

# PRODUCT SPECIFICATION

<b>COSMO</b> ELECTRONICS CORP.	Photocoupler : <b>KPC452</b>	SHEET 1 OF 5
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## Compact Surface Mount, High Collector emitter Voltage Type Photocoupler

### ● Features

1. Mini-flat package.
2. High collector-emitter voltage  
( $V_{CE0}$ : 300V)
3. High current transfer ratio  
(CTR : MIN. 1000% at  $I_F=1mA$ ,  $V_{CE}=2V$ )
4. High isolation voltage between input and output (Viso:3750Vrms).

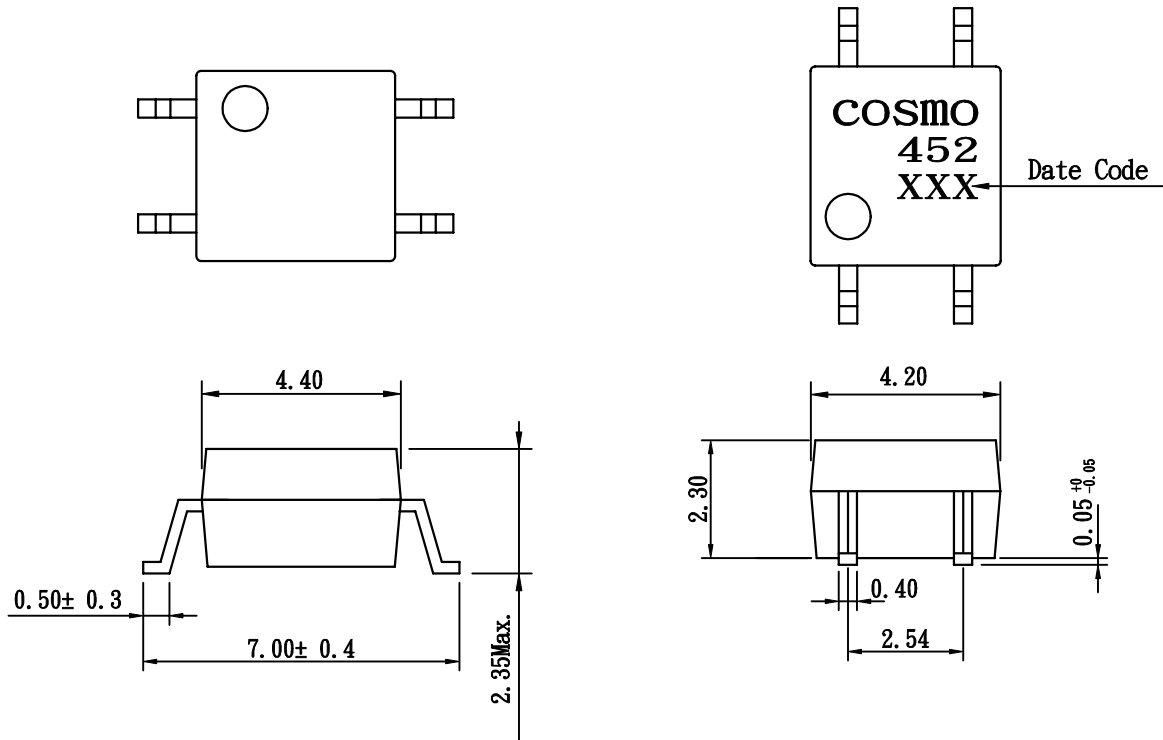
### ● Applications

1. Telephone sets.
2. Copiers, facsimiles.
3. Interfaces with various power supply circuits,  
power distribution boards.
4. Hybrid substrates which require high density mounting.

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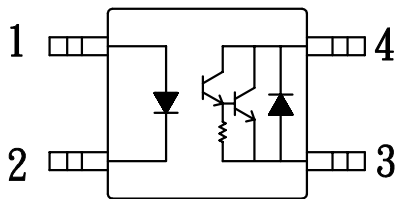
<b>COSMO</b> ELECTRONICS CORP.	Photocoupler : <b>KPC452</b>	SHEET 2 OF 5
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## 1. OUTSIDE DIMENSION : UNIT(mm)



t=0.254± 0.05mm  
TOLERANCE : ± 0.2mm

## 2. SCHEMATIC : TOP VIEW



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

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<b>COSMO</b> ELECTRONICS CORP.	Photocoupler : <b>KPC452</b>	<b>SHEET 3 OF 5</b>
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## • Absolute Maximum Ratings

(Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	Peak forward current	IFM	1	A
	Reverse voltage	VR	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	VCEO	300	V
	Emitter-collector voltage	VECO	0.1	V
	Collector current	Ic	150	mA
	Collector power dissipation	Pc	150	mW
	Total power dissipation	Ptot	170	mW
	Isolation voltage 1 minute	Viso	3750	Vrms
	Operating temperature	Topr	-30 to +100	°C
	Storage temperature	Tstg	-40 to +125	°C
	Soldering temperature 10 seconds	Tsol	260	°C

## • Electro-optical Characteristics

(Ta=25°C)

	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	VF	IF=10mA	-	1.2	1.4	V
	Reverse current	IR	VR=4V	-	-	10	uA
	Terminal capacitance	Ct	V=0, f=1kHz	-	30	-	pF
Output	Collector dark current	ICBO	VCE=200V, IF=0	-	-	1	uA
	Collector-emitter breakdown voltage	BVCEO	Ic=0.1mA, IF=0	300	-	-	V
Transfer characteristics	Current transfer ratio	CTR	IF=1mA, VCE=2V	1000	-	-	%
	Collector-emitter saturation voltage	VCE(sat)	IF=20mA, Ic=100mA	-	-	1.5	V
	Isolation resistance	Riso	DC500V, 40 to 60%RH	5x10 <sup>10</sup>	10 <sup>11</sup>	-	ohm
	Floating capacitance	Cf	V=0, f=1MHz	-	0.6	1.0	pF
	Response time (Rise)	tr	VCC=2V, Ic=20mA	-	100	300	us
	Response time (Fall)	tf	RL=100ohm	-	20	100	us

# PRODUCT SPECIFICATION

<p><b>COSMO</b> ELECTRONICS CORP.</p>	<p>Photocoupler : <b>KPC452</b></p>	<p><b>SHEET 4 OF 5</b></p>
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Fig.1 Forward Current vs. Ambient Temperature

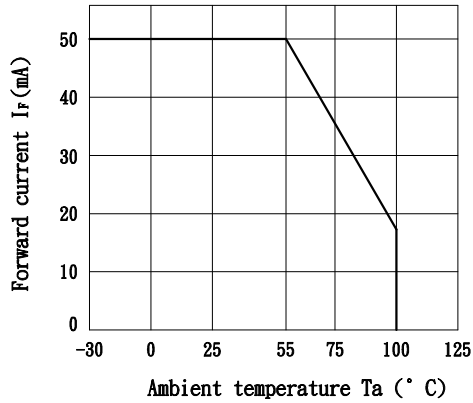


Fig.2 Collector Power Dissipation vs. Ambient Temperature

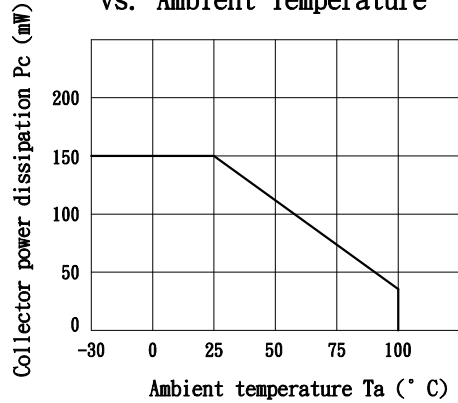


Fig.3 Peak Forward Current vs. Duty Ratio

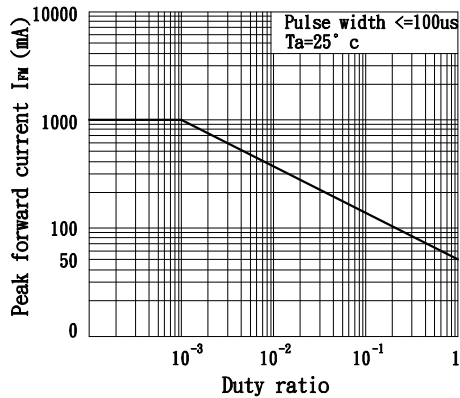


Fig.4 Forward Current vs. Forward Voltage

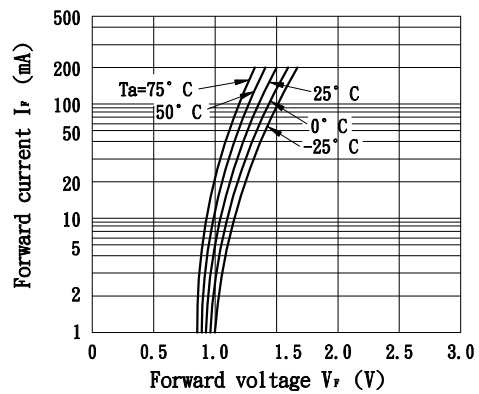


Fig.5 Current Transfer Ratio vs. Forward Current

