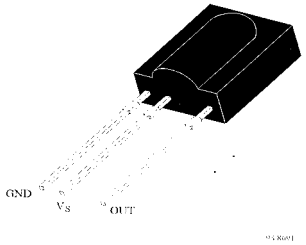
ILMS5360

MICROCIRCUIT FOR REMOTE CONTROL SYSTEMS

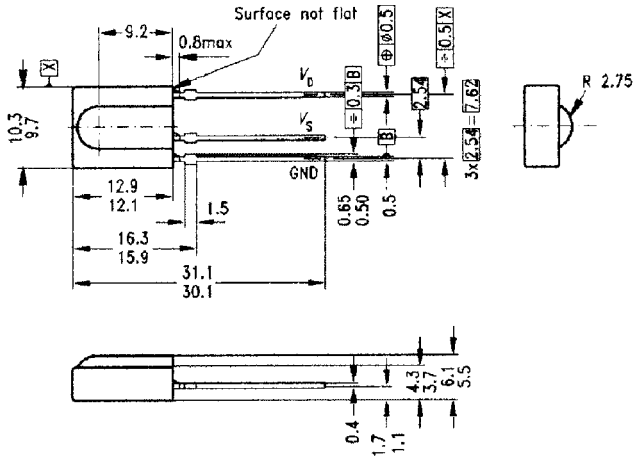
Description

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.

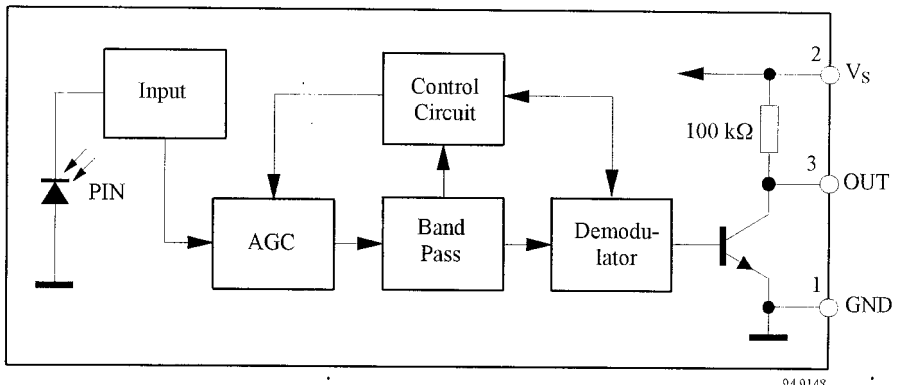


Characteristic:

- Photodiode and preamplifier in one package
- 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 compatibility



Block diagram



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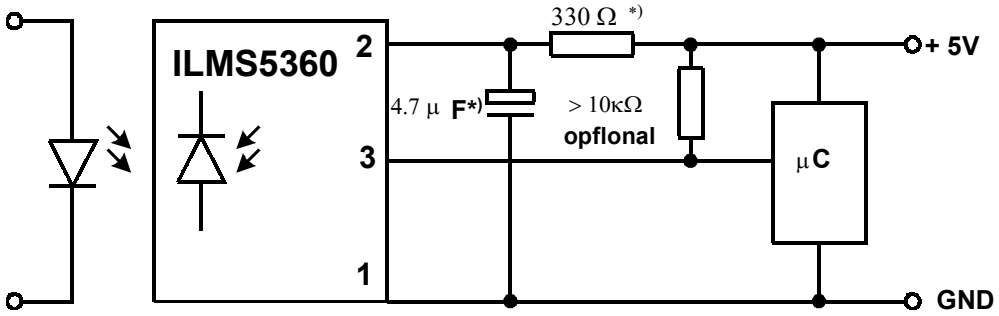
Absolute Maximum Ratings Tamb=25°C

Parameter	Test conditions	Symbol	Value	Unit
Supply voltage		Vs	0.3 ÷ 6.0	V
Power current		Is	1.0	mA
Junction 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

