PRODUCT SPECIFICATION

DATE：01/13/2012

cosmo ELECTRONICS CORPORATION	Photocoupler： KP2110H	NO.62P01014	REV. 2
		SHEET 1 OF 6	

High Reliability Photocoupler

● Features

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

● Application：

1. Registers, copies, automatic vending machines.
2. System appliances, measuring instruments.
3. Computer terminals, programmable controllers.
4. Communications, telephone, etc.
5. Electric home appliances, such as oil fan heaters, Microwave Oven, Washer, Refrigerator, Air conditioner, etc.
6. Medical instruments, physical and chemical equipment.
7. Signal transmission between circuits of different potentials and impedances.
8. Facsimile equipment, Audio, Video.
9. Switching power supply, Laser beam printer.

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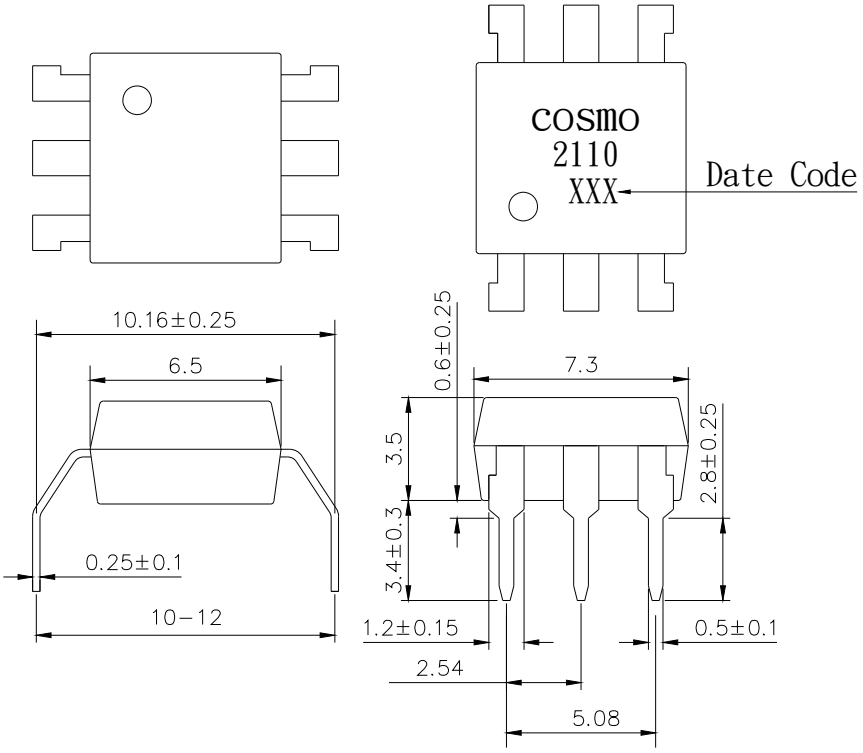
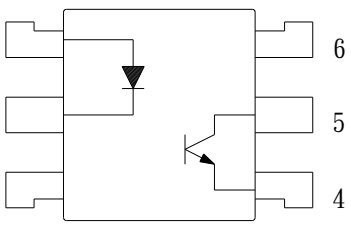
● Outside Dimension：Unit (mm)



TOLERANCE：±0.2mm

● Schematic：Top View



1. Anode
2. Cathode
3. NC
4. Emitter
5. Collector
6. NC

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● Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	V
	Power dissipation	P_D	70	mW
Output	Collector-emitter voltage	V_{CEO}	60	V
	Emitter-collector voltage	V_{ECO}	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

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
	Reverse current	I_R	V_R=4V	-	-	10	μA
	Terminal capacitance	C_t	V=0, f=1KHz	-	30	-	pF
Output	Collector dark current	I_{CEO}	V_{CE}=20V	-	-	0.1	μA
Transfer charac-teristics	Current transfer ratio	CTR	I_F=2mA, 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}=5V, 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 (%)
KP2110HA	60 ~ 160
KP2110HB	130 ~ 260
KP2110HC	200 ~ 400
KP2110HD	300 ~ 600
KP2110HE	60 ~ 600

