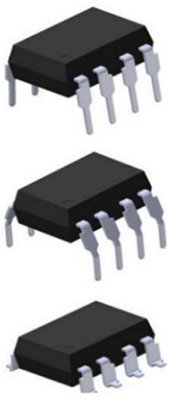


1. Features

(1) 3.3v / 5V supply voltage
(2) Low power consumption
(3) High speed: 15MBd(typical)
(4) V_{CM}=1000V, and the lowest common mode inhibition (CMR) is 10 kv/μs.
(5) - 40 ℃ ~ + 110 ℃ temperature of AC and DC performance.
(6) Safety approval
UL approved (No.E323844)
VDE approved (No.40029733)
CQC approved (No.CQC19001231254)
(7) In compliance with RoHS, REACH standards
(8) MSL Class I

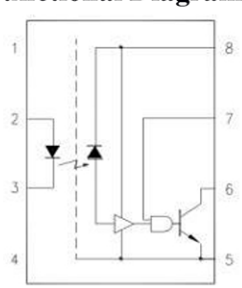
2. Instructions

6N137 is made up of an efficient AlGaAs light-emitting diode and high-speed optical detector. This design provides good ac and dc isolation between the input and output ends of the photoelectric coupler. The output characteristic of the photodetector is a collector open circuit schottky clamp transistor. The total mode transient immunity should reach 10 kv/pa at 3.3 v. The photoelectric couple operating temperature range: - 40 ℃ ~ + 110 ℃.

3. Application Range

1. line receiver isolation
2. A/ D, D/A converted digital signal isolation
3. eliminate noise from the ground loop
4. switching power supply
5. alternative pulse transformers
6. motor control system
7. interface of microprocessor system, computer and peripheral equipment

4. Functional Diagram



1. NC
2. Anode
3. Cathode
4. NC
5. GND
6. Output
7. V_E(Enable)
8. V_{CC}

Truth table

Input (LED	Enable	Output
ON	H	L
OFF	H	H
ON	L	H
OFF	L	H
ON	NC	L
OFF	NC	H

0.1 capacitor F bypass capacitance needs to be connected between A Pin8 and Pin5

5. Absolute Maximum Ratings (Ta=25℃)*1

Parameter		Symbol	Rated Value	Unit
Input	Average Forward Input Current	I_F	20	mA
	Reverse Input Voltage	V_R	5	V
	Power Dissipation	P_I	40	mW
	Enable Input Voltage	V_E	VCC+0.5	V
	Enable Input current	I_E	5	mA
Output	Output Collector Current	I_O	50	mA
	Output Collector Voltage	V_O	7	V
	Output Collector Power Dissipation	P_O	85	mW
Supply Voltage		V_{CC}	7	V
Insulation Voltage		V_{iso}	5000	Vrms
Working Temperature		T_{opr}	-40 ~ + 110	℃
Storage Temperature		T_{stg}	-55 ~ + 125	
*2	Soldering Temperature	T_{sol}	260	

*1. Room temperature = 25 ℃. Exceeding the maximum absolute rating can permanently damage the device.

Working long hours at the maximum absolute rating can affect reliability.

*2. soldering time is 10 seconds.

6. Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Operating Temperature	T_A	-40	110	℃
Supply Voltage	V_{CC}	2.7	3.6	V
		4.5	5.5	
Low Level Input Current	I_{FL}	0	250	μA
High Level Input Current	I_{FH}	5	15	mA
Low Level Enable Voltage	V_{EL}	0	0.8	V
High Level Enable Voltage	V_{EH}	2	V_{CC}	V
Output Pull-up Resistor	R_L	330	4000	Ω
Fan Out (at RL=1kΩ per channel)	N	—	5	TTL Loads

7. Opto-electronic Characteristics

Parameter		Symbol	Min	Typ	Max	Unit	Condition
Input	Forward Voltage	V_F	—	1.38	1.7	V	I_F= 10mA
	Temperature Coefficient OF Forward Voltage	$\Delta V_F/\Delta T$	—	-1.5	—	mV/°C	I_F= 10mA
	Reverse Voltage	BV_R	5	—	—	V	I_R = 10μA
	Input Threshold Current	I_{TH}	—	1.5	5	mA	V_E=2V,V_{CC}=3.3V V_O=0.6V I_{OL} (sinking) =13mA
	Input Capacitance	C_{IN}	—	34	—	pF	f = 1MHz, VF = 0V
Detector	High Level Supply Current	I_{CCH}	—	3.8	10	mA	V_E= 0.5V, V_{CC}=3.3V,I_F=0mA
	Low Level Supply Current	I_{CCL}	—	5.8	13	mA	V_E= 0.5V, V_{CC}= 3.3V,I_F=10mA
	High Level Enable Current	I_{EH}	—	-0.19	-1.6	mA	V_{CC}= 3.3V,V_E=2V
	Low Level Enable Current	I_{EL}	—	-0.41	-1.6	mA	V_{CC}= 3.3V,V_E=0.5V
	High Level Enable Voltage	V_{EH}	2	—	—	V	
	Low Level Enable Voltage	V_{EL}		—	0.8	V	
	High Level Output Current	I_{OH}	—	5	100	μA	V_E=2V, V_{CC}=3.3V, V_O=3.2V,I_F=250μA
	Low Level Output Voltage	V_{OL}	—	0.3	0.6	V	V_E=2V, V_{CC}=3.3V, I_F=5mA, I_{OL} (sinking) = 13mA

Recommended temperature range (T_A= -40°C—+110°C,2.7V≤V_{CC}≤3.6 V),I_F= 7.5mA Unless otherwise stated. Typical valuesT_A =25°C,V_{CC} = 3.3 V.