PRODUCT SPECIFICATION

DATE：01/28/2010

cosmo ELECTRONICS CORPORATION	Photocoupler： KP6010S	NO.61P11006	REV. 1
		SHEET 1 OF 6	

High Reliability Photocoupler

● Features

1. Current transfer ratio
   (CTR：60% at IF=±1mA V_{CE}=5V)
2. High isolation voltage between input and output(Viso：5000Vrms)
3. Compact surface mount type package.
4. AC input.

● Application：

1. Programmable Controller Applications for Low Input Photocouplers and High Vceo Photocouplers.
2. Telephone sets, telephone exchangers.
3. System appliances. • Limit Switches • Sensors • Thermostats • Transdusers etc.
4. Signal transmission between circuits of different potentials and impedances.

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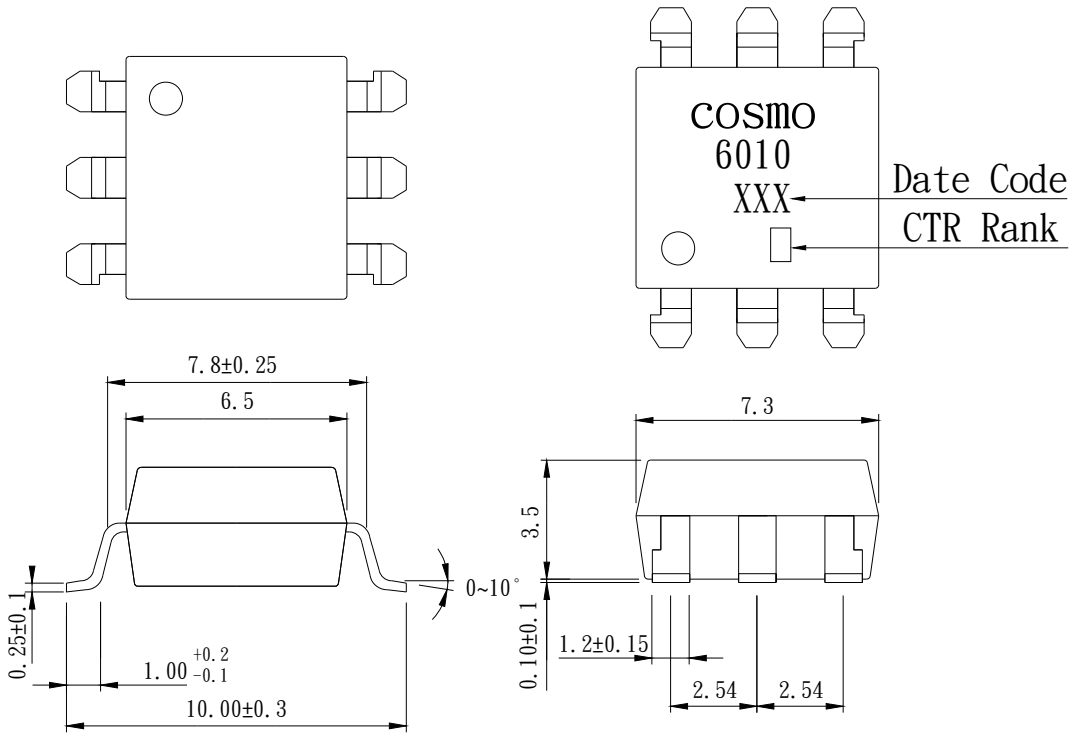
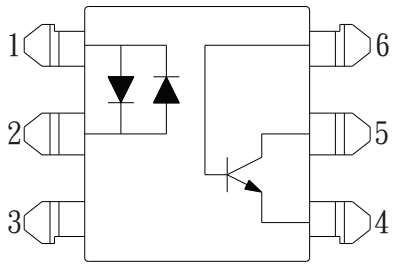
● Outside Dimension：Unit (mm)



