

IR Sensor Module for Remote Control Systems



19026

MECHANICAL DATA

Pinning:

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

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



DESCRIPTION

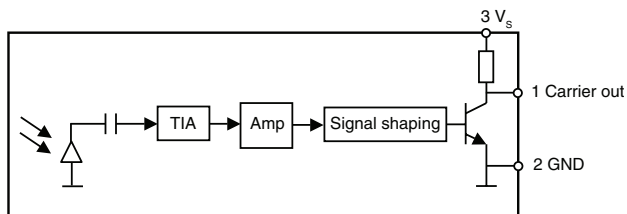
The TSOP98260 is a miniaturized sensor for receiving the modulated signal of infrared remote control systems. A PIN diode and preamplifier are assembled on a lead frame, the epoxy package is designed as an IR filter. The modulated output signal, carrier out, can be used for code learning applications.

This component has not been qualified according to automotive specifications.

PARTS TABLE

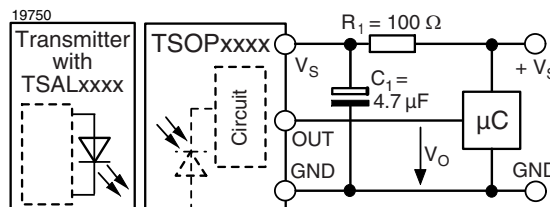
CARRIER FREQUENCY	CODE LEARNING APPLICATIONS
20 kHz to 60 kHz	TSOP98260

BLOCK DIAGRAM



19746

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	$t \leq 10$ 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 ²) kHz	$E_{e \text{ min.}}$		0.3	0.5	W/m ²
Maximum irradiance	test signal see fig. 1, (20 to 60 ²) kHz	$E_{e \text{ max.}}$	300	500		W/m ²
Directivity	Angle of half transmission distance	$\phi_{1/2}$		± 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	$T_{PI} = 10$ μ s, $C_L = 10$ pF	T_{PO}	5	7	10	μ s

Note

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

 (2) These irradiance values are guaranteed to 60 kHz. The TSOP98260 will continue to function up to frequencies higher than 600 kHz, however the irradiance at frequencies above 60 kHz is dependent on the carrier frequency and the pulse pattern received.
 Typical $E_{e \text{ min.}} = 2$ W/m² at 455 kHz.

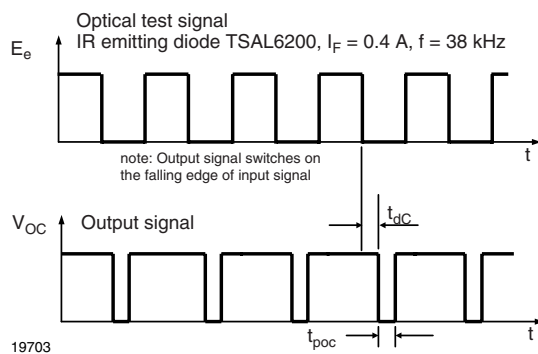
TYPICAL CHARACTERISTICS
 $T_{amb} = 25$ °C, unless otherwise specified


