PRODUCT SPECIFICATION

DATE: 03/26/2012

cosmo ELECTRONICS CORPORATION	Photocoupler : KPC457	NO.61P04025	REV
		SHEET 1 OF 4	5

High Speed 1Mb/s,High CMR Mini-flat Package Photocoupler

●Features

1. Pb free and RoHS compliant.
2. High speed response(t_{PLH}:typ.0.2us, t_{PHL}:typ.0.4us).
3. High noise immunity due to high instantaneous common mode rejection voltage(CM_H:Min. 15KV/us, CM_L:Min. -15KV/us).
4. High isolation voltage between input and output (Viso:3750Vrms).
5. Mini-flat 5 pin package.
6. Agency Approvals
   - UL approved：UL1577　No.E169586
   - CUL approved：UL1577　No.E169586
   - VDE approved：EN 60747　No.40020973

●Applications

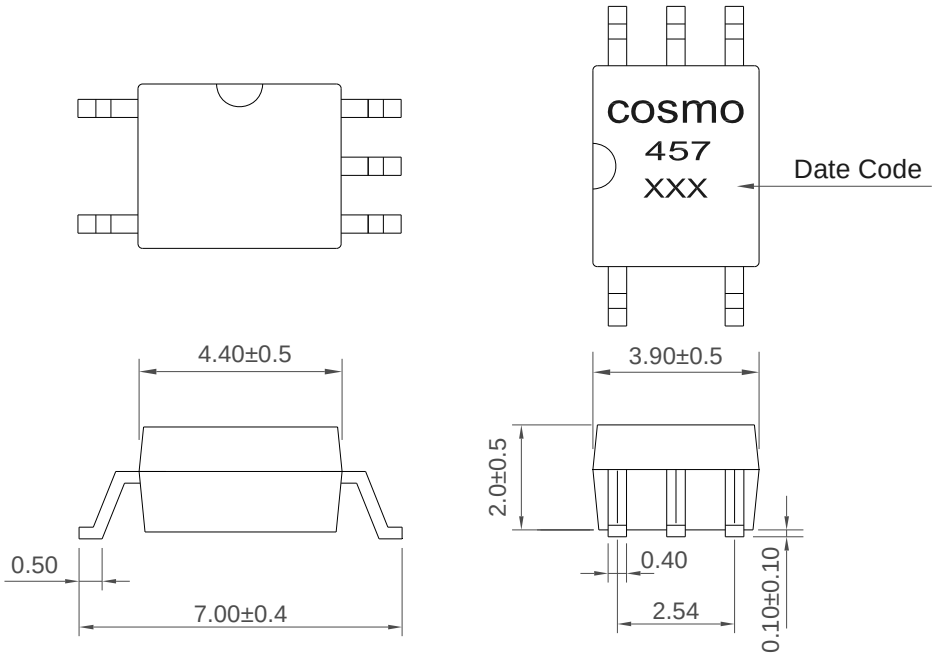
1. Computers, measuring instruments,control equipment.
2. High speed line receivers, high speed logic.
3. Telephone sets.
4. Signal transmission between circuits of different potentials and impedances

PRODUCT SPECIFICATION

DATE: 03/26/2012

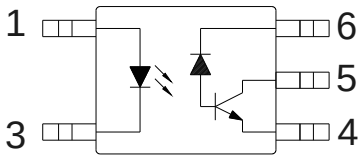
cosmo ELECTRONICS CORPORATION	Photocoupler : KPC457	NO.61P04025	REV
		SHEET 2 OF 4	5

1. OUTSIDE DIMENSION : UNIT (mm)



TOLERANCE : ±0.2mm

2. SCHEMATIC : Top View



1.Anode
3.Cathode
4.GND(Emitter)
5.Vo (Open collector)
6.Vcc

PRODUCT SPECIFICATION

DATE: 03/26/2012

cosmo ELECTRONICS CORPORATION	Photocoupler : KPC457	NO.61P04025	REV
		SHEET 3 OF 4	5

