

PRODUCT SPECIFICATION

DATE:04/24/2012

cosmo ELECTRONICS CORPORATION	Photocoupler : KPS2806	NO.61P35003	REV.
		SHEET 1 OF 6	3

High Isolation Voltage AC Input Response Type SSOP Photocoupler

●Features

1. Halogen Free.
2. Pb free and RoHS compliant.
3. High isolation voltage(BV=3750Vrms).
4. Small and thin package(4pin SOP,Pin pitch 1.27mm).
5. AC input response
6. High current transfer ratio (CTR=2000%TYP.@ IF=1 mA, VCE=2V)
7. Agency Approvals
 - UL approved : No.E169586
 - CUL approved : No.E169586
 - VDE approved : No.40010469
 - FIMKO approved : EN 60065 , EN 60950-1 No.FI23460

●Applications

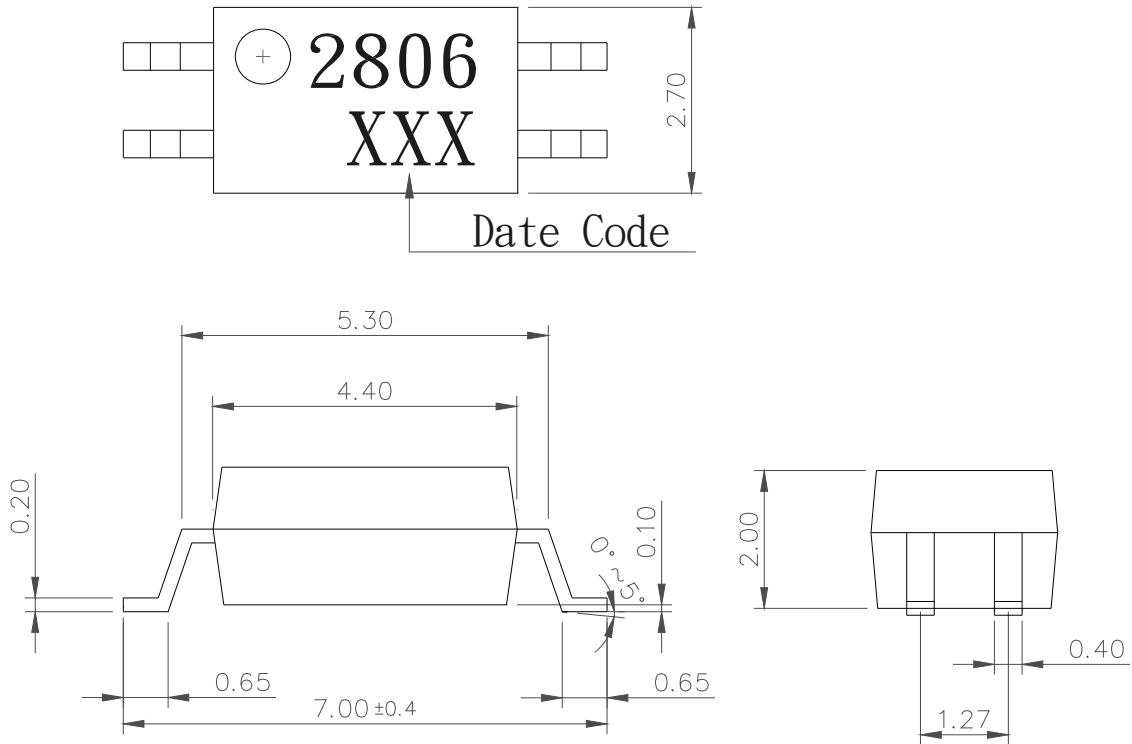
1. Programmable logic controllers.
2. Measuring instruments.
3. Hybrid IC.

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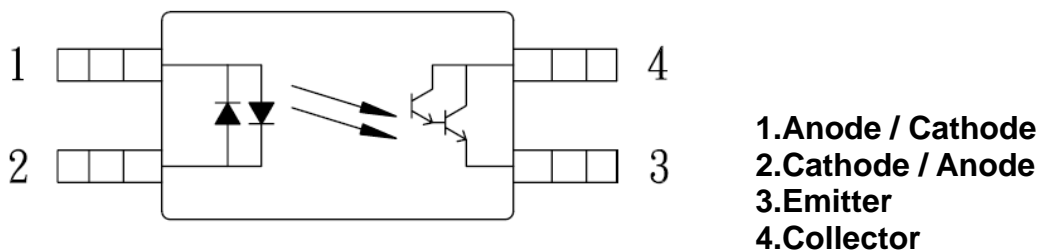
cosmo ELECTRONICS CORPORATION	Photocoupler : KPS2806	NO.61P35003	REV. 3
		SHEET 2 OF 6	

