PRODUCT SPECIFICATION

DATE: 05/15/2007

COSMO ELECTRONICS CORPORATION	Photocoupler : KPS2801	NO. 61P05005	REV.
		SHEET 1 OF 6	2

High Isolation Voltage
DC Input Response Type
SSOP Photocoupler

● Features

1. High isolation voltage (BV = 3750 Vrms)
2. Small and thin package (4pin SOP , Pin pitch 1.27 mm)
3. High collector to emitter voltage (V_{CEO}=80 V)
4. High-speed switching (tr = 3μs TYP. , tf = 5μs TYP.)

● Applications

1. Programmable logic controllers
2. Measuring instruments
3. Power supply
4. Hybrid IC

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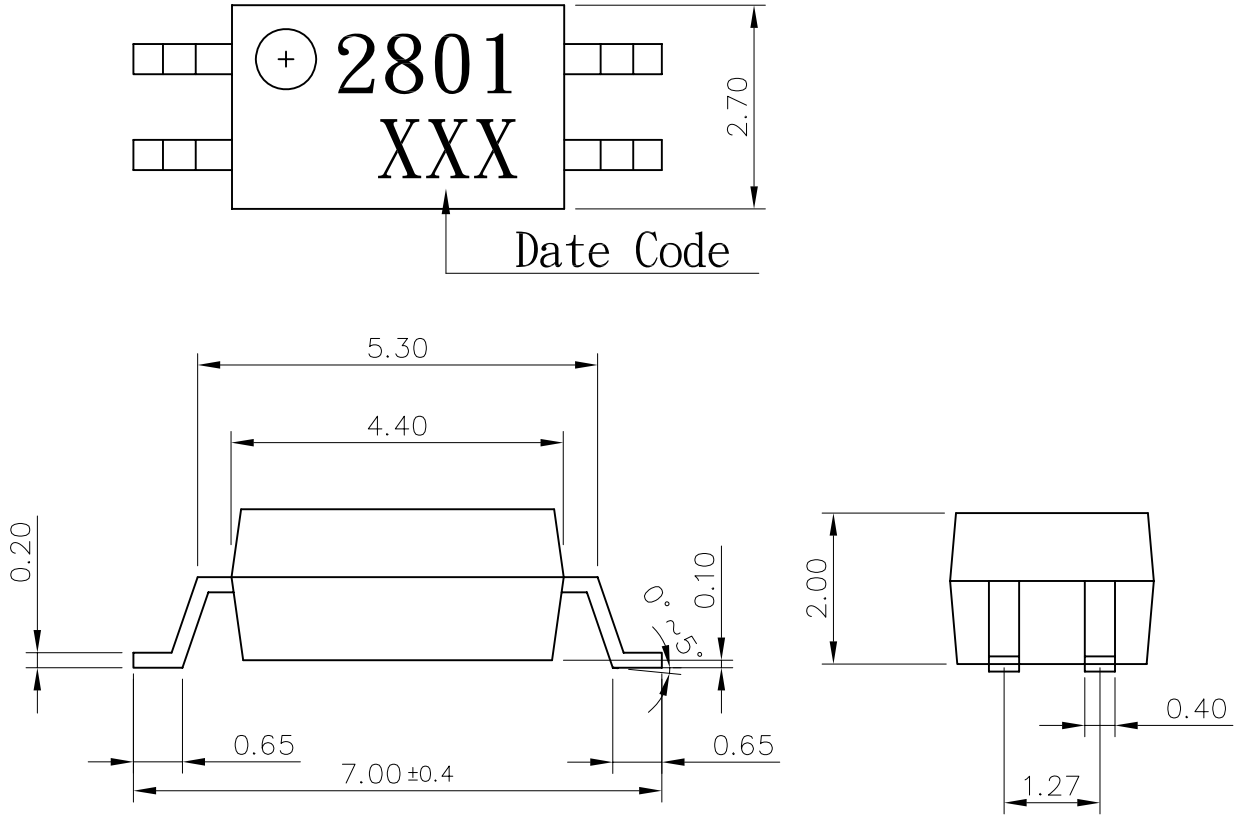
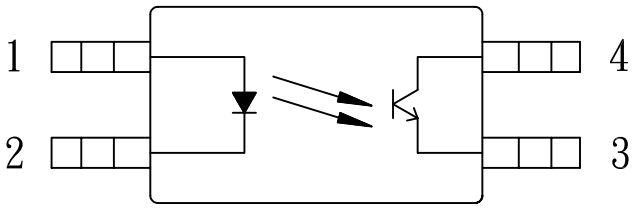
1. OUTSIDE DIMENSION : UNIT(mm)