TOLERANCE：±0.2mm

● Schematic：Top View



1. Anode, cathode
2. Anode, cathode
3. NC
4. Emitter
5. Collector
6. Base

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● Absolute Maximum Ratings

(Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	±50	mA
	Peak forward current	I_{FM}	±1	A
	Power dissipation	P_D	70	mW
Output	Collector-emitter voltage	V_{CEO}	60	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector-base voltage	V_{CBO}	60	V
	Emitter-base voltage	V_{EBO}	6	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	150	mW
Total power dissipation		P_{tot}	200	mW
Isolation voltage 1 minute		V_{iso}	5000	Vrms
Operating temperature		T_{opr}	-55 to +100	℃
Storage temperature		T_{stg}	-55 to +125	℃
Soldering temperature 10 second		T_{sol}	260	℃

● Electro-optical Characteristics

(Ta=25℃)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	I_F=±20mA	-	1.2	1.4	V
	Peak forward voltage	V_{FM}	I_{FM}=±0.5A	-	-	3.5	V
	Terminal capacitance	C_t	V=0, f=1KHz	-	30	-	pF
Output	Collector dark current	I_{CEO}	V_{CE}=20V	-	-	0.1	μA
Transfer characteristics	Current transfer ratio	CTR	I_F=±1mA, V_{CE}=5V	60	-	600	%
	Collector-emitter saturation	$V_{CE(sat)}$	I_F=±20mA, I_C=1mA	-	0.1	0.3	V
	Isolation resistance	R_{iso}	DC500V	$5x10^{10}$	10^{11}	-	Ω
	Floating capacitance	C_f	V=0, f=1MHz	-	0.6	1.0	pF
	Cut-off frequency	f_C	V_{CC}=5V, I_C=2mA, R_L=100Ω	-	80	-	KHz
	Response time (Rise)	t_r	V_{CE}=2V, I_C=2mA, R_L=100Ω	-	5	20	μs
	Response time (Fall)	t_f		-	4	20	μs

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Classification table of current transfer ratio is shown below.

