

# PHOTOCOUPLER



SHARP's optoelectronic devices are manufactured in factories which have obtained ISO9001 certification from IEC\*. SHARP takes all possible measures for quality and reliability control.

\* IEC ... International Electrotechnical Commission.

## PHOTOCOUPLERS (1)

△: Under application    ○: Approved    (Ta=25°C)

Type	Model No.	Internal connection diagram	Features	Approved by safety standards			Package	Absolute maximum ratings			Electro-optical characteristics				
				UL	TÜV (VDE 0884)	VDE 0884		Others	Forward current I <sub>F</sub> (mA)	Isolation voltage (AC) V <sub>iso</sub> (Vrms)	Collector-emitter voltage V <sub>CE0</sub> (V)	Current transfer ratio CTR (%) MIN.	I <sub>F</sub> (mA)	t <sub>r</sub> (μs) TYP.	R <sub>L</sub> (Ω)
Single phototransistor output	PC123*7		High isolation voltage, long creepage distance	○	—	○*5	*2	4-pin DIP	50	5 000	70	50	5	4	100
	PC512		High isolation voltage, long creepage distance	○	—	○	*8	PWB mounting type 4-pin	50	5 000	35	10	20	3	100
	PC714V*1.6		High isolation voltage	○	—	—	—	6-pin DIP	50	5 000	35	50	5	4	100
	PC724V*1.6		High isolation voltage, large input current	○	—	—	—		150	5 000	35	20	100	4	100
	PC702V*1.6		High isolation voltage, high collector-emitter voltage	○	○*5	—	—		60	5 000	70	40	10	2	75
	PC703V*1.6		High isolation voltage, high collector-emitter voltage	○	○*5	—	—		50	5 000	70	40	10	4	100
	PC713V*1.6		High isolation voltage	○	○*5	—	—		50	5 000	35	50	5	4	100
	PC723V*1.6		High isolation voltage, high collector-emitter voltage	○	○*5	—	—		50	5 000	80	50	5	6	100
	PC727		Low input current drive (For detecting of ISDN circuit connection)	○	—	—	—		5	2 500	35	60	50μA	20	100
	PC733*1.6		High isolation voltage, AC input response	○	—	—	—		±50	5 000	35	15	±1	4	100
	PC733H*1.6		High isolation voltage, large input current drive, AC input response	○	—	—	—		±150	5 000	35	20	±100	4	100
	PC810*1.6		High isolation voltage, high speed at high load resistance	○	—	○*5	—		50	5 000	35	60	1	10	1 000
	PC812		High isolation voltage, high resistance to noise	—	—	○*5	—	50	5 000	35	90	5	4	100	
	PC816*1.6		High isolation voltage, high collector-emitter voltage	○	—	○*5	—	50	5 000	70	50	5	4	100	
PC817*1.4,6		High isolation voltage	○	○*5	—	—	50	5 000	35	50	5	4	100		
PC818*1.6		High isolation voltage, high speed at high load resistance	○	○*5	—	—	50	5 000	35	10	1	7	1 000		
PC851*1.6		High isolation voltage, high collector-emitter voltage	○	—	—	—	50	5 000	300	40	5	4	100		
PC866*3		High isolation voltage, low current drive type, high collector-emitter voltage	○	—	—	—	50	5 000	80	100	1	8	100		

Internet address for Electronic Components Group  
<http://www.sharp.co.jp/ecg/>

### Notice

In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.

## PHOTOCOUPPLERS (1)

△: Under application    ○: Approved

(Ta=25°C)

Type	Model No.	Internal connection diagram	Features	Approved by safety standards				Package	Absolute maximum ratings			Electro-optical characteristics			
				UL	TÜV (VDE 0884)	VDE 0884	Others		Forward current I <sub>F</sub> (mA)	Isolation voltage (AC) V <sub>iso</sub> (Vrms)	Collector-emitter voltage V <sub>CEO</sub> (V)	Current transfer ratio CTR (%) MIN.	I <sub>F</sub> (mA)	t <sub>r</sub> (μs) TYP.	R <sub>L</sub> (Ω)
Single phototransistor output	PC813		High isolation voltage, AC input response, high resistance to noise	○	—	○*5	—	4-pin DIP	±50	5 000	35	20	±1	4	100
	PC814*1,6		High isolation voltage, AC input response	○	—	○*5	—		±50	5 000	35	20	±1	4	100

\*1 Lead forming type (I type) is also available. Lead forming type of PC724V is PC724W.

