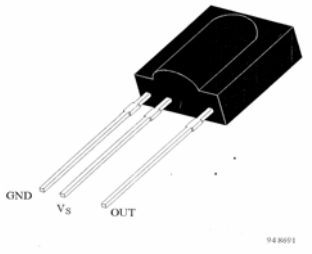
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MICROCIRCUIT FOR REMOTE CONTROL SYSTEMS

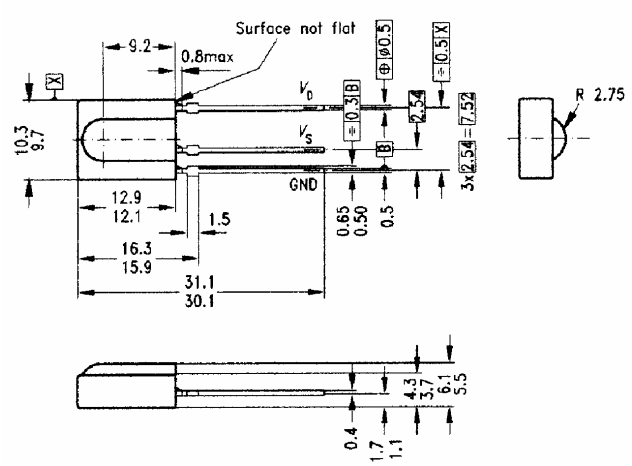
Description

Microcircuit is mini photomodule designed for IR signal reception in remote control systems. Photomodule output signal can be decode directly by microprocessor. Advantage is resistant funktioning and protection from uncontrolled output impulse.

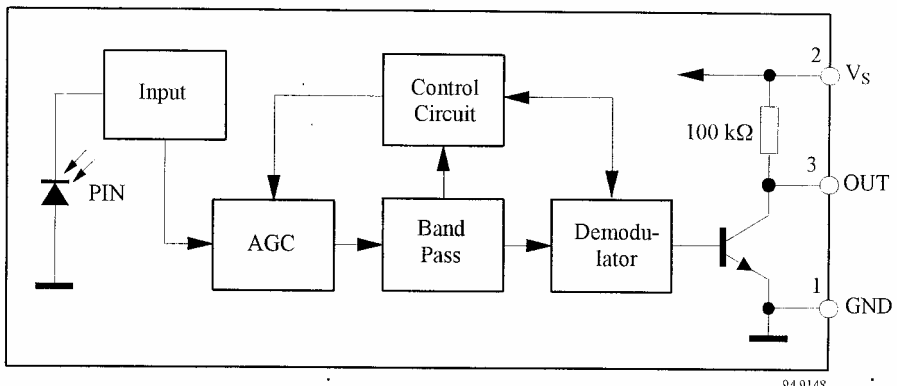


Characteristic:

- Photodiode and preamplifier in one frame
- Inside band-pass filter for subcarrier frequency (PCM) of 36 Hz
- Frame material protects from daylight exposure
- Special screen protects from external electric fields exposure
- Supply voltage 5V
- TTL and CMOS compability



Block diagram



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Limiting parameters values Tamb=25°C

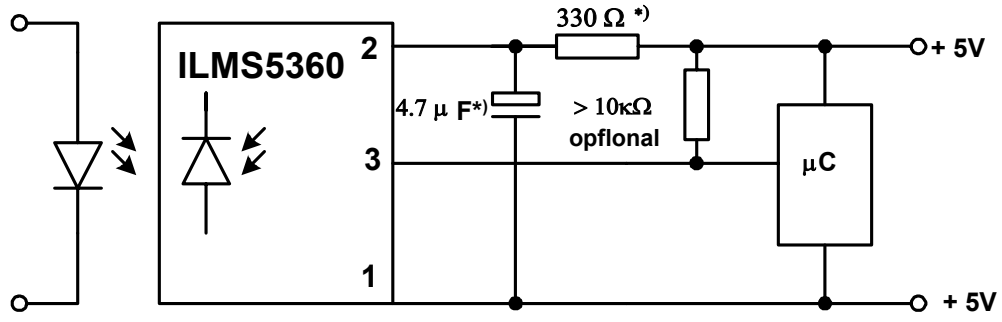
Title	Measurements condition	Notation	Meaning	Measur-ement unit
Supply voltage		Vs	4.5 ÷ 5.5	W
Power current		Is	0.8	мА
Transition temperature		T_J	100	°C
Storage temperature		Tstg	-25.÷.+85	°C
Operating temperature		Tamb	-25 ÷+85	°C
Power consumption	(Tamb = 85 °C)	Ptot	50	mW