Parameter	Test conditions	Symbol	MIN	TYP	MAX	Unit.
Current consumption (Pin 2)	Vs = 5 V, Ev = 0	I_{SD}	0.4	0.5	0.8	mA
Current consumption (Pin 2)	Vs = 5 V, Ev = 40 klx, sunlight	I_{SH}	-	1.0	-	mA
Output voltage of low level (Pin 3)	IOSL = 0.5 мА, Us=5.0 V Ee = 0.7 mW/M^2, f=fo,t_{PI}/N=0,4 Test signal	V_{OSL}	-	-	250	mV
Minimum density of IR-radiating power	$t_{PO}=t_{PI}$ ±160 мкс Test signal	Eemin		0.4	0.6	mW/m^2
Maximum radiation IR-radiating power	Test signal	Eemax	20	-	-	W/m^2

Circuit connection



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

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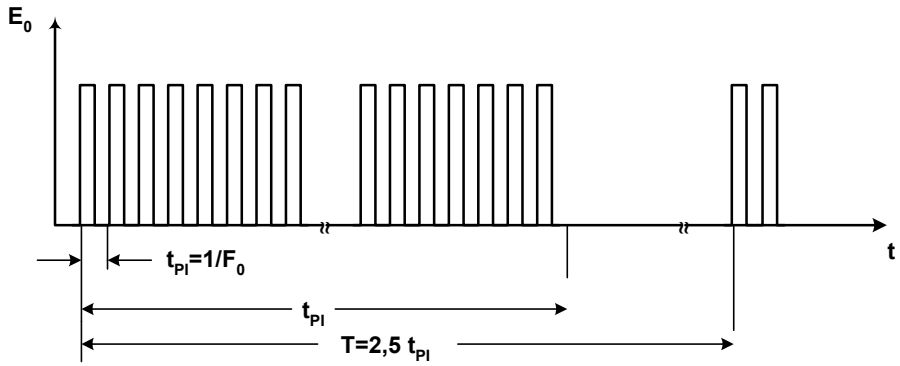
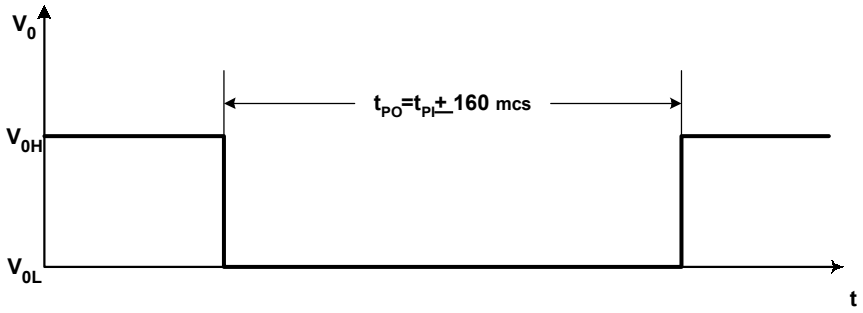
Input test signal



Output signal



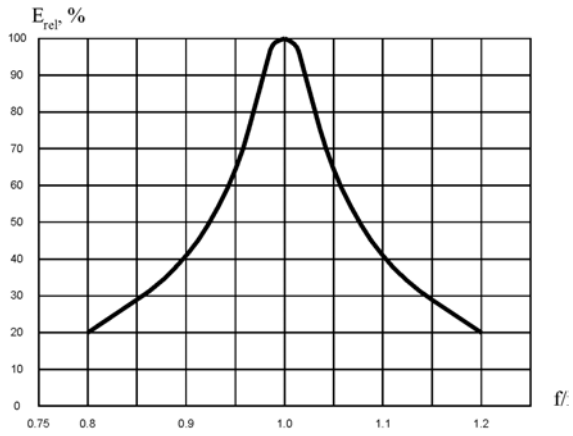


Figure 1 – Dependence of sensitivity as function of normalized frequency, Tamb = 25°C (amplitude-frequency response).