\*2 BSI, SEMKO, DEMKO, NEMKO, FIMKO, CSA

\*3 High reliability type PC866Q is also available.

\*4 Wide leading spacing type (F type) is also available. Lead forming type (FI type) of F type is also available. Taped package is also available for I and FI type of lead forming type.

\*5 Optionally available.

\*6 Taped package for surface mount and lead forming type is also available.

\*7 Wide lead spacing type (F type) is also available.

Creepage distance PC123 : 6.4 mm or more

PC123F : 8 mm or more

\*8 BSI, SEMKO, DEMKO, FIMKO, CSA

## PHOTOCOUPPLERS (2)

△: Under application    ○: Approved

(Ta=25°C)

Type	Model No.	Internal connection diagram	Features	Approved by safety standards		Package	Absolute maximum ratings			Electro-optical characteristics				
				UL	TÜV (VDE 0884)		Forward current I <sub>F</sub> (mA)	Isolation voltage (AC) V <sub>iso</sub> (Vrms)	Collector-emitter voltage V <sub>CEO</sub> (V)	Current transfer ratio CTR (%) MIN.	I <sub>F</sub> (mA)	t <sub>r</sub> (μs) TYP.	R <sub>L</sub> (Ω)	
Single phototransistor output	PC823		High isolation voltage, AC input response, high resistance to noise (2-ch)	○	○*4	8-pin DIP	±50	5 000	35	20	±1	4	100	
	PC824		High isolation voltage, AC input response (2-ch)	○	○*4		50							
	PC826		High isolation voltage, high collector-emitter voltage (2-ch)	○	○*4		50	5 000	70	50	5	4	100	
	PC8D66*4		High isolation voltage, low current drive type, high collector-emitter voltage (2-ch)	○	—		50	5 000	80	100	1	8	100	
	PC827*1		High isolation voltage (2-ch)	○	○*5		50	5 000	35	50	5	4	100	
	PC829		High isolation voltage, symmetrical terminal configuration	○	○*5		50	5 000	35	50	5	4	100	
	PC837*1		High isolation voltage (3-ch)	○	○*5		12-pin DIP	50	5 000	35	50	5	4	100
	PC843		High isolation voltage, AC input response, high resistance to noise (4-ch)	○	○*4			±50	5 000	35	20	±1	4	100
	PC844		High isolation voltage, AC input response (4-ch)	○	○			50						
	PC846		High isolation voltage, high collector-emitter voltage (4-ch)	○	○*4			50	5 000	70	50	5	4	100
	PC8Q66*4		High isolation voltage, low current drive type, high collector-emitter voltage (4-ch)	○	—			50	5 000	80	100	1	8	100
	PC847*1		High isolation voltage (4-ch)	○	○*5			50	5 000	35	50	5	4	100
	PC849		High isolation voltage, symmetrical terminal configuration	○	○*5			50	5 000	35	50	5	4	100
	PC848		High isolation voltage, symmetrical terminal configuration	○	○*5			16-pin DIP	50	5 000	70	50	5	4
PC847*1		High isolation voltage (4-ch)	○	○*5	50	5 000	35		50	5	4	100		

### Notice

In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.

