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Saludos muy cordiales desde **Chip's SU FUTURO EN TECNOLOGIA**

Adjunto encontrará la Información Técnica solicitada por usted.

Distribuimos Repuestos de muy Buena Calidad, Fabricados bajo normas y estándares internacionales ISO 9001, Probados y Garantizados por empresas líderes mundiales en tecnología de semiconductores.

Nuestros precios son Razonables y la Disponibilidad de sus Repuestos no es inconveniente ya que somos parte de una **RED INTERNACIONAL** de búsqueda, rastreo y localización de Repuestos Electrónicos de Calidad.

Cualquier inquietud o si desea más información sobre estos Repuestos, por favor comuníquese conmigo hoy mismo, muy gustoso estoy aquí para servirle.

Atentamente,



**Carlos Erazo**

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## Optocoupler, Phototransistor Output, With Base Connection

### Features

- Interfaces with common logic families
- Input-output coupling capacitance < 0.5 pF
- Industry Standard Dual-in line 6-pin package
- 5300 V<sub>RMS</sub> isolation test voltage

### Agency Approvals

- UL File #E52744 System Code H or J
- CSA 93751
- BSI IEC60950 IEC60965
- DIN EN 60747-5-2(VDE0884)  
DIN EN 60747-5-5 pending  
Available with Option 1
- FIMKO

### Applications

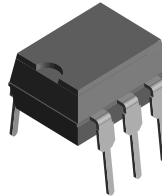
- AC mains detection
- Reed relay driving
- Switch mode power supply feedback
- Telephone ring detection
- Logic ground isolation
- Logic coupling with high frequency noise rejection

### Description

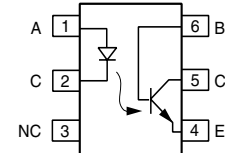
The H11Ax family is an Industry Standard Single Channel Phototransistor Coupler. It includes the H11A1/ H11A2/ H11A3/ H11A4/ H11A5 couplers.

Each optocoupler consists of gallium arsenide infrared LED and a silicon NPN phototransistor.

The isolation performance is accomplished through Vishay double molding isolation manufacturing process. Compliance to DIN EN 60747-5-2(VDE0884)/ DIN EN 60747-5-5 pending partial discharge isolation specification is available is by ordering option 1.



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These isolation processes and the Vishay ISO9001 quality program results in the highest isolation performance available for a commercial plastic phototransistor optocoupler.

The devices are available in lead formed configuration suitable for surface mounting and are available either on tape and reel, or in standard tube shipping containers.

### Footnotes

Designing with data sheet is covered in Application Note 45.

### Order Information

Part	Remarks
H11A1	CTR > 50 %, DIP-6
H11A2	CTR > 20 %, DIP-6
H11A3	CTR > 20 %, DIP-6
H11A4	CTR > 10 %, DIP-6
H11A5	CTR > 30 %, DIP-6
H11A1-X006	CTR > 50 %, DIP-6 400 mil (option 6)
H11A1-X007	CTR > 50 %, SMD-6 (option 7)
H11A1-X009	CTR > 50 %, SMD-6 (option 9)

For additional information on the available options refer to Option Information.

### Absolute Maximum Ratings

$T_{amb} = 25\text{ °C}$ , unless otherwise specified

Stresses in excess of the absolute Maximum Ratings can cause permanent damage to the device. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of this document. Exposure to absolute Maximum Rating for extended periods of the time can adversely affect reliability.

### Input

Parameter	Test condition	Symbol	Value	Unit
Reverse voltage		$V_R$	6.0	V
Forward current		$I_F$	60	mA
Surge current	$t \leq 10\ \mu\text{s}$	$I_{FSM}$	2.5	A
Power dissipation		$P_{diss}$	100	mW

### Output

Parameter	Test condition	Symbol	Value	Unit
Collector-emitter breakdown voltage		$V_{CEO}$	70	V
Emitter-base breakdown voltage		$V_{EBO}$	7.0	V
Collector current		$I_C$	50	mA
	$(t < 1.0\ \text{ms})$	$I_C$	100	mA
Power dissipation		$P_{diss}$	150	mW

### Coupler

Parameter	Test condition	Symbol	Value	Unit
Isolation test voltage		$V_{ISO}$	5300	$V_{RMS}$
Creepage			$\geq 7.0$	mm
Clearance			$\geq 7.0$	mm
Isolation thickness between emitter and detector			$\geq 0.4$	mm
Comparative tracking index per DIN IEC 112/VDE0303, part 1			175	
Isolation resistance	$V_{IO} = 500\ \text{V}, T_{amb} = 25\text{ °C}$	$R_{IO}$	$10^{12}$	$\Omega$
	$V_{IO} = 500\ \text{V}, T_{amb} = 100\text{ °C}$	$R_{IO}$	$10^{11}$	$\Omega$
Storage temperature		$T_{amb}$	- 55 to + 150	$^{\circ}\text{C}$
Operating temperature		$T_{stg}$	- 55 to + 100	$^{\circ}\text{C}$
Junction temperature		$T_j$	100	$^{\circ}\text{C}$
Soldering temperature	max. 10 s dip soldering: distance to seating plane $\geq 1.5\ \text{mm}$	$T_{sld}$	260	$^{\circ}\text{C}$



## Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluation. Typical values are for information only and are not part of the testing requirements.

### Input

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Forward voltage	$I_F = 10\text{ mA}$	H11A1	$V_F$		1.1	1.5	V
		H11A2	$V_F$		1.1	1.5	V
		H11A3	$V_F$		1.1	1.5	V
		H11A4	$V_F$		1.1	1.5	V
		H11A5	$V_F$		1.1	1.7	V
Reverse current	$V_R = 3.0\text{ V}$		$I_R$			10	$\mu\text{A}$
Capacitance	$V_R = 0, f = 1.0\text{ MHz}$		$C_O$		50		pF

### Output

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Collector-emitter breakdown voltage	$I_C = 1.0\text{ mA}, I_F = 0\text{ mA}$	$BV_{CEO}$	30			V
Emitter-collector breakdown voltage	$I_E = 100\text{ }\mu\text{A}, I_F = 0\text{ mA}$	$BV_{ECO}$	7.0			V
Collector-base breakdown voltage	$I_C = 10\text{ }\mu\text{A}, I_F = 0\text{ mA}$	$BV_{CBO}$	70			V
Collector-emitter leakage current	$V_{CE} = 10\text{ V}, I_F = 0\text{ mA}$	$I_{CEO}$		5.0	50	nA
Collector-emitter capacitance	$V_{CE} = 0$	$C_{CE}$		6.0		pF

### Coupler

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Saturation voltage, collector-emitter	$I_{CE} = 0.5\text{ mA}, I_F = 10\text{ mA}$	$V_{CEsat}$			0.4	V
Capacitance (input-output)		$C_{IO}$		0.5		pF

### Current Transfer Ratio

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
DC Current Transfer Ratio	$V_{CE} = 10\text{ V}, I_F = 10\text{ mA}$	H11A1	$CTR_{DC}$	50			%
		H11A2	$CTR_{DC}$	20			%
		H11A3	$CTR_{DC}$	20			%
		H11A4	$CTR_{DC}$	10			%
		H11A5	$CTR_{DC}$	30			%