Model No.	CTR (%)
KP60102A	60 ~ 600
KP60102B	60 ~ 300

Fig.1 **Current Transfer Ratio vs. Forward Current**

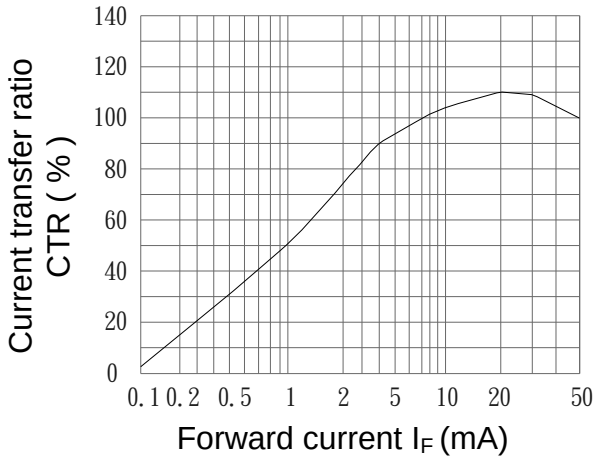

Fig.2 **Collector Power Dissipation vs. Ambient Temperature**

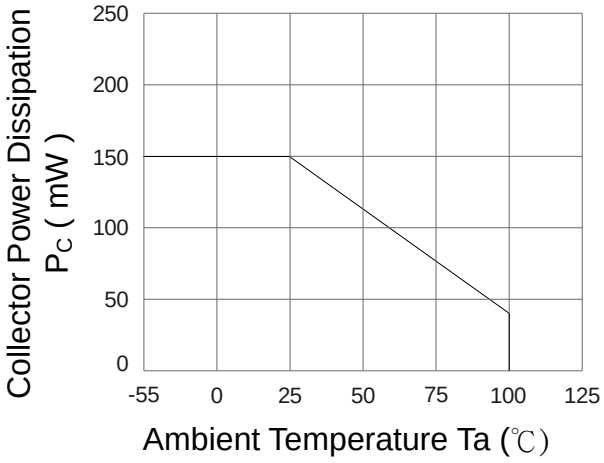

Fig.3 **Collector Dark Current vs. Ambient Temperature**

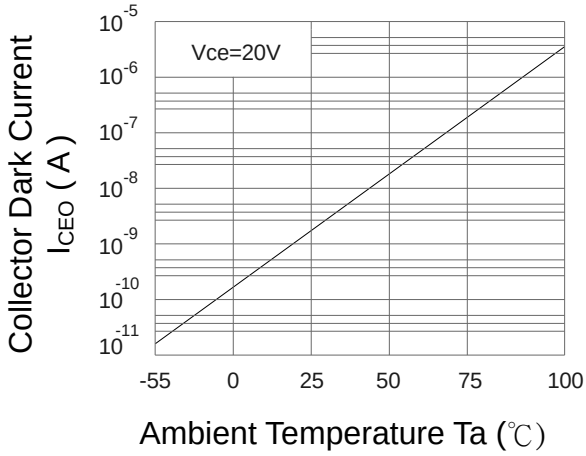

Fig.4 **Forward Current vs. Ambient Temperature**

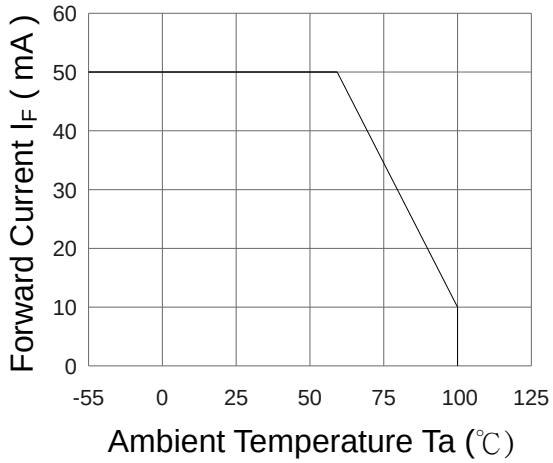

Fig.5 **Forward Current vs. Forward Voltage**

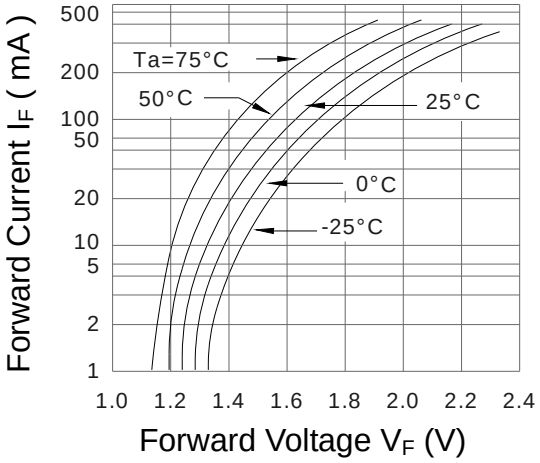

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Fig.6 **Collector Current vs. Collector-Emitter Voltage**