1. OUTSIDE DIMENSION : UNIT (mm)



TOLERANCE : ±0.2mm

2. SCHEMATIC : TOP VIEW



PRODUCT SPECIFICATION

DATE:04/24/2012

cosmo ELECTRONICS CORPORATION	Photocoupler :	NO.61P35003	REV. 3
	KPS2806	SHEET 3 OF 6	

●Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	± 50	mA
	Peak forward current(*1)	I_{FP}	± 1	A
	Power dissipation	P_D	60	mW
	Power dissipation derating	$P_D/^\circ C$	0.6	mW/ $^\circ C$
Output	Collector-emitter voltage	V_{CEO}	40	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	90	mA
	Collector power dissipation	P_C	120	mW
	Collector power dissipation derating	$P_C/^\circ C$	1.2	mW/ $^\circ C$
Isolation voltage 1 minute(*2)		V_{iso}	3750	V_{rms}
Operating temperature		T_{opr}	-30 to +115	$^\circ C$
Storage temperature		T_{stg}	-55 to +150	$^\circ C$

*1 PW=100 μ s,Duty Cycle=1%.

*2 AC voltage for 1minute at T =25 $^\circ C$,RH=60% between input and output.

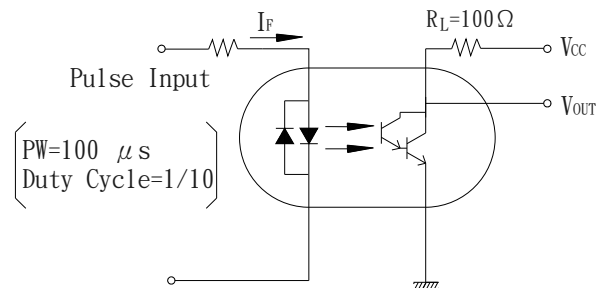
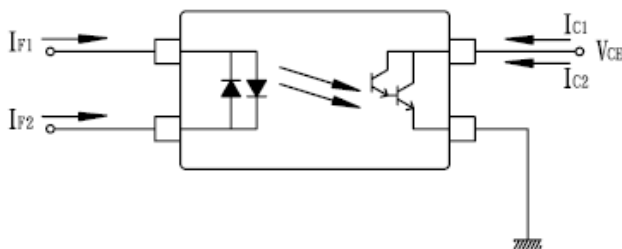
●Electro-optical Characteristics

Ta=25 $^\circ C$

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F=\pm 5mA$	-	1.1	1.4	V
	Reverse current	I_R	$V_R=5V$	-	-	5	μA
	Terminal capacitance	C_t	$V=0, f=1MHz$	-	60	-	pF
Output	Collector dark current	I_{CEO}	$V_{CE}=40V, I_F=0mA$	-	-	400	nA
Transfer characteristics	Current transfer ratio(I_C/I_F)	CTR	$I_F=\pm 1mA, V_{CE}=2V$	200	2000	-	%
	CTR ratio (*1)	CTR1/CTR2	$I_F=1mA, V_{CE}=2V$	0.3	1.0	3.0	
	Collector-emitter saturation	$V_{CE(sat)}$	$I_F=\pm 1mA, I_C=2mA$	-	-	1.0	V
	Isolation resistance	R_{iso}	DC500V	5×10^{10}	10^{11}	-	ohm
	Floating capacitance	C_f	$V=0, f=1MHz$	-	0.4	-	pF
	Response time (Rise)(*2)	t_r	$V_{ce}=5V, I_C=2mA, R_L=100ohm$	-	200	-	μs
Response time (Fall) (*2)	t_f	-		200	-	μs	

*1 $CTR1=I_{C1}/I_{F1}, CTR2=I_{C2}/I_{F2}$

*2 Test circuit for switching time



●Classification table of current transfer ratio is shown below.

CTR RANK	CTR(%)
KPPS28060E	200 TO

PRODUCT SPECIFICATION

DATE:04/24/2012

cosmo ELECTRONICS CORPORATION	Photocoupler :	NO.61P35003	REV. 3
	KPS2806	SHEET 4 OF 6	

