.2	2.7	V
Temperature coefficient of V _F	I _F = 100 mA	TK _{V_F}	-	-1.3	-	mV/K
Reverse current	V _R = 5 V	I _R	-	-	100	μA
Junction capacitance	V _R = 0 V, f = 1 MHz, E = 0	C _j	-	30	-	pF
Radiant intensity	I _F = 100 mA, t _p = 20 ms	I _e	20	30	70	mW/sr
	I _F = 1.5 A, t _p = 100 μs	I _e	170	280	-	mW/sr
Radiant power	I _F = 100 mA, t _p = 20 ms	φ _e	-	15	-	mW
Temperature coefficient of φ _e	I _F = 20 mA	TK _{φ_e}	-	-0.8	-	%/K
Angle of half intensity		φ	-	± 15	-	deg
Peak wavelength	I _F = 100 mA	λ _p	-	950	-	nm
Spectral bandwidth	I _F = 100 mA	Δλ	-	50	-	nm
Temperature coefficient of λ _p	I _F = 100 mA	TK _{λ_p}	-	0.2	-	nm/K
Rise time	I _F = 100 mA	t _r	-	800	-	ns
	I _F = 1.5 A	t _r	-	400	-	ns
Fall time	I _F = 100 mA	t _f	-	800	-	ns
	I _F = 1.5 A	t _f	-	400	-	ns
Virtual source diameter		d	-	3.8	-	mm

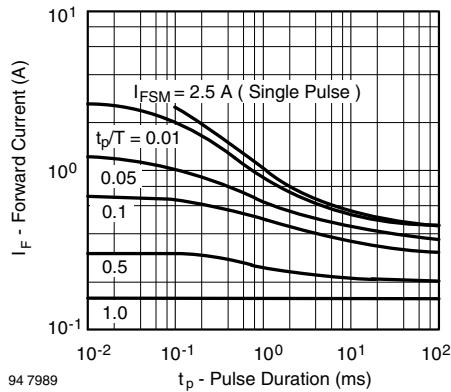
BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 3 - Pulse Forward Current vs. Pulse Duration