●Absolute Maximum Ratings

(Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward current (*1)	IF	25	mA
	Peak forward current (*2)	IFM	200	mA
	Reverse voltage	VR	5	V
	Power dissipation (*2)	PD	45	mW
Output	Supply voltage	VCC	-0.5 to +30	V
	Output voltage	VO	-0.5 to +20	V
	Output current	IO	8	mA
	Power dissipation (*3)	PO	100	mW
Total power dissipation (*3)		Ptot	100	mW
Isolation voltage 1 minute (*4)		Viso	3750	Vrms
Operating temperature		Topr	-55 to +85	℃
Storage temperature		Tstg	-55 to +125	℃
Soldering temperature 10 second		Tsol	260	℃

*1 When ambient temperature goes above 70°C, the power dissipation goes down at 0.8mA/°C.
*2 When ambient temperature goes above 70°C, the power dissipation goes down at 1.5mW/°C.
*3 When ambient temperature goes above 70°C, the power dissipation goes down at 1.8mW/°C.
*4 40 to 80%RH AC for 1 minute,f=60HZ.

●Electro-optical Characteristics (*5)

(Ta=25℃)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	VF	IF=16mA	-	1.7	1.95	V
	Reverse current	IR	VR=5V	-	-	10	uA
	Terminal capacitance	Ct	V=0, f=1MHz	-	60	250	pF
Output	High level output current (1)	IOH (1)	IF=0,VCC=5.5V,VO=5.5V	-	3	500	nA
	High level output current (2)	IOH (2)	IF=0,VCC=15V,VO=15V	-	-	1.0	uA
	High level output current (3) (*6)	IOH (3)		-	-	50	uA
	High level supply current (1)	ICCH (1)	IF=0,VCC=15V,VO=Open	-	0.02	1.0	uA
	High level supply current (2) (*6)	ICCH (2)		-	-	2.0	uA
	Low level supply current	ICCL	IF=16mA,VCC=15V,VO=Open	-	120	-	uA
	Low level supply voltage	VL	IF=16mA,VCC=4.5V,IO=2.4mA	-	-	0.4	V
Transfer charac-teristics	Current transfer ratio (1)	CTR(1)	IF=16mA,VCC=4.5V,VO=0.4V, RL=1.9K ohm	19	-	50	%
	Current transfer ratio (2) (*6)	CTR(2)		15	-	-	%
	Isolation resistance	RISO	DC=500V,40 to 60%RH	$5x10^{10}$	$1x10^{11}$	-	ohm
	Floating capacitance	Cf	V=0,f=1MHZ	-	0.6	1.0	pF
	"High-->Low" propagation delay time	tPHL	IF=16mA,VCC=5V, RL=1.9K ohm	-	0.2	0.8	us
	"High-->Low" propagation delay time	tPLH		-	0.4	0.8	us
	Instantaneous common mode rejection voltage (High level output)	CMH	IF=0,VCC=5V, VCM=1.0KV(p-p), RL=1.9K ohm	15	30	-	KV/us
	Instantaneous common mode rejection voltage (High level output)	CML	IF=16mA,VCC=5V, VCM=1.0KV(p-p), RL=1.9K ohm	-15	-30	-	KV/us

*5 It shall connect a by-pass capacitor of 0.01uF or more between Vcc (pin 6) and GND(pin 4) near the device ,when it measures transfer characteristics and the output side characteristics.
*6 Ta=0 to 70°C.

PRODUCT SPECIFICATION

DATE: 03/26/2012

cosmo ELECTRONICS CORPORATION	Photocoupler : KPC457	NO.61P04025	REV
		SHEET 4 OF 4	5

● Notice

The information contained in this document is intended to be a general product description and is subject to change without notice. Please contact cosmo in order to obtain the latest device data sheets before using any cosmo device. cosmo does not assume any responsibility for use of any circuitry described. No circuit patent licenses are implied. This publication is the property of cosmo. No part of this publication may be reproduced or copied in any form or by any means, or transferred to any third party without the prior written consent of cosmo Electronics Corporation.

The devices listed in this document are designed for general applications only in electronic equipment. No devices shall be deployed which require higher level of reliability such as：

--- Medical and other life support equipments.

--- Space application.

--- Telecommunication equipment (trunk lines).

--- Nuclear power control equipment.

Unless it received prior written approval from cosmo.

cosmo takes no responsibility for damages arise form the improper usage of our device. Please contact cosmo for further information regarding the above notices.