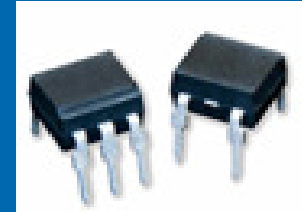


OPTOCOUPPLERS A BRIEF INTRODUCTION

- There are many situations where signals and data need to be transferred from one subsystem to another within a piece of electronics equipment ,or from one piece of equipment to another ,without making a direct ohmic electrical connection.Often this is because the source and destination are (or may be at times) at very different voltage levels ,like a microprocessor which is operating from 5V DC but being used to control a triac which is switching 240V AC. In such situations the link between the two must be an ISOLATED one, to protect the microprocessor from overvoltage damage
- Relays can of course provide this kind of isolation ,but even small relays tend to be fairly bulky compared with ICs and many of today's other miniature circuit components .Because they're electro mechanical ,relays are also not as reliable ,and only capable of relatively low speed operation .Where small size ,higher speed and greater reliability are important, a much better alternative is to use an OPTOCOUPLER .These use a beam of light to transmit the signals or data across an electrical barrier ,and achieve excellent isolation



WHAT IS AN OPTOCOUPLER ?



- OPTOCOUPLERS typically come in a small 4 ,6 , 8 and 16-pin IC package ,but are essentially a combination of two distinct devices : an optical transmitter ,typically a gallium arsenide LED and an optical receiver such as a phototransistor or light triggered Diac .The two are separated by a transparent barrier which blocks any electrical current flow between the two ,but does allow the passage of light .The electrical signal is converted to a light beam ,transferred and then converted back to an electrical signal .
- OPTOCOUPLERS are essentially digital or switching devices ,so they're best for transferring either on-off control signals or digital data
- The most important parameter for most OPTOCOUPLERS is their transfer efficiency ,usually measured in terms of their current transfer ratio or CTR ,this is simply the ratio between a current change in the output transistor and the current change in the input LED which produced it
- Other important criteria are the Isolation Voltage typically 5KV and Collector Emitter Breakdown Voltage listed as BV_{eco}

PRODUCT RANGES –TRANSISTOR OUTPUT (BASE AND NON BASE TYPES)

➤ 4PIN TYPES :

ISP321-1

ISP521-1

ISP621-1

ISP817

ISP624-1

PS2501-1

SFH615A

SFH617A

SFH618A

TIL191

TLP321

TLP521

TLP624



➤ 6PIN TYPES:

4N25 ,4N26,4N27,4N28,4N35,4N36

4N37 ,4N38

CNX72

CNX83AG

CNY17

CNY75

CQY80

H11A1 ,H11A2,H11A3,H11A4,H11A5

H11AV1 ,H11AV2,H11AV3

IL1,IL2,IL5,IL74

IS1,IS2,IS5,IS74

IS201,IS202,IS203,IS204

MCT2,MCT210,MCT2200,MCT2201

MCT2202 ,MCT270,MCT271,MCT272

SFH600,SFH601,SFH609

TIL111,TIL114,TIL116,TIL117

PRODUCT RANGES –TRANSISTOR OUTPUT CONT:

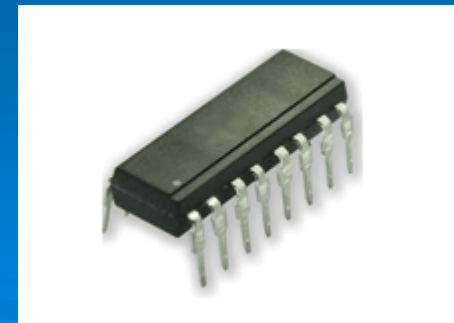
➤ 8PIN TYPES:

ISP321-2
ISP521-2
ISP621-2
ISP827
ISP624-2
PS2501-2
TIL192
TLP321-2
TLP521-2
TLP621-2
TLP624-2



➤ 16PIN TYPES

ISP312-4
ISP521-4
ISP621-4
ISP847
ISP624-4
PS2501-4
TIL193
TLP321-4
TLP521-4
TLP621-4
TLP624-4



PRODUCT RANGES-TRANSISTOR OUTPUT CONT:

➤ 6PIN TYPE-NON BASE

CNX62A ,CNX82A

CNY17F-1 ,CNY17F-2,CNY17F-3,

CNY17F-4 ,CNY17F-5

IS205,IS205-1,IS205-3

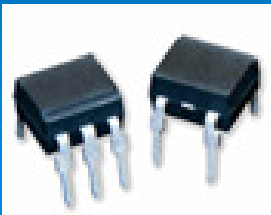
IS206

MOC8101 ,MOC8102,MOC8103

MOC8104,MOC8105,MOC8106

MOC8107,MOC8108 ,MOC8111,

MOC8112,MOC8113



➤ 8PIN TYPE-SYMETRICAL CONFIGURATION

ILD1,ILD2,ILD5,ILD74

IS829

ISD1,ISD2,ISD5 ,ISD74

MCT6 ,MCT61,MCT62,MCT66

➤ 8PIN TYPE,HIGH CTR,HIGH SENSITIVITY/LOW INPUT CURRENT

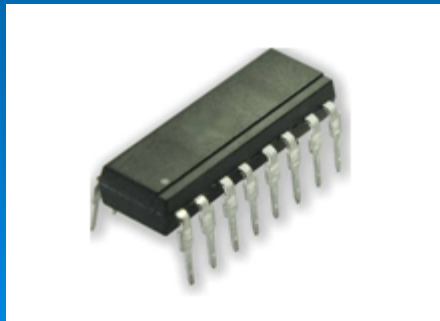
ISD201,ISD202,ISD203,ISD204

ISD204-1 ,ISD204-2,ISD204-3

PRODUCT RANGES-TRANSISTOR OUTPUT CONT:

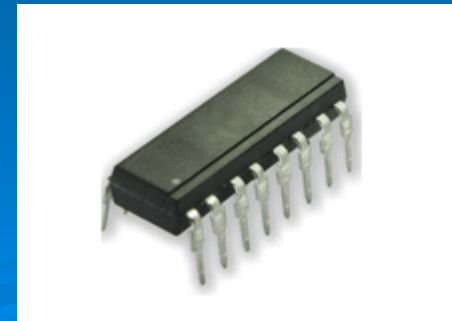
➤ 16PIN TYPE SYMMETRICAL CONFIGURATION

ILQ1
ILQ2
ILQ5
ILQ74
IS849
ISQ1
ISQ2
ISQ5
ISQ74



➤ 16PIN TYPE HIGH CTR,HIGH SENSITIVITY/LOW INPUT CURRENT

ISQ201
ISQ202
ISQ203
ISQ204
ISQ204-1
ISQ204-2
ISQ204-3



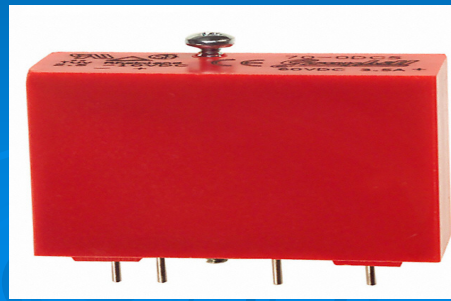
PRODUCT RANGES-TRANSISTOR OUTPUT CONT

➤ APPLICATIONS

- Power Supply
- Telephone/Fax
- Logic Controller
- DC-Output Module
- Telecom
- Industrial Controls
- Battery Powered Equipment

➤ WHY USE THIS TYPE ?

The Transistor Output types can be used in most circumstances common uses are Mains Isolation and protection against noise



PRODUCT RANGES – AC INPUT

➤ 4PIN TYPES

ISP620-1
ISP626-1
ISP814-1,ISP814-2,ISP814-3
PS2505-1
SFH620-1,SFH620-2,SFH620-3
SFH620A-1 ,SFH620A-2 ,SFH620A-3
SFH628-2 ,SFH628-3 ,SFH628-4
SFH628A-2 ,SFH628A-3 ,SFH628A-4
TIL194 ,TIL 194A ,TIL194B
TLP620-1 ,TLP626-1

➤ 6PIN TYPES

CNY35
H11AA1 ,H11AA2,H11AA3,H11AA4
IS606
IS733

➤ 8PIN TYPES

ISP620-2
ISP626-2
ISP824
PS2505-2
TIL195,TIL195A,TIL195B
TLP620-2
TLP626-2

➤ 16PIN TYPES

ISP620-4
ISP626-4
ISP844
PS2505-4
TIL196 ,TIL196A ,TIL196B
TLP620-4
TLP626-4



PRODUCT RANGES –AC INPUT

➤ **APPLICATIONS :**

- Programmable Controller
- Telecoms
- Industrial Controller
- AC/DC Input Module
- Measuring Instruments
- Computer Terminal
- Signal transmission between systems of different potentials and impedances
- Bell Signal Detectors
- Loop Detector