Basic characteristics Tamb=25°C

Title	Measurements conditions	Notation	MIN	TYP	MAX	Meas-uremet unit.
Current consumtion (Output 2)	Vs = 5 V, Ev = 0	I_{SD}	0.4	0.5	0.8	mA
Current consumption (Output 2)	Vs = 5 V, Ev = 40 klx, sun light	I_{SH}	-	1.0	-	mA
Transmission distance	Ev = 0, test signal, IR-diode TSIP5201, Ip = 1.5 A	d	-	32	-	m
Output voltage of low level (Output 3)	IOSL = 0.5 мА, Ee = 0.5 mW/M^2, f=fo,t_{PI}/N=0,4 Test signal	V_{OSL}	-	-	250	mW
Minimum density of IR-radiating power*	t_{PO}=t_{PI} ±160 мкс Test signal	Eemin	0.6	0.4	-	mW/m^2
Maximum radiation	Test signal	Eemax	-	-	20	W/m^2

* - accordance with customer order programming of subcarrier frequency can be fulfilled (PCM) F_O in range of(36-40) кHz

Circuit connection.



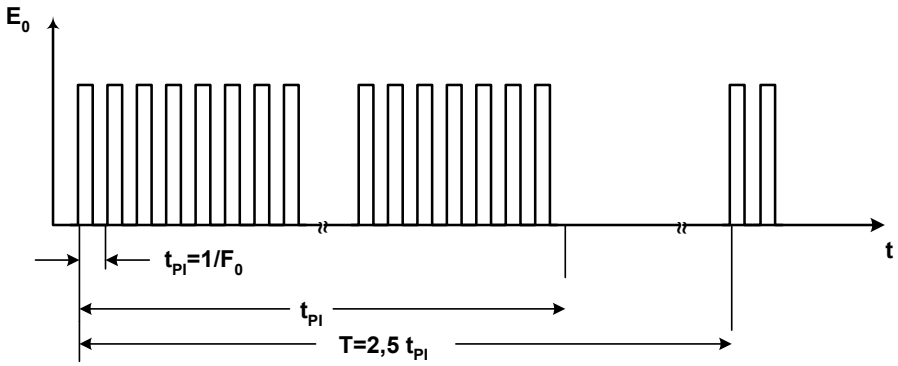
***)** - it is necessary only for power source interference suppression + 5V.

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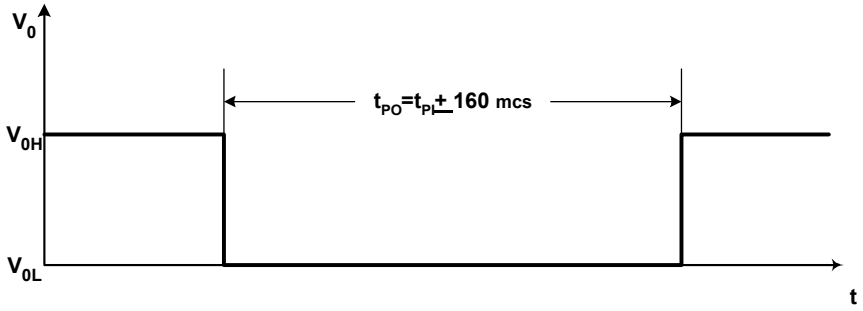
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Input test signal



Input signal



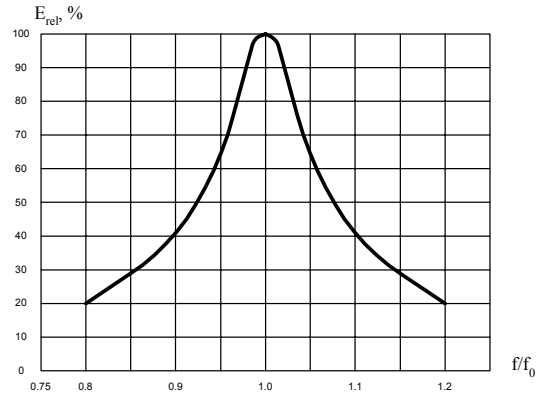


Figure 1 – Dependence of sensitivity as function of normalized frequency, Tamb = 25°C (amplitude-frequency response).

