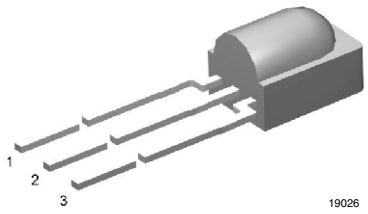
IR Sensor Module for Remote Control Systems



FEATURES

- Photo detector and preamplifier in one package
- AC coupled response from 20 kHz to 60 kHz, all data formats
- Improved shielding against electrical field disturbance
- TTL and CMOS compatibility
- Output active low
- Supply voltage: 2.7 V to 5.5 V
- Carrier out signal for code learning functions
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

Pb-free

e3

RoHS COMPLIANT

MECHANICAL DATA

Pinning:

1 = Carrier OUT, 2 = GND, 3 = V_S

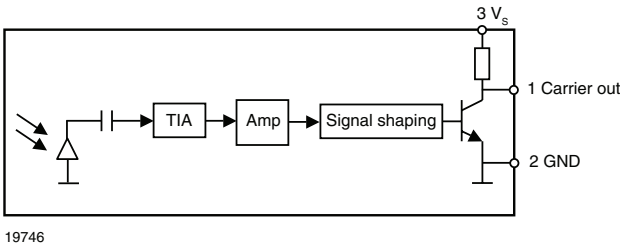
DESCRIPTION

The TSOP98260 is a miniaturized sensor for receiving the modulated signal of infrared remote control systems. A PIN diode and preamplifier are assembled on a lead frame, the epoxy package is designed as an IR filter. The modulated output signal, carrier out, can be used for code learning applications.

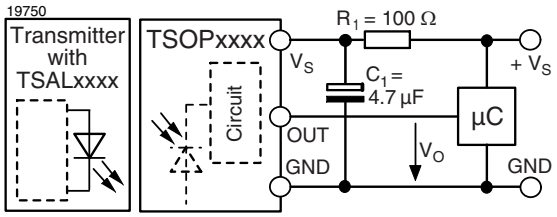
This component has not been qualified according to automotive specifications.

PARTS TABLE	
CARRIER FREQUENCY	CODE LEARNING APPLICATIONS
20 kHz to 60 kHz	TSOP98260

BLOCK DIAGRAM



APPLICATION CIRCUIT



$R_1 + C_1$ recommended to suppress power supply disturbances.

ABSOLUTE MAXIMUM RATINGS (1)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Supply voltage (pin 3)		V_S	- 0.3 to + 5.5	V
Output voltage (pin 1)		V_O	- 0.3 to (V_S + 0.3)	V
Output current (pin 1)		I_O	10	mA
Junction temperature		T_j	100	°C
Storage temperature range		T_{stg}	- 25 to + 85	°C
Operating temperature range		T_{amb}	- 25 to + 85	°C
Soldering temperature	t ≤ 10 s, 1 mm from case	T_{sd}	260	°C

Note

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

ELECTRICAL AND OPTICAL CHARACTERISTICS CARRIER OUT (1)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Supply current (pin 3)	E_v = 0	I_{SD}		0.6	0.8	mA
Supply voltage		V_S	2.7		5.5	V
Transmission distance	E_v = 0, test signal see fig. 1, IR diode TSAL6200, I_F = 400 mA	d		1		m
Output voltage low (pin 1)	I_{OSL} = 0.5 mA, test signal see fig. 1	V_{OSL}			250	mV
Minimum irradiance	V_S = 3 V, (20 to 60 kHz)	$E_{e\ min.}$		0.3	0.5	W/m²
Maximum irradiance	test signal see fig. 1, (20 to 60 kHz)	$E_{e\ max.}$	300	500		W/m²
Directivity	Angle of half transmission distance	$\varphi_{1/2}$		± 45		deg
Carrier Out rise time	V_S = 3 V, C_L = 10 pF	T_R		100		ns
Carrier Out fall time	V_S = 3 V, C_L = 10 pF	T_F		10		ns
Output pulse width	T_{PI} = 10 µs, C_L = 10 pF	T_{PO}	5	7	10	µs