➤ **WHY USE THIS TYPE ?**

AC Input devices , as the name implies ,switch on the output transistor when an AC voltage (or a DC voltage of either polarity) is applied to the input .A typical application of this device is to detect the presence ,or lack of ,an AC Voltage



PRODUCT RANGES – DARLINGTON OUTPUT

➤ 4PIN TYPES :

ISP627-1

ISP815-1 ,ISP815-2,ISP815-3

PS2502-1

TIL197 ,TIL197A ,TIL197B

TLP627-1

6PIN TYPES :

4N29 ,4N30,4N31,4N33

H11B1 ,H11B2,H11B3

MCA2230,MCA2231 ,MCA2255

MCA255

MCA230 ,MCA231

MOC8080

TIL113

➤ 6PIN TYPES- NON BASE

ISPD60 ,ISPD61,ISPD62,ISPD63

ISPD64,ISPD65

MOC8020 ,MOC8021,MOC8030

MOC8050

TIL119

➤ 6PIN TYPES –HIGH VOLTAGE

H11G1 ,H11G2 ,H11G3

IS4N45 ,IS4N46

IS660 ,IS661

IS725



PRODUCT RANGES-DARLINGTON OUTPUT

➤ 8PIN TYPES :

ISP825

ISP825-1 ,ISP825-2 ,ISP825-3

PS2502-2

TIL198 ,TIL198A ,TIL198B

16PIN TYPES :

ISP845

ISP845-1,ISP845-2 ,ISP845-3

PS2502-4

TIL199 ,TIL199A ,TIL199B

➤ APPLICATIONS :

Low Power Logic Circuits

Telecomms Equipment

Portable Electronics

Solid State Relays

Interfacing coupling systems of
Different potentials and impedances

➤ WHY USE THIS TYPE ?

A Darlington type is used where a high transfer gain is required and also a much higher CTR ,up to 1000%



PRODUCT RANGES - TRIAC

➤ 6PIN TYPE –RANDOM PHASE

H11J1 ,H11J2 ,H11J3 ,H11J4,H11J5

IS3009,IS3010,IS3011,IS3012

IS3020,IS3021,IS3022,IS3023

IS3051,IS3052

IS6003 ,IS6005 ,IS6010 ,IS6015

IS6030

IS607 ,IS608

MOC3009 ,MOC3010 ,MOC3011

MOC3012 ,MOC3020 ,MOC3021

MOC3022 ,MOC3023

MOC3051 ,MOC3052

➤ 6PIN TYPE –ZERO CROSSING

IS3030 ,IS3031 ,IS3032 ,IS3033

IS3040 ,IS3041 ,IS3042 ,IS3043

IS3060 ,IS3061 ,IS3062 ,IS3063

IS3080 ,IS3081 ,IS3082 ,IS3083

IS620 ,IS621 ,IS622 ,IS623

MOC3030 ,MOC3031 ,MOC3032

MOC3033 ,MOC3040 ,MOC3041

MOC3042 ,MOC3043 ,MOC3060

MOC3061 ,MOC3062 ,MOC3063

MOC3080 ,MOC3081 ,MOC3082

MOC3083



PRODUCT RANGES -TRIAC

➤ APPLICATIONS :

- Solenoid /Valve Controls
- Lamp Ballasts
- Static AC Power Switch
- Interfacing Microprocessors to 115 and 240Vac peripherals
- Solid State Relay
- Incandescent Lamp Dimmers
- Temperature Controls
- Motor Controls
- E.M. Contactors
- Vending Machines



➤ WHY USE THIS TYPE ?

Triac Optocouplers are used where Control of AC voltages is required and in very high current applications they can be used to control an external power triac or SCR , particularly in the interface of logic Systems to equipment powered from 115Vac lines such as solid state relays ,printers ,motors etc



PRODUCT RANGES – SCHMITT TRIGGER

➤ **6PIN TYPE :**

H11L1 ,H11L2 ,H11L3 ,H11L4

IS609

MOC5007

MOC5008

MOC5009

WHY USE THIS TYPE ?

