PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KP3040	SHEET 1 OF 5

High Reliability Photocoupler

● Features

1. Current transfer ratio

   (CTR : MIN.60% at I_F =± 1mA Vce=5V)

2. High isolation voltage between input and output (Viso : 5000Vrms).

3. Compact dual-in-line package.

4. AC input.

● Applications

1. Programmable Controller Applications for Low Input Photocouplers and High Vceo Photocouplers.

2. Telephone sets, telephone exchangers.

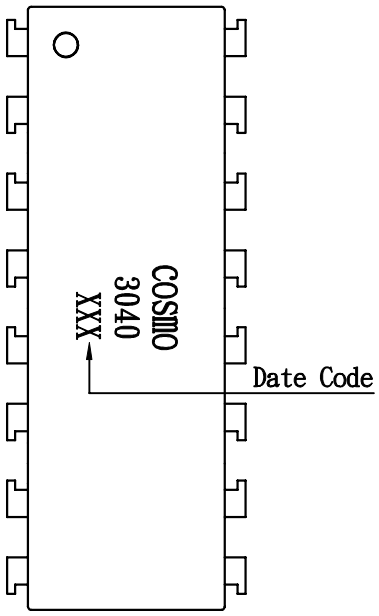
3. System appliances. • Limit Switches • Sensors • Thermostats • Transdusers etc.

4. Signal transmission between circuits of different potentials and impedances.

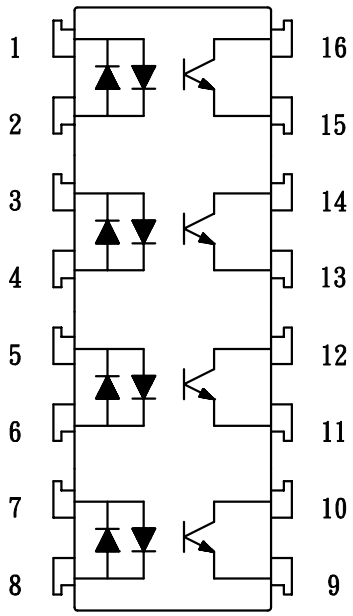
PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KP3040	SHEET 2 OF 5

1. OUTSIDE DIMENSION : UNIT (mm)

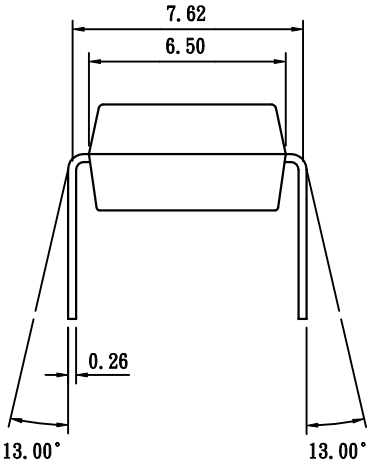


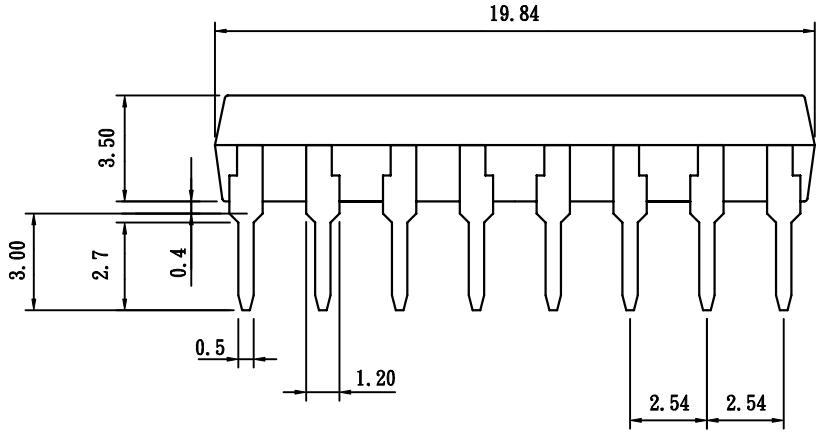
2. SCHEMATIC : TOP VIEW



01, 02. Anode, Cathode
03, 04. Anode, Cathode
05, 06. Anode, Cathode
07, 08. Anode, Cathode
09, 11, 13, 15. Emitter
10, 12, 14, 16. Collector

TOLERANCE : ± 0.2mm





PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KP3040	SHEET 3 OF 5

• Absolute Maximum Ratings

(Ta=25°C)