Note

(1) T_{amb} = 25 °C, unless otherwise specified, V_S = 3 V

TYPICAL CHARACTERISTICS

T_{amb} = 25 °C, unless otherwise specified

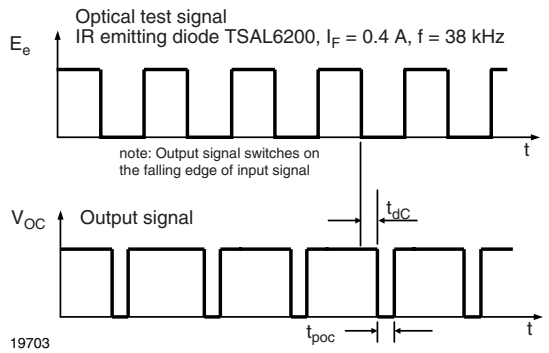


Fig. 1 - Carrier Output Pulse Diagram

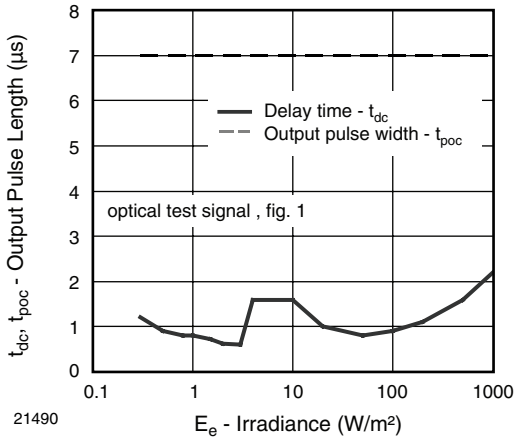


Fig. 2 - Carrier Output Function Diagram

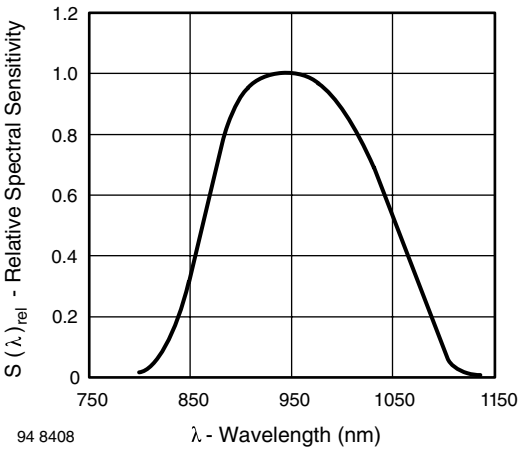


Fig. 3 - Relative Spectral Sensitivity vs. Wavelength

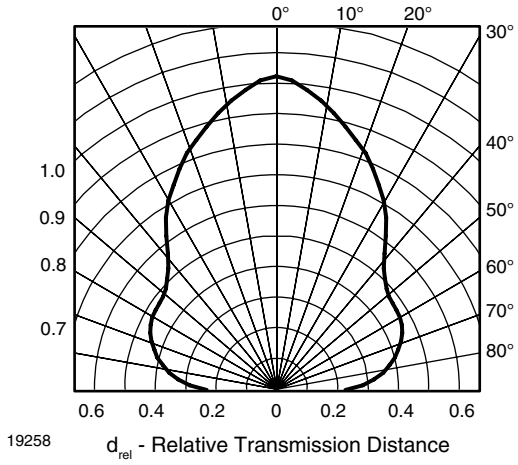


Fig. 4 - Horizontal Directivity