# PHOTOCOUPLER



△: Under application    ○: Approved    (Ta=25°C)

Type	Model No.	Internal connection diagram	Features	Approved by safety standards		Package	Absolute maximum ratings			Electro-optical characteristics			
				UL	TÜV (VDE 0884)		Forward current I <sub>F</sub> (mA)	Isolation voltage (AC) V <sub>iso</sub> (V <sub>rms</sub> )	Collector-emitter voltage V <sub>CE0</sub> (V)	Current transfer ratio CTR (%) MIN.	I <sub>F</sub> (mA)	Response time t <sub>r</sub> (μs) TYP.	R <sub>L</sub> (Ω)
Darlington phototransistor output	PC715V*2,6		High isolation voltage, high sensitivity	○	○*5	6-pin DIP	50	5 000	35	600	1	60	100
	PC716V*2,6		High isolation voltage, high sensitivity	○	○*5		50	5 000	35	1 000	1	130	100
	PC725V*2,6		High isolation voltage, high sensitivity, high collector-emitter voltage, high power	○	○*5		50	5 000	300	1 000	1	100	100
	PC815*2,6		High isolation voltage, high sensitivity	○	○*5	4-pin DIP	50	5 000	35	600	1	60	100
	PC865		High isolation voltage, high sensitivity, low dark current, high collector-emitter voltage	○	—		50	5 000	70	1 000	1	100	100
	PC852*2,6		High isolation voltage, high collector-emitter voltage	○	—		50	5 000	300	1 000	1	100	100
	PC853*2,6		High isolation voltage, high collector-emitter voltage	○	—		50	5 000	300	1 000	1	100	100
	PC853H		High isolation voltage, high collector-emitter voltage	○	—	8-pin DIP	50	5 000	350	1 000	1	100	100
	PC825*3		High isolation voltage, high sensitivity (2-ch)	○	○*5		50	5 000	35	600	1	60	100
	PC875		High isolation voltage, high sensitivity, low dark current, high collector-emitter voltage (2-ch)	○	—		50	5 000	70	1 000	1	100	100
	PC8D52		High isolation voltage, high collector-emitter voltage (2-ch)	○	—	12-pin DIP	50	5 000	300	1 000	1	100	100
	PC835*3		High isolation voltage, high sensitivity (3-ch)	○	○*5		50	5 000	35	600	1	60	100
	PC845*3		High isolation voltage, high sensitivity (4-ch)	○	○*5		16-pin DIP	50	5 000	35	600	1	60
	PC895		High isolation voltage, high sensitivity, low dark current, high collector-emitter voltage (4-ch)	○	—	50		5 000	70	1 000	1	100	100
	PC8Q52		High isolation voltage, high collector-emitter voltage (4-ch)	○	—	50		5 000	300	1 000	1	100	100

\*1 Respectively approved by UL, TÜV as multi-channel type of PC817.  
 \*2 Lead forming type (I type) is also available. Lead forming type of PC725V is PC725W.  
 \*3 Approved by UL, TÜV as multi-channel type of PC815. \*4 In conformance with VDE 0884 (Optionally available).  
 \*5 Optionally available. \*6 Taped package for surface mount and lead forming type is also available.

## PHOTOCOUPLERS (3)

△: Under application    ○: Approved    (Ta=25°C)

Type	Model No.	Internal connection diagram	Features	Approved by safety standards		Package	Absolute maximum ratings			Electro-optical characteristics								
				UL	TÜV		Forward current I <sub>F</sub> (mA)	Isolation voltage (AC) V <sub>iso</sub> (V <sub>rms</sub> )	Off resistance R <sub>OFF</sub> (Ω) MIN.	V <sub>46</sub> (V)	I <sub>F</sub> (mA)	On resistance R <sub>ON</sub> (Ω) MAX.	I <sub>46</sub> (μA)	I <sub>F</sub> (mA)	Turn-on/off time ton, toff (μs) MAX.			
Bi-directional output	PC419		Bi-directional high breakdown voltage type (V <sub>BR</sub> : 120V)	○	—	Mini-flat 4-pin	50	3 750	10 <sup>10</sup>	100*1	0	200	100*1	16	50	16	5*1	50
	PC729		Bi-directional high breakdown voltage type (V <sub>BR</sub> : 300V)	○	—	6-pin DIP	30	5 000	Response time		Current transfer ratio							
									t <sub>r</sub> (μs) TYP.	R <sub>L</sub> (Ω)	CTR (%) MIN.		I <sub>F</sub> (mA)					
									50	100	1 000		1					

\*1 Between 4/6-pin

### Notice

In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.