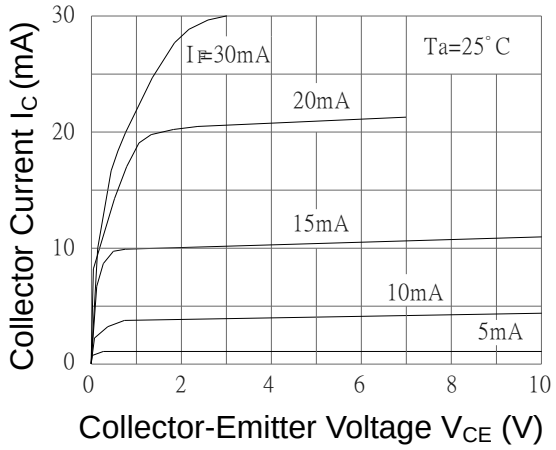


Fig.7 **Relative Current Transfer Ratio vs. Ambient Temperature**

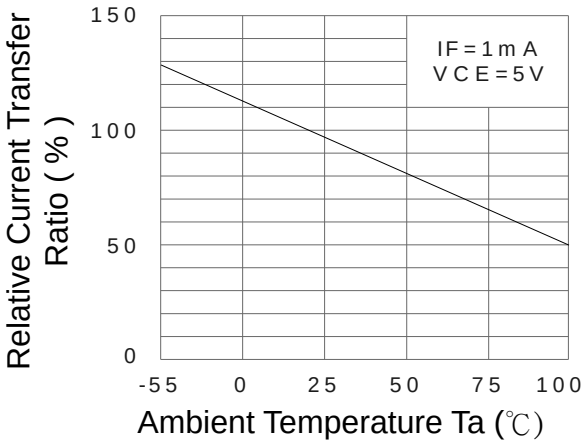


Fig.8 **Collector-Emitter Saturation Voltage vs. Ambient Temperature**

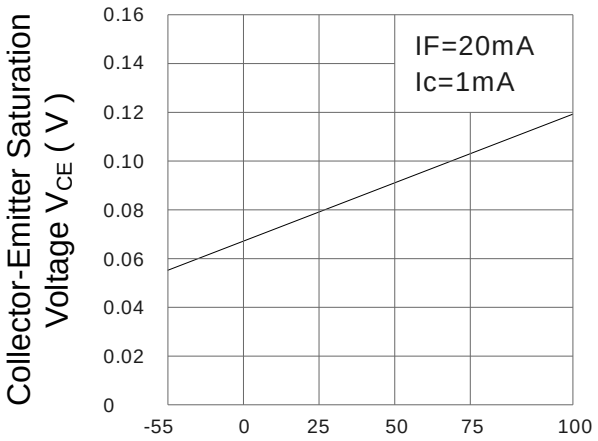


Fig.9 **Collector-Emitter Saturation Voltage vs. Forward Current**

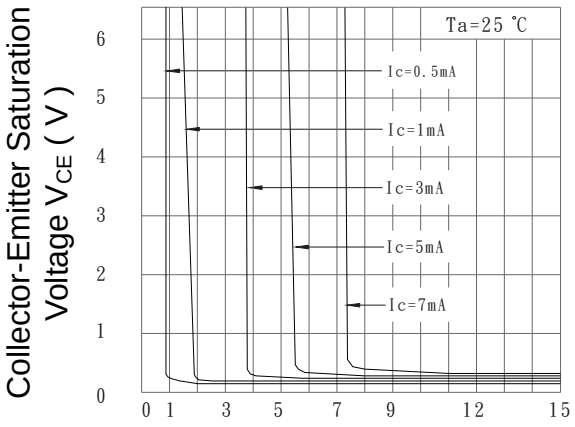


Fig.10 **Response Time vs. Load Resistance**

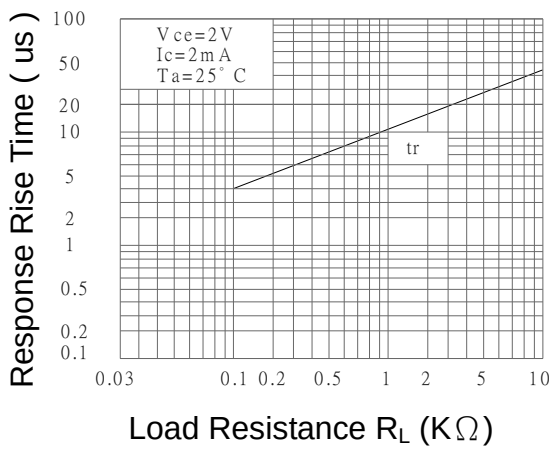
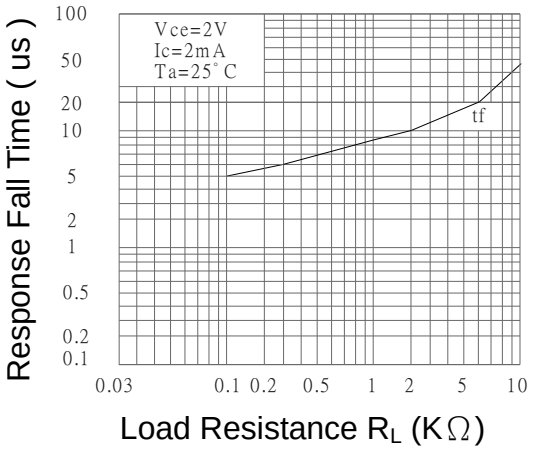


Fig.11 **Response Time vs. Load Resistance**



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