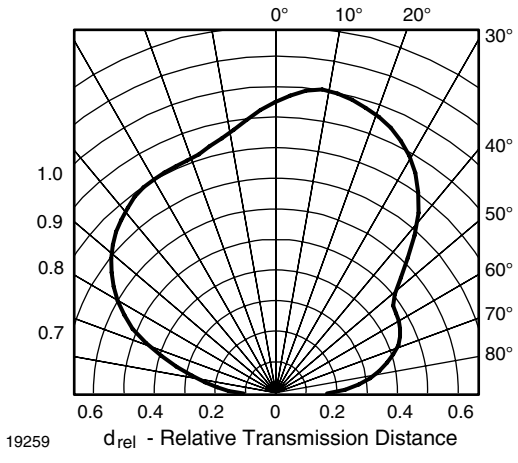
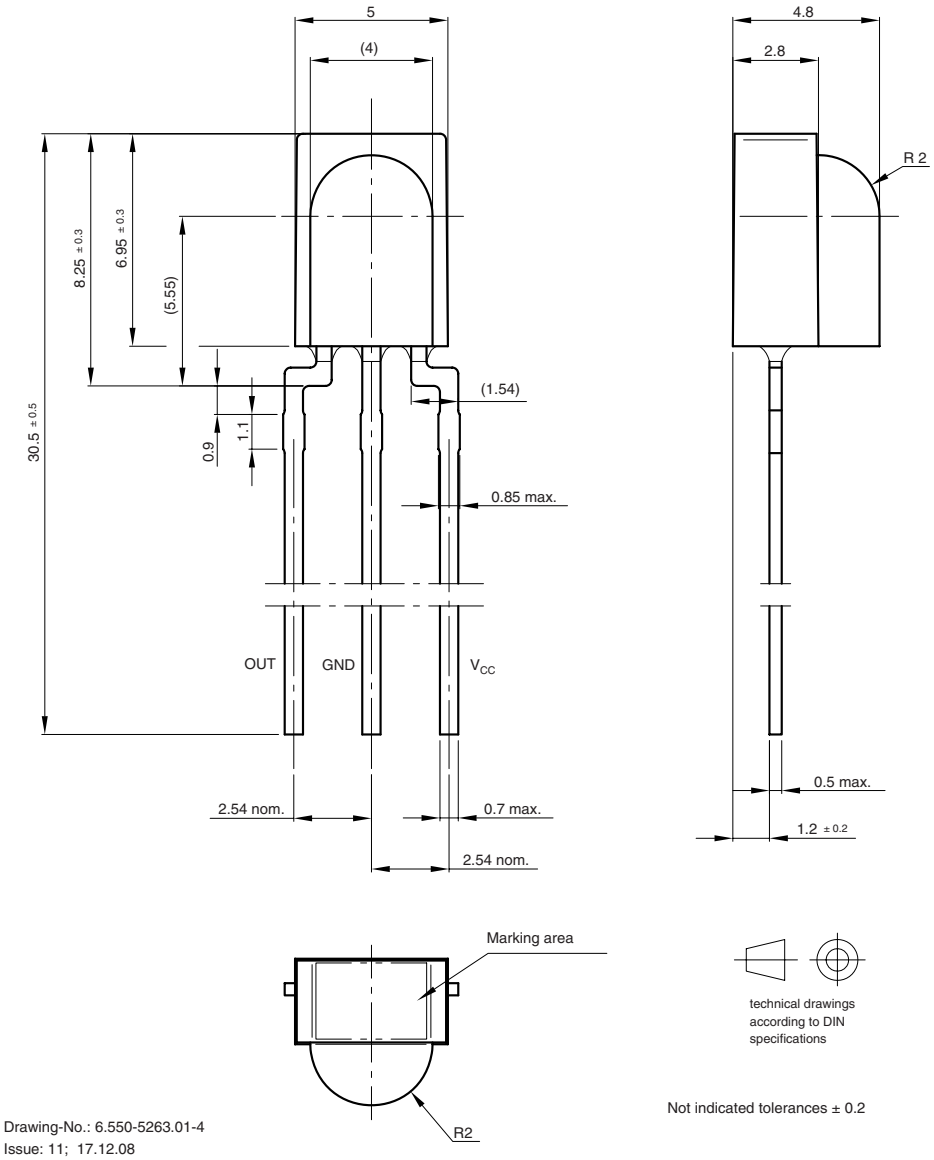


Fig. 5 - Vertical Directivity

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.550-5263.01-4
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It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively.
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA.
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany

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