<Opaque mini-flat package type>

△: Under application    ○: Approved

(Ta=25°C)

Type	Model No.	Internal connection diagram	Features	Approved by safety standards	Package	Absolute maximum ratings			Electro-optical characteristics						
						Forward current I <sub>F</sub> (mA)	Isolation voltage (AC) V <sub>iso</sub> (Vrms)	Collector-emitter voltage V <sub>CEO</sub> (V)	Current transfer ratio			Response time			
									CTR (%) MIN.	I <sub>F</sub> (mA)	V <sub>CE</sub> (V)	t <sub>r</sub> (μs) TYP.	I <sub>c</sub> (mA)	R <sub>L</sub> (Ω)	V <sub>CE</sub> (V)
Single phototransistor output	PC353T		With base terminal	○	Mini-flat 5-pin	50	3 750	80	50	5	5	4	2	100	2
	PC354NT		AC input response	○*	Mini-flat 4-pin	±50	3 750	35	20	±1	5	4	2	100	2
	PC359		AC input response, high resistance to noise	—		±50	3 750	35	20	±1	5	4	2	100	2
	PC3H3* <sup>1</sup>		Half-pitch, high resistance to noise	○		±50	2 500	70	20	±1	5	4	2	100	2
	PC3H4* <sup>1</sup>		Half-pitch	○		±50	2 500	70	20	±1	5	4	2	100	2
	PC352		General purpose, high resistance to noise	—		50	3 750	35	50	5	5	4	2	100	2
	PC356NT		High collector-emitter voltage	○*	50	3 750	80	100	1	5	6	2	100	2	
	PC357NT		General purpose	○*	50	3 750	35	50	5	5	4	2	100	2	
	☆PC367		Low input current	—	10	3 750	70	50	0.5	5	4	2	100	2	
	PC3H2* <sup>1</sup>		Half-pitch, high resistance to noise	○	50	2 500	70	20	1	5	4	2	100	2	
	PC3H7* <sup>1</sup>		Half-pitch	○	50	2 500	70	20	1	5	4	2	100	2	
	PC358T		High collector-emitter voltage	○*	50	3 750	120	20	5	5	4	2	100	2	
	PC450T11		Built-in zener diode for absorption of surge voltage	○	50	3 750	(BV <sub>CEO</sub> =40 to 60V)	1 500	5	2	50	2	100	2	
	PC451	(Same as PC817)	High collector-emitter voltage	○	50	3 750	350	40	5	5	4	2	100	2	
	Darlington phototransistor output	PC3Q63* <sup>1</sup>		Half-pitch (lead space) (4-ch), high resistance to noise	○	Mini-flat 16-pin	±50	2 500	70	20	±1	5	4	2	100
PC3Q64Q* <sup>1</sup>		Half-pitch (lead space) (4-ch)		○*	±50		2 500	35	20	±1	5	4	2	100	2
PC3Q66Q* <sup>1</sup>		Half-pitch (lead space), high collector-emitter voltage (4-ch)		○*	50		2 500	80	100	1	5	6	2	100	2
PC3Q62* <sup>1</sup>		Half-pitch (lead space) (4-ch), high resistance to noise		○	50		2 500	70	20	1	5	4	2	100	2
PC3Q67Q* <sup>1</sup>		Half-pitch (lead space) (4-ch)		○*	50		2 500	35	50	5	5	4	2	100	2
Darlington phototransistor output	PC355NT	(Same as PC815)	High sensitivity type	○*	Mini-flat 4-pin	50	3 750	35	600	1	2	60	2	100	2
	☆PC3H5* <sup>1</sup>	(Same as PC815)	Half pitch, high sensitivity	—		50	2 500	35	600	1	2	60	2	100	2
	PC452	(Same as PC852)	High isolation voltage, high collector-emitter voltage	○*		50	3 750	300	1 000	1	2	100	20	100	2
	☆PC3Q65* <sup>1</sup>	(Same as PC845)	Half-pitch (lead space) (4-ch), high sensitivity	—		Mini-flat 16-pin	50	2 500	35	600	1	2	60	2	100

\*1 High-temperature tested models    \* Optionally available for VDE approved model (Expertise approval).

**Notice**

In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.