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

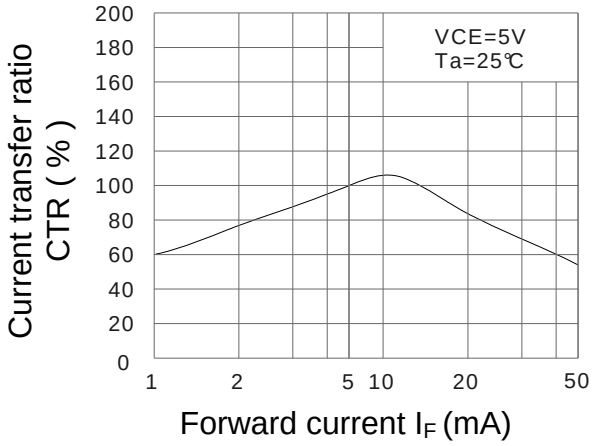

Fig.2 **Collector Power Dissipation vs. Ambient Temperature**

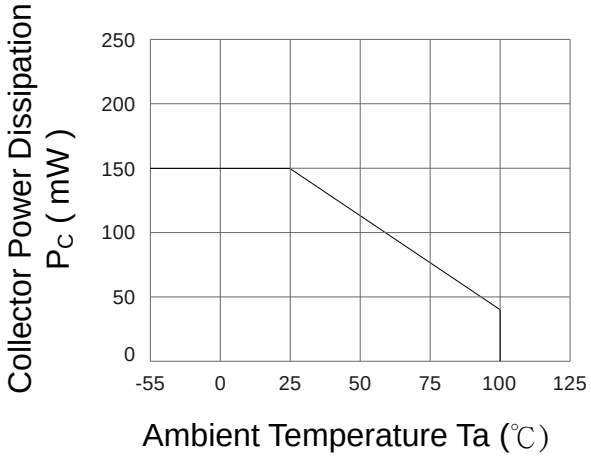

Fig.3 **Collector Dark Current vs. Ambient Temperature**

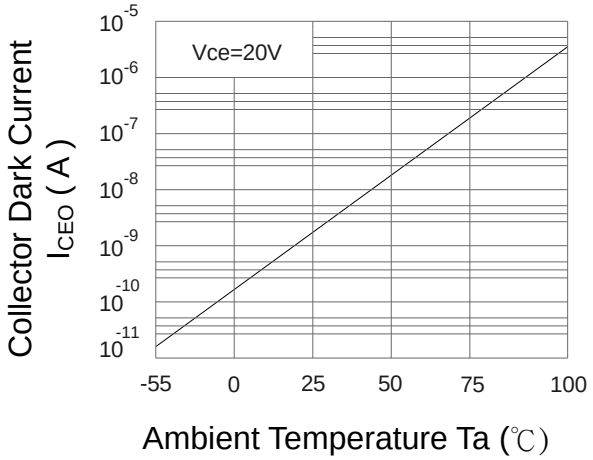

Fig.4 **Forward Current vs. Ambient Temperature**

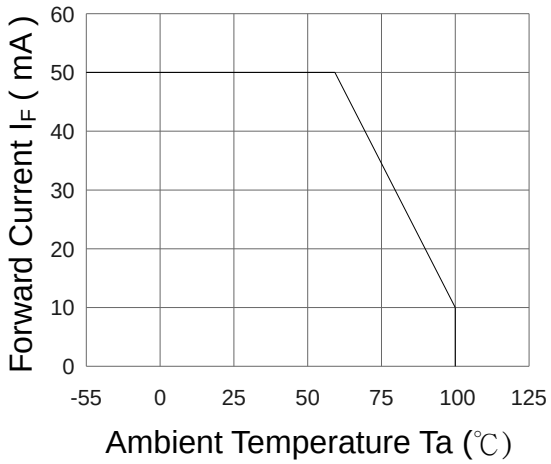

Fig.5 **Forward Current vs. Forward Voltage**

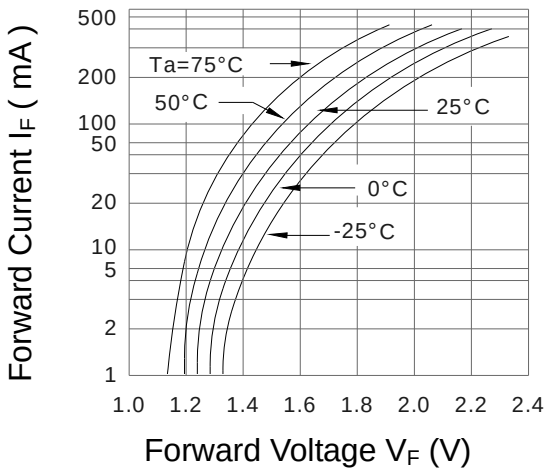

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Fig.6 **Collector Current vs. Collector-Emitter Voltage**