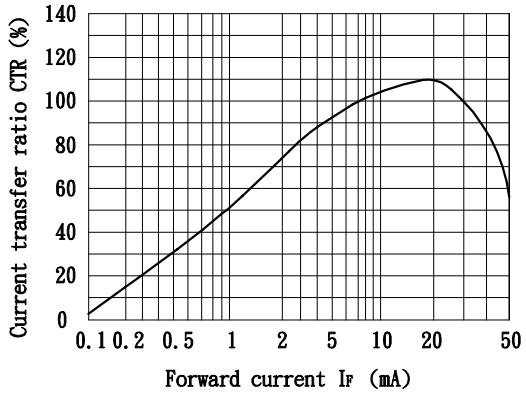
Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	± 50	mA
	Peak forward current	I_{FM}	± 1	A
	Power dissipation	P_D	70	mW
Output	Collector-emitter voltage	V_{CEO}	60	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	Ic	50	mA
	Collector power dissipation	Pc	150	mW
Total power dissipation		P_{tot}	200	mW
Isolation voltage 1 minute		Viso	5000	Vrms
Operating temperature		Topr	-30 to +100	° C
Storage temperature		Tstg	-55 to +125	° C
Soldering temperature 10 second		Tsol	260	° C

• Electro-optical Characteristics

(Ta=25°C)

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, I_F=0	-	-	0.1	uA
Transfer characteristics	Current transfer ratio	CTR	I_F=± 1mA, V_{CE}=5V	60	-	600	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	I_F=± 20mA, I_C=1mA	-	0.1	0.3	V
	Isolation resistance	Riso	DC500V	$5x10^{10}$	10^{11}	-	ohm
	Floating capacitance	C_f	V=0, f=1MHz	-	0.6	1.0	pF
	Cut-off frequency	fc	V_{CC}=5V, I_C=2mA, R_L=100ohm	-	80	-	kHz
	Response time (Rise)	tr	V_{CC}=2V, I_C=2mA, R_L=100ohm	-	5	20	us
	Response time (Fall)	tf		-	4	20	us