Fig. 1 - Carrier Output Pulse Diagram

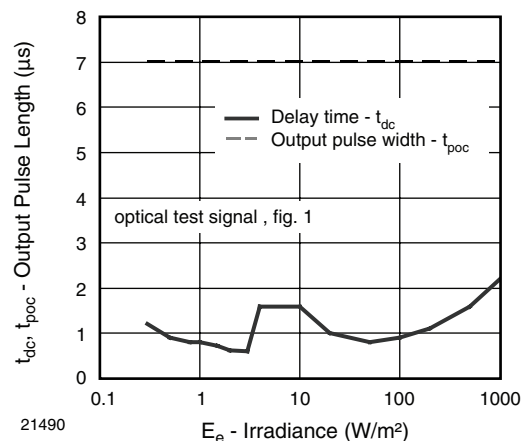


Fig. 2 - Carrier Output Function Diagram

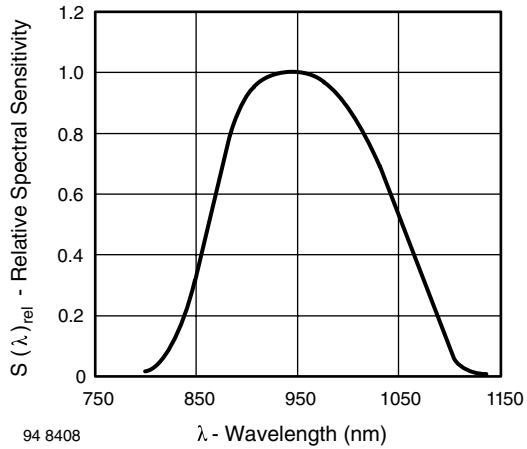


Fig. 3 - Relative Spectral Sensitivity vs. Wavelength

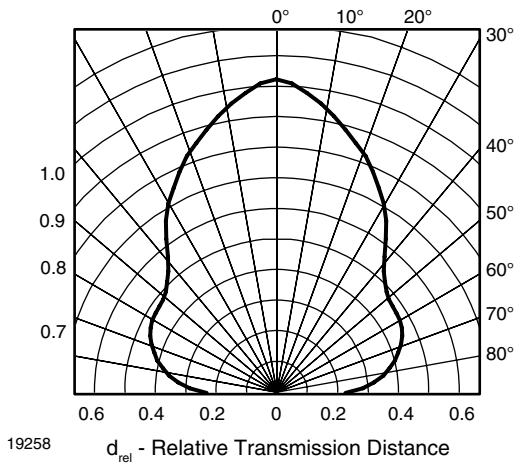


Fig. 4 - Horizontal Directivity

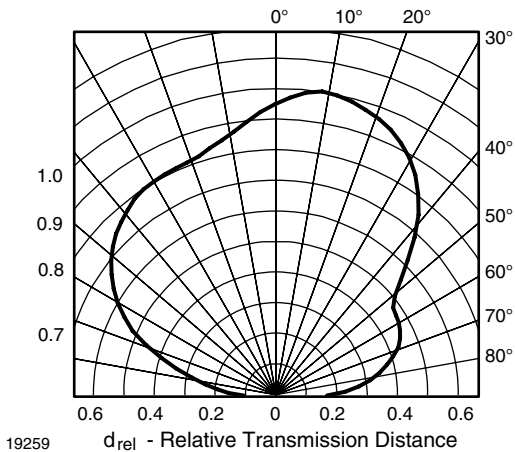
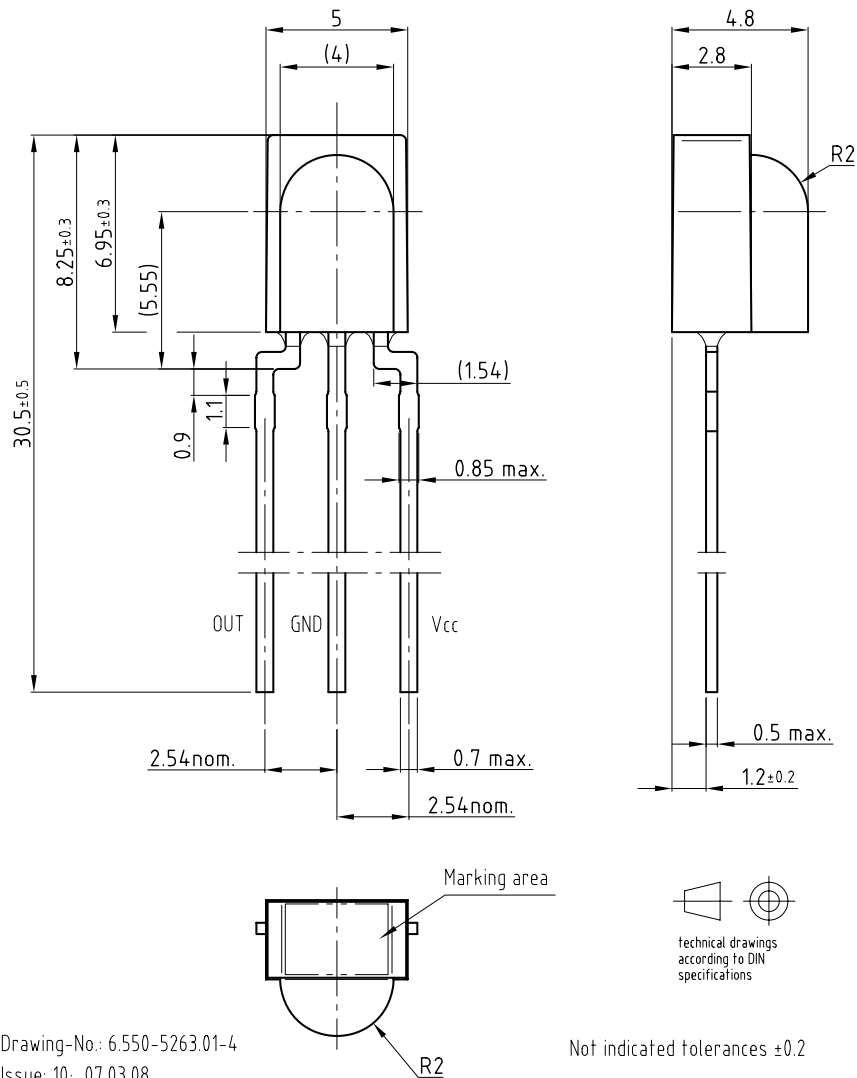


Fig. 5 - Vertical Directivity



PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.550-5263.01-4
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19009

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