Ideal for applications requiring electrical isolation ,fast response time ,
Noise immunity and digital logic compatibility



➤ **APPLICATIONS :**

- Logic to Logic Isolator
- Line receiver –eliminates noise and transient problems
- Programmable current level sensor
- AC-TTL conversion
- Digital Programming of Power Supplies
- Digital control of Motors and other servo machine applications
- Interface computers with peripherals

PRODUCT RANGES – MINI FLAT PACKAGE **NEW !**

➤ 4PIN TRANSISTOR OUTPUT

IS121

IS181

IS2701-1

IS357

IS357A ,IS357B ,IS357C ,IS357D

➤ 4PIN AC INPUT

IS126

IS2705-1

IS354 ,IS354A



➤ 4PIN DARLINGTON OUTPUT

IS355

IS2702-1

➤ 4PIN DARLINGTON OUTPUT (HIGH VOLTAGE)

IS2732-1

IS452

IS127

➤ 8 PIN TRANSISTOR OUTPUT

MOCD207

PRODUCT RANGES –MINI FLAT PACKAGE

➤ **APPLICATIONS :**

- AC Adapter
- I/O Interface Board
- Programmable Controllers
- Measuring Instruments
- Office Machine
- Feedback Control Circuits
- Monitor and Detection Circuits
- General Purpose Switching Circuits

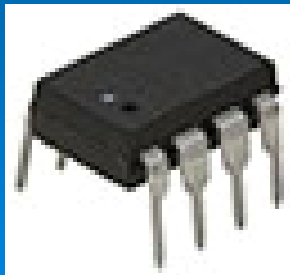
➤ **WHY USE THIS TYPE ?**

With its small outline package ,the Mini Flat Coupler is ideally suited for High density surface mounting Applications .



PRODUCT RANGES – HIGH SPEED COUPLERS **NEW**

- **8 PIN 1Mbit/s TRANSISTOR**
6N135 ,6N136 ,ICPL4502
- **8 PIN 10MBit/s LOGIC GATE**
6N137
- **8 PIN SPLIT DARLINGTON**
6N138 ,6N139



- **APPLICATIONS :**
- Digital Logic Ground Isolation
- RS-232C Line Receiver
- High Common Mode Noise Line Receiver
- Pulse Transformer Replacement
- Current Loop Receiver
- Microprocessor Bus Isolation
- Wide Bandwidth Analog Coupling

WHY USE THIS TYPE ?

Higher speed operation than possible with standard couplers ,plus internal noise shield provides exceptional Common mode rejection of 10Kv/us . An improved package allows superior Insulation permitting a 480V working Voltage compared to standard 220V

PRODUCT RANGES – HALF PITCH PRODUCT **NEW !**

➤ **4PIN HALF PITCH**

- IS281
- IS2801-1

➤ **4PIN LONG CREEPAGE**

- ISLT1102

➤ **16PIN QUAD PACKAGE**

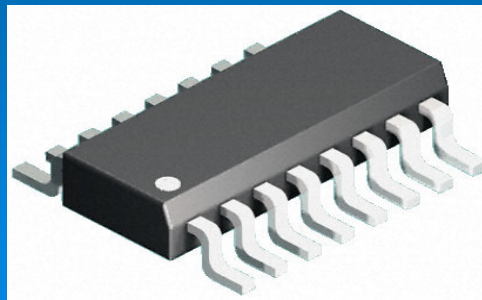
- IS2801-4

➤ **APPLICATIONS :**

- Switchmode Power Supplies
- Computer Peripheral Interface
- Microprocessor System Interface
- Measuring Instruments
- Sequence Controller
- PC Card (PCMCIA)
- AC/DC Input Module

➤ **WHY USE THIS TYPE ?**

With its very small and thin package
The half pitch range is ideally suited
to surface mount assembly such as
PCMCIA and high density PCB's



PRODUCT RANGES –OPTICAL SWITCHES

- **H21A1 ,H21A2 ,H21A3** – With Mounting Shoulders
- **H22A1 ,H22A2 ,H22A3** – Without Mounting Shoulders
- Description :The H21A and H22A series of Opaque Photo-interrupters are single channel switches consisting of a Gallium Arsenide infrared emitting diode and an NPN Silicon phototransistor mounted in a polycarbonate housing .The package is designed to optimise the mechanical resolution ,coupling ,efficiency ,ambient light rejection ,cost and reliability
- Applications :Computer Printers ,Copiers ,Vending machines ,Coin Slots ,Optoelectronic Switches ,Record Players