Fig.1 Current Transfer Ratio vs. Forward Current



PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KP3040	SHEET 4 OF 5

Fig. 2 Collector Power Dissipation vs. Ambient Temperature

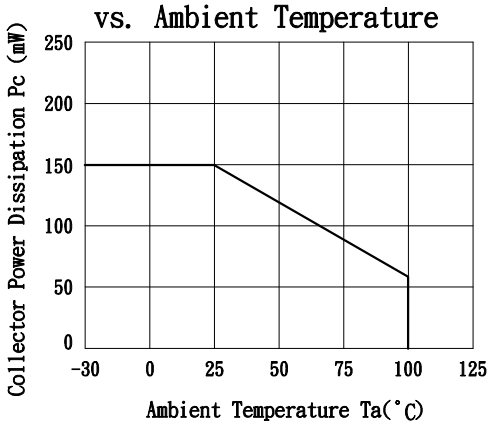


Fig. 3 Collector Dark Current vs. Ambient Temperature

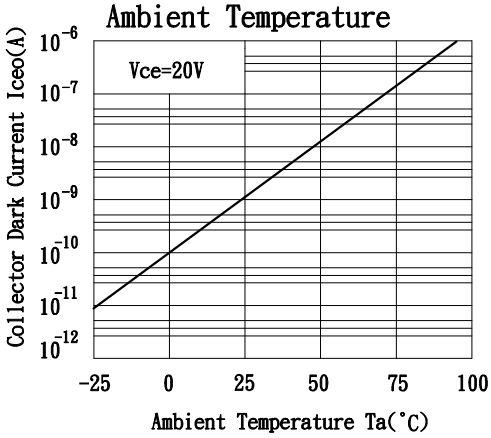


Fig. 4 Forward Current vs. Ambient Temperature

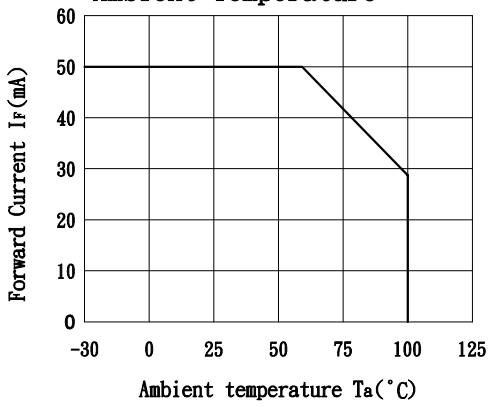


Fig. 5 Forward Current vs. Forward Voltage

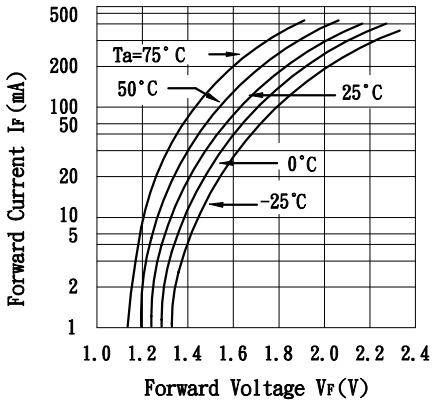


Fig. 6 Collector Current vs. Collector-emitter Voltage

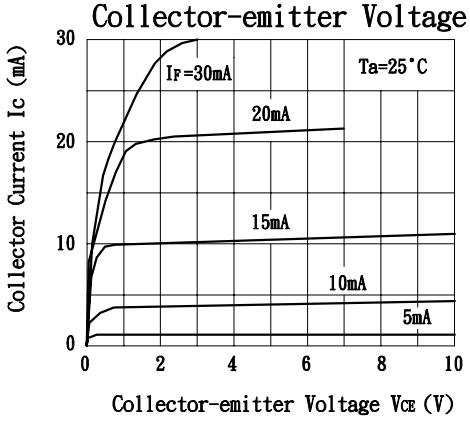
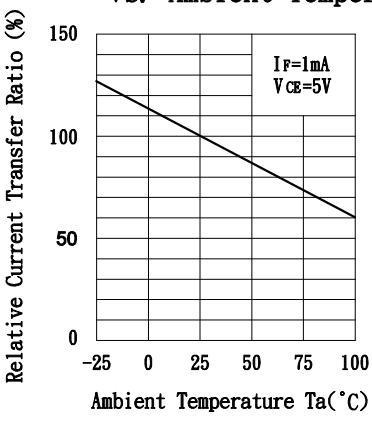


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature



PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KP3040	SHEET 5 OF 5

Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

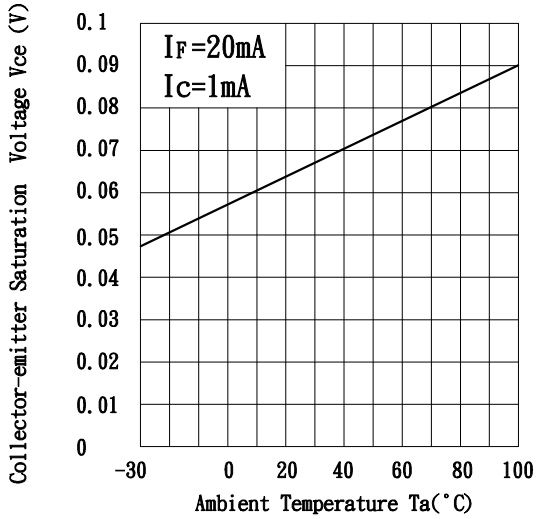


Fig. 9 Collector-emitter Saturation Voltage vs. Forward Current

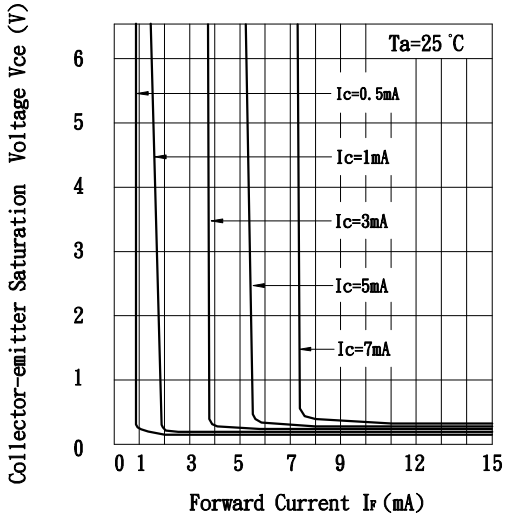


Fig. 10 Response Time vs. Load Resistance

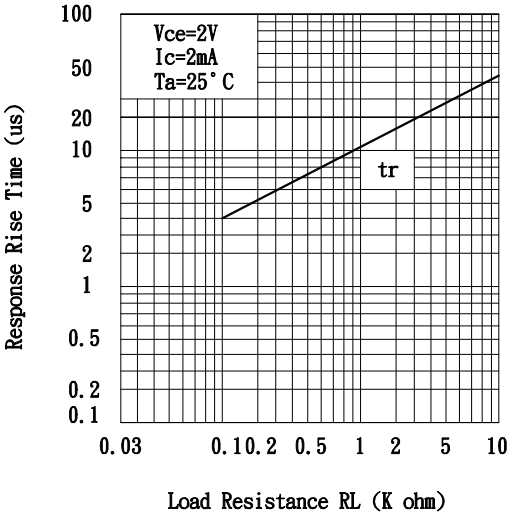


Fig. 11 Response Time vs. Load Resistance