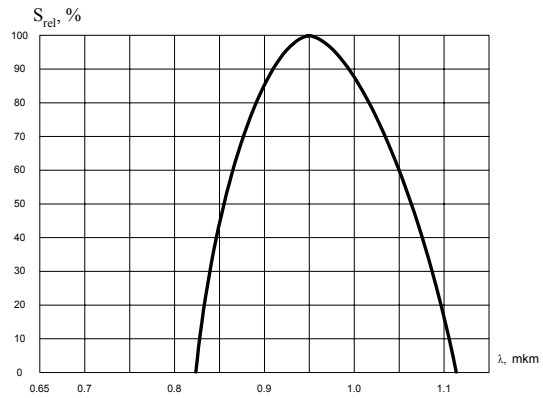


Figure 2 – Dependence of sensitivity on IR-radiation wave length by Tamb = 25°C (spectral response).

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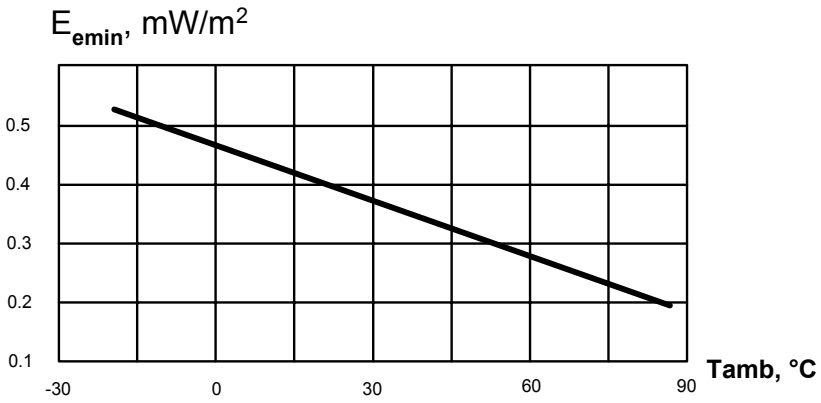
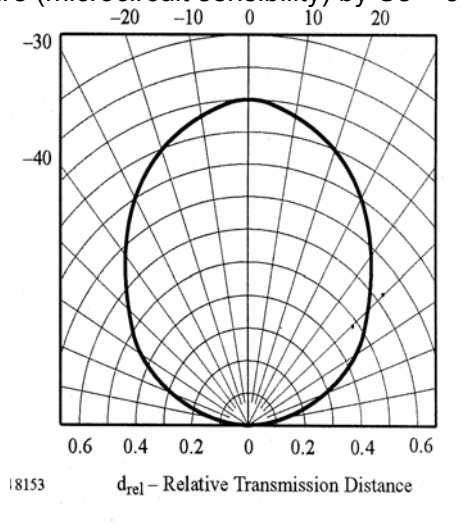
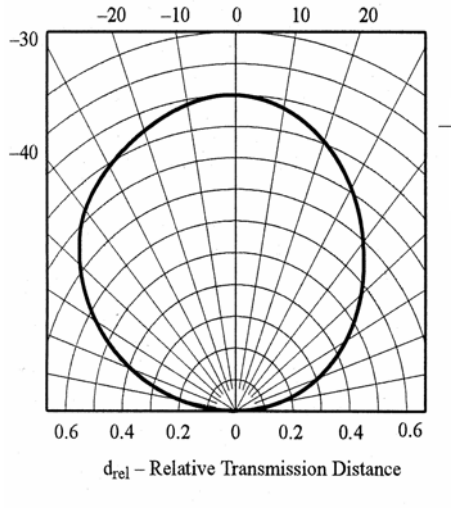


Figure 3 – Dependence of IR radiation minimum power density parameter on environment temperature (microcircuit sensibility) by Us = 5B.



a) vertical direction



b) horizontal direction

Figure 4 – Dependence of relative sensitivity on infra-red source angle turn.

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