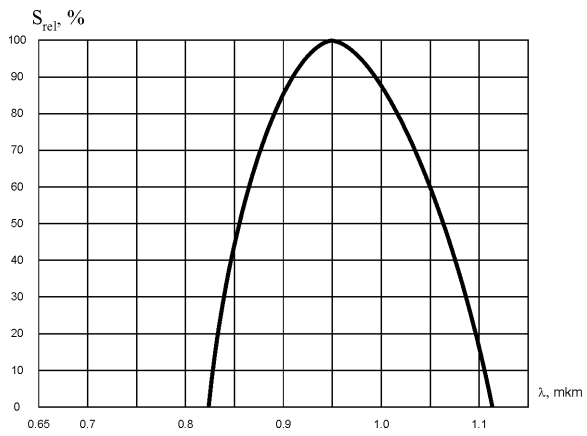


Figure 2 – Dependence of sensitivity on IR-radiation wave length by Tamb = 25°C (spectral response).

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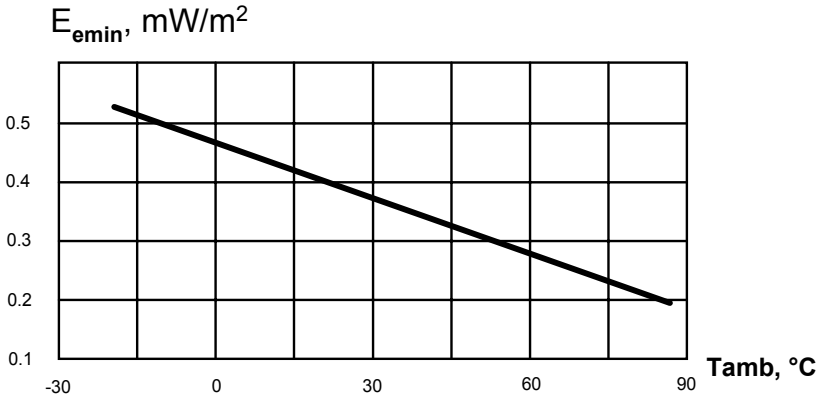
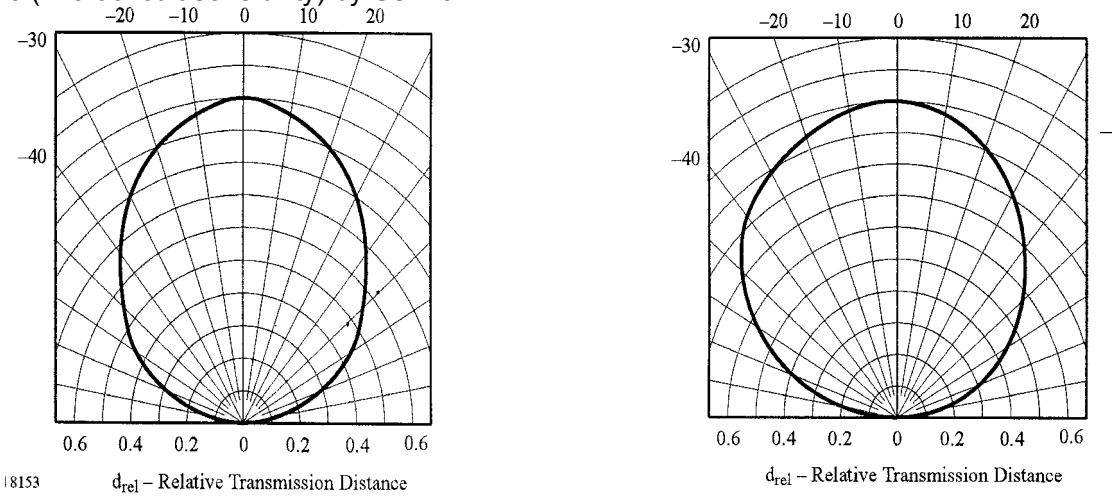


Figure 3 – Dependence of IR radiation minimum power density parameter on environment temperature (microcircuit sensibility) by Us = 5B.



a) vertical direction

b) horizontal direction

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

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