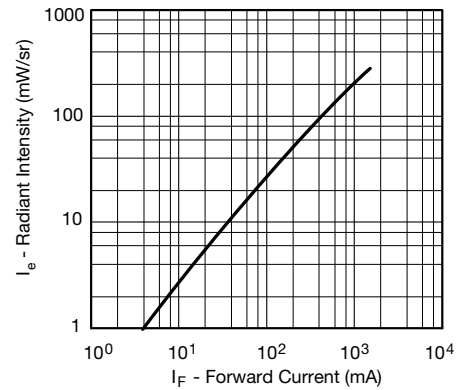


Fig. 6 - Radiant Intensity vs. Forward Current

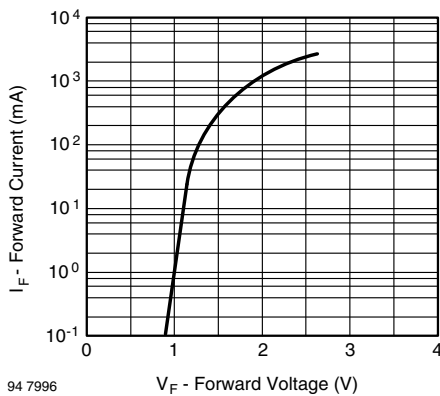


Fig. 4 - Forward Current vs. Forward Voltage

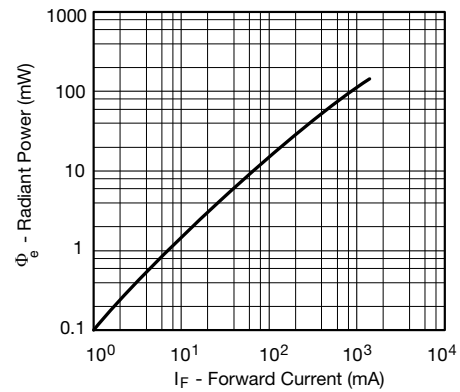


Fig. 7 - Radiant Power vs. Forward Current

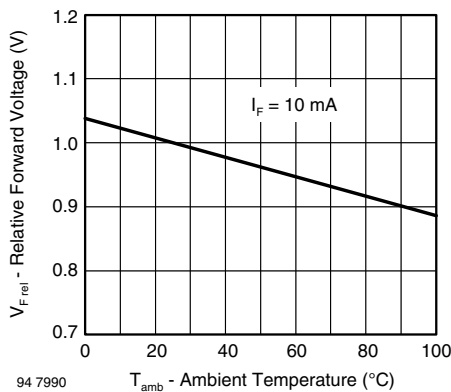


Fig. 5 - Relative Forward Voltage vs. Ambient Temperature

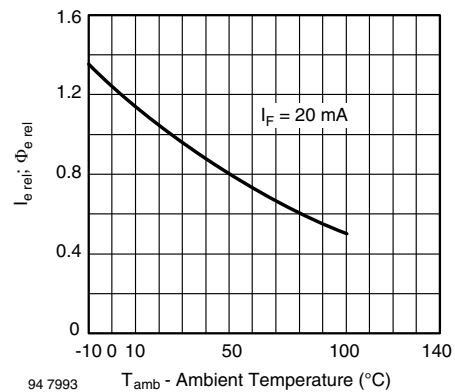


Fig. 8 - Relative Radiant Intensity/Power vs. Ambient Temperature

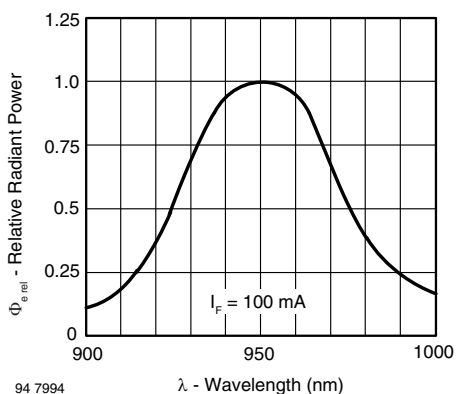


Fig. 9 - Relative Radiant Power vs. Wavelength

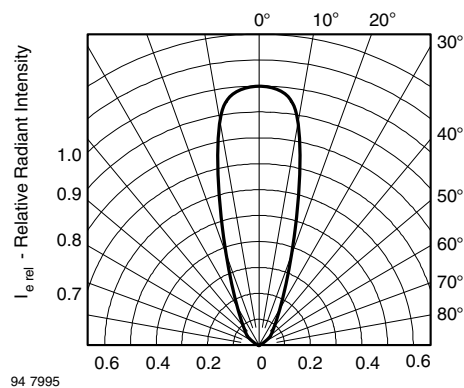
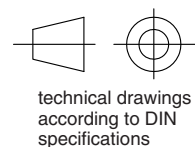
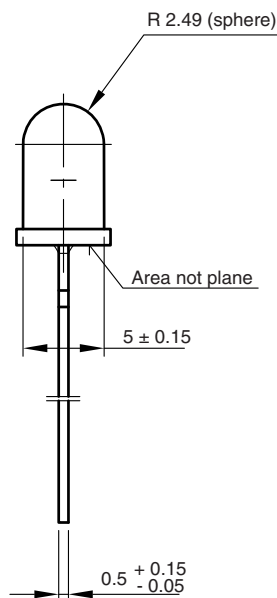
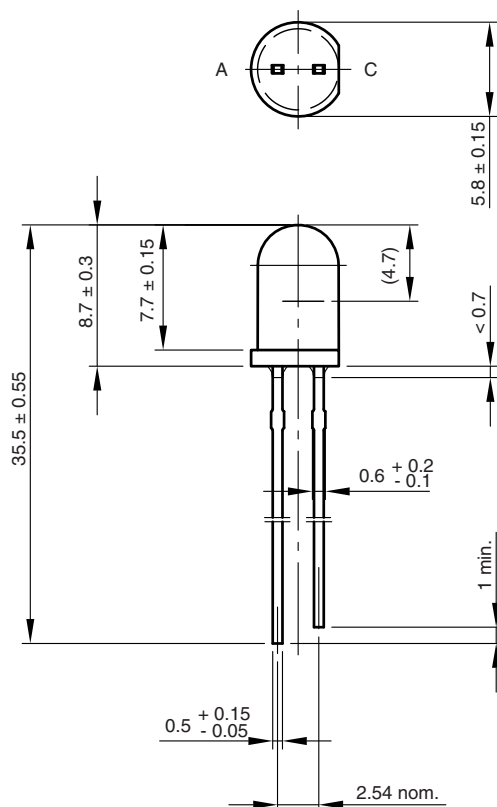


Fig. 10 - Relative Radiant Intensity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters


6.544-5259.02-4
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