Fig.1 Forward Current vs. Ambient Temperature

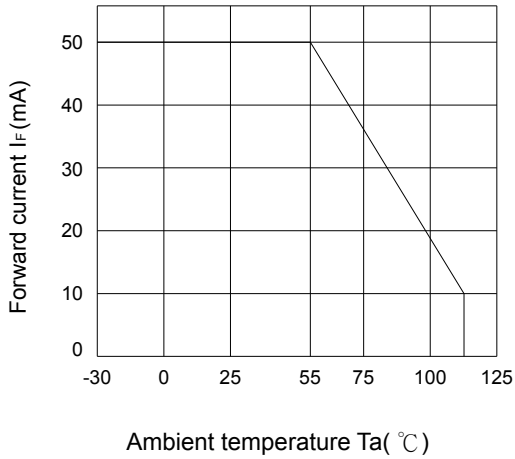


Fig.2 Collector Power Dissipation vs. Ambient Temperature

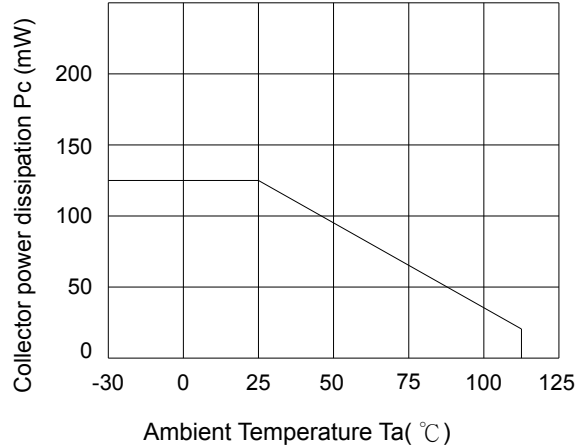


Fig.3 Peak Forward Current vs. Duty Ratio

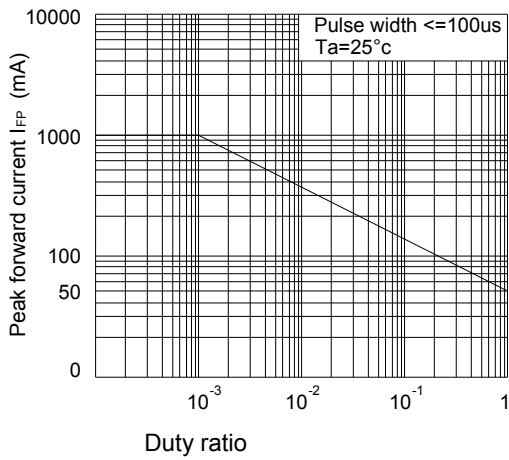


Fig.4 Forward Current vs. Forward Voltage

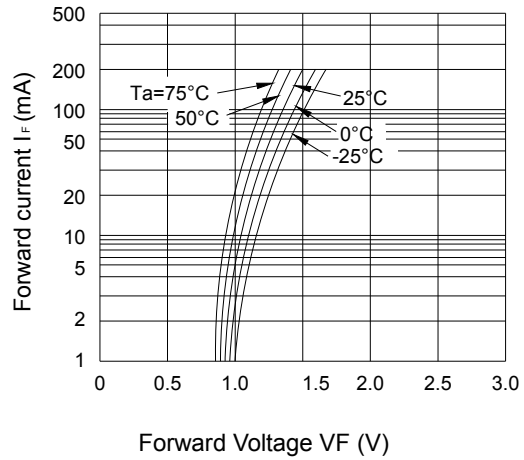


Fig.5 Current Transfer Ratio vs. Forward Current

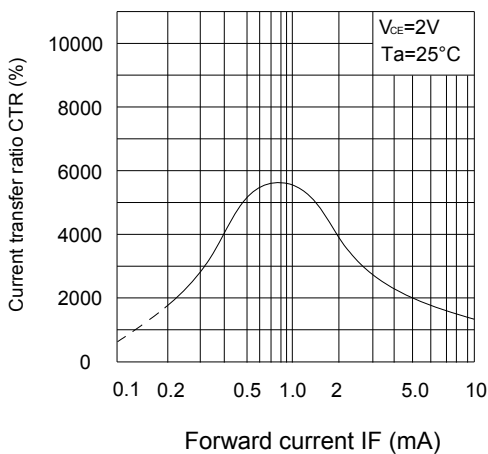
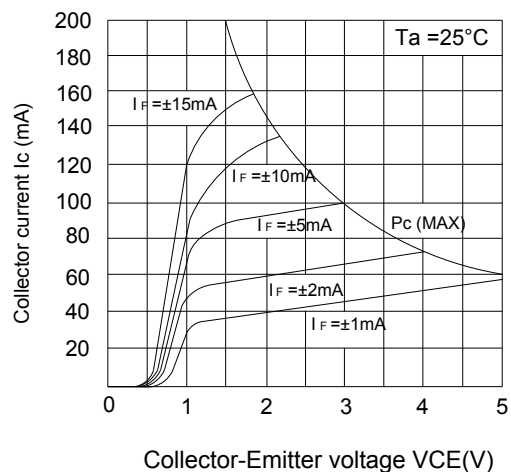


Fig.6 Collector Current vs. Collector-Emitter Voltage



PRODUCT SPECIFICATION

DATE:04/24/2012

cosmo ELECTRONICS CORPORATION	Photocoupler : KPS2806	NO.61P35003	REV.
		SHEET 6 OF 6	3

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