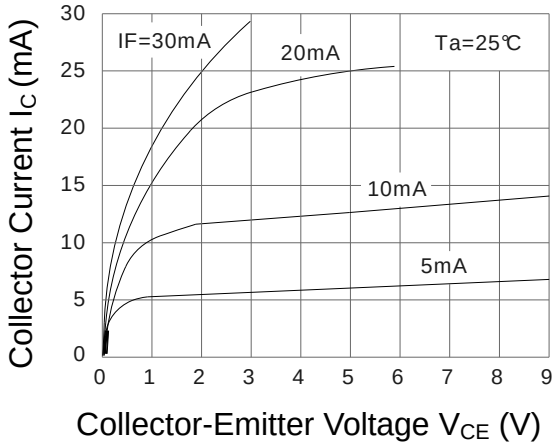


Fig.7 **Relative Current Transfer Ratio vs. Ambient Temperature**

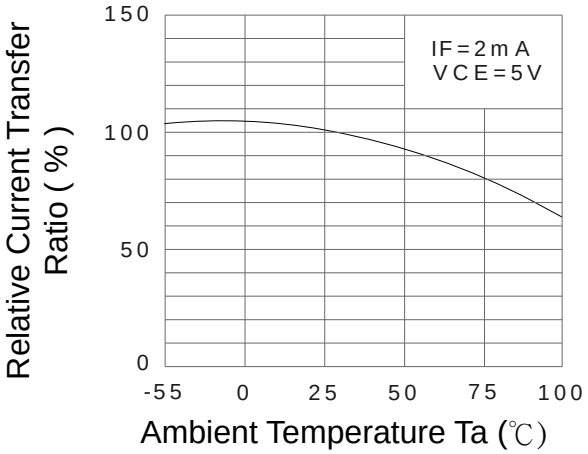


Fig.8 **Collector-Emitter Saturation Voltage vs. Ambient Temperature**

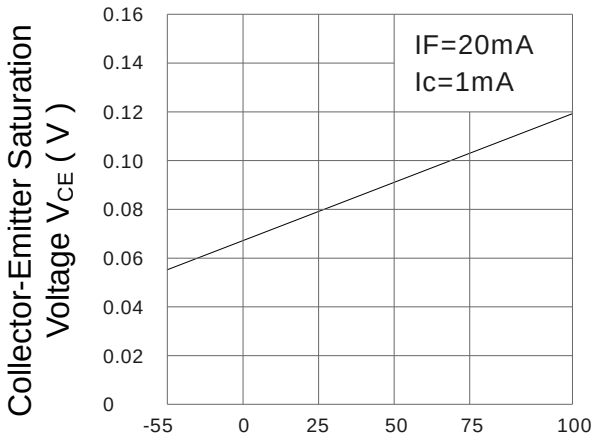


Fig.9 **Collector-Emitter Saturation Voltage vs. Forward Current**

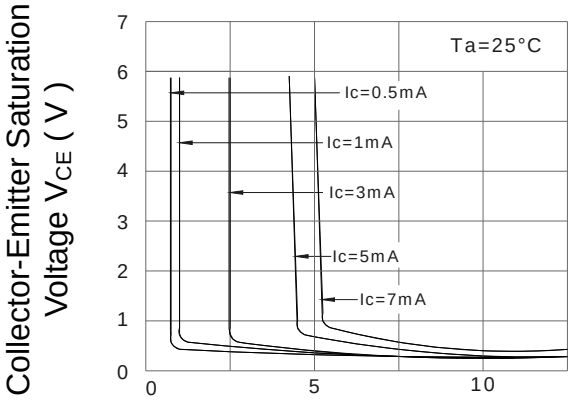


Fig.10 **Response Time vs. Load Resistance**

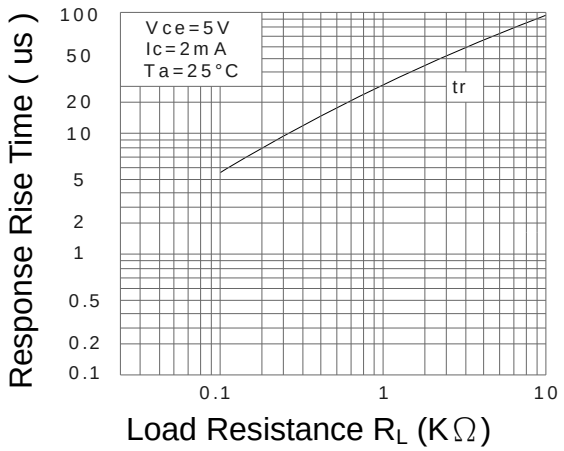
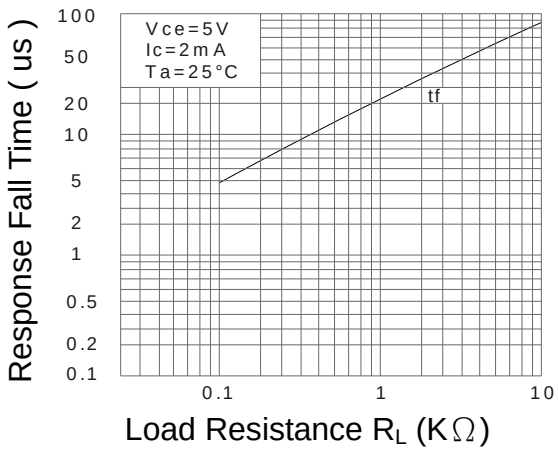


Fig.11 **Response Time vs. Load Resistance**



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