TOLERANCE : ±0.2mm

2. SCHEMATIC : TOP VIEW



1. Anode
2. Cathode
3. Emitter
4. Collector

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• Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current (DC)	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation derating	P_D/°C	0.6	mW/°C
	Power dissipation	P_D	60	mW
	Peak forward current (*1)	I_{FP}	1	A
Output	Collector-emitter voltage	V_{CEO}	80	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	Ic	50	mA
	Power dissipation derating	P_C/°C	1.2	mW/°C
	Total power dissipation	P_C	160	mW
Isolation voltage (*2)		Viso	3750	Vrms
Operating temperature		Topr	-55 to +115	°C
Storage temperature		Tstg	-55 to +150	°C

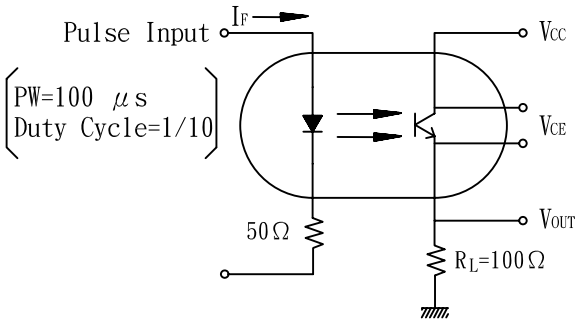
*1 PW=100μs, Duty Cycle=1%

*2 AC voltage for 1minute at T_A=25°C, RH=60% between input and output

• Electro-optical Characteristics (Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	I_F=5mA	-	1.1	1.4	V
	Reverse current	I_R	V_R=5V	-	-	5	μA
	Terminal capacitance	Ct	V=0V, f=1.0MHz	-	30	-	pF
Output	Collector-emitter dark current	I_{CEO}	V_{CE}=80V, I_F=0mA	-	-	100	nA
Transfer characteristics	Current transfer ratio (Ic/I_F)	CTR	I_F=5mA, V_{CE}=5V	80	-	600	%
	Collector saturation voltage	V_{CE}(sat)	I_F=10mA, Ic=2mA	-	0.1	0.3	V
	Isolation resistance	R_{iso}	V_{I-O}=500VDC	$5x10^{10}$	10^{11}	-	ohm
	Floating capacitance	C_f	V=0V, f=1.0MHz	-	0.4	-	pF
	Response time (Rise) *1	tr	V_{CE}=5V, Ic=2mA	-	3	18	μs
	Response time (Fall) *1	tf	R_L=100ohm	-	5	18	

*1 Test circuit for switching time



Classification table of current transfor ratio is shown below.

Model NO.	CTR (%)
KPS2801 A	80 TO 160
KPS2801 B	130 TO 260
KPS2801 C	200 TO 400
KPS2801 D	300 TO 600
KPS2801 E	80 TO 600

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Fig.1 Current Transfer Ratio vs. Forward Current

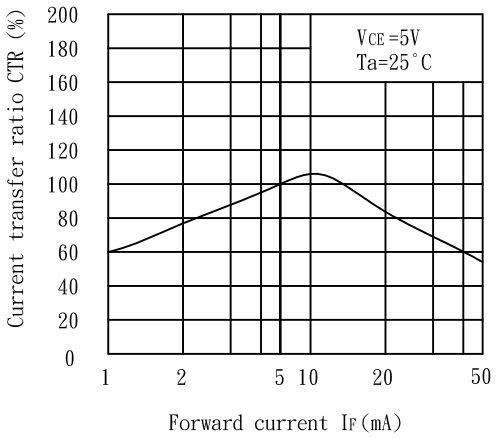

Fig.2 Collector Power Dissipation vs. Ambient Temperature

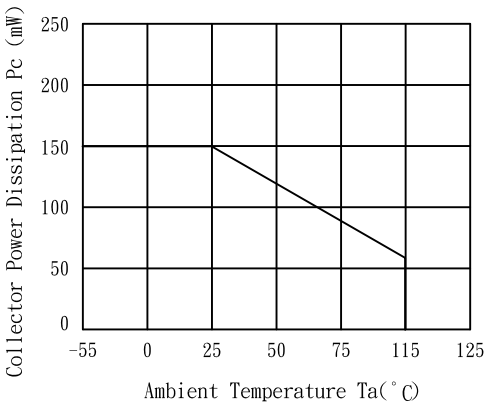

Fig.3 Collector Dark Current vs. Ambient Temperature

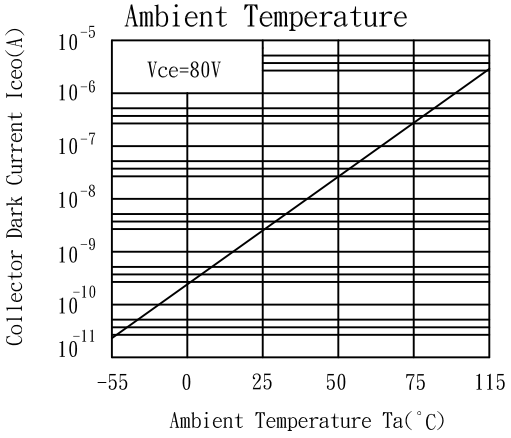

Fig.4 Forward Current vs. Ambient Temperature

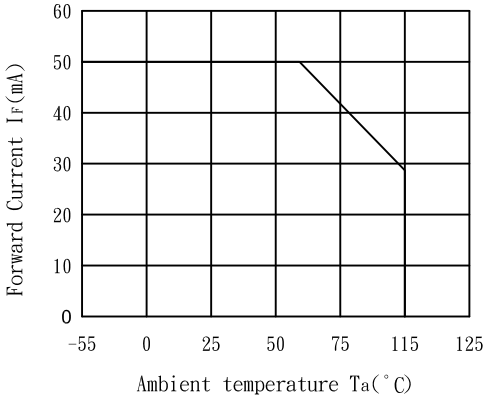

Fig.5 Forward Current vs. Forward Voltage

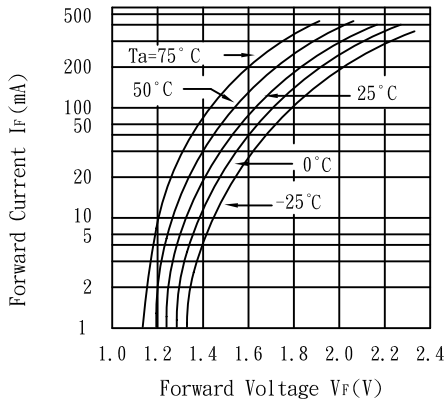

Fig.6 Collector Current vs. Collector-emitter Voltage

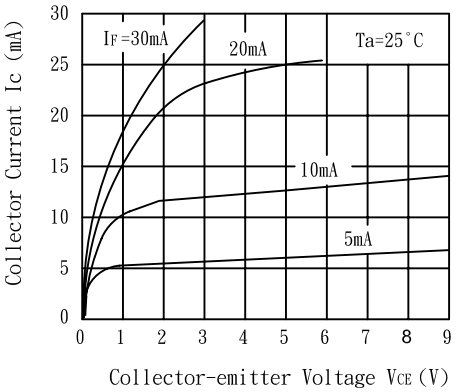

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Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

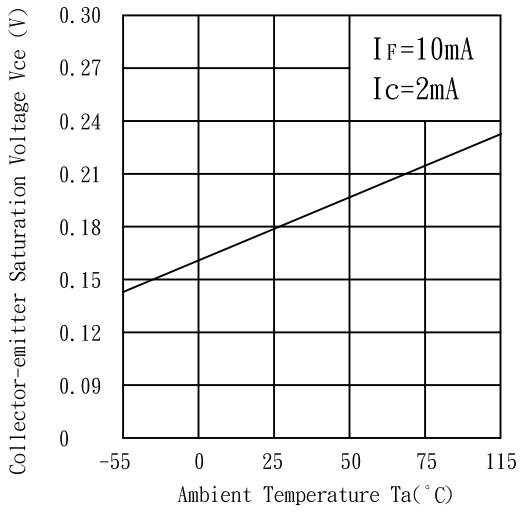


Fig. 8 Collector-emitter Saturation Voltage vs. Forward Current

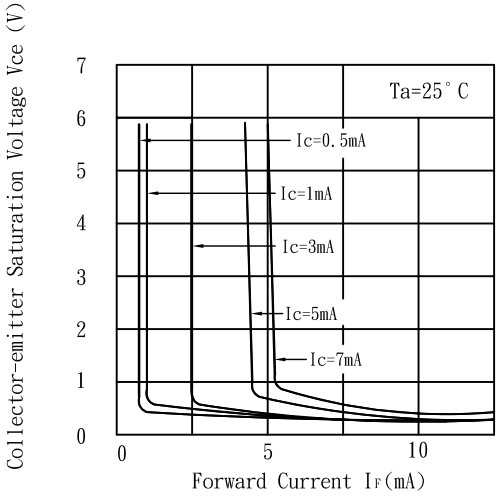


Fig. 9 Response Time vs. Load Resistance

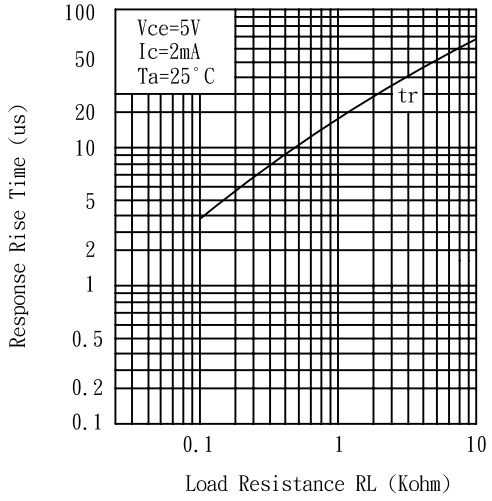


Fig. 10 Response Time vs. Load Resistance

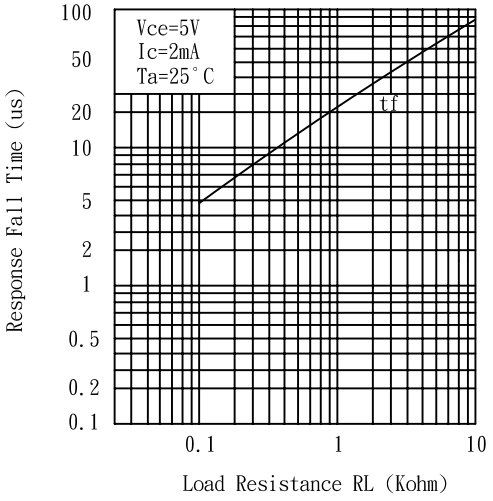
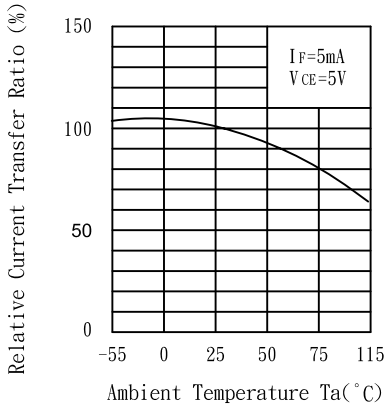


Fig. 11 Relative Current Transfer Ratio vs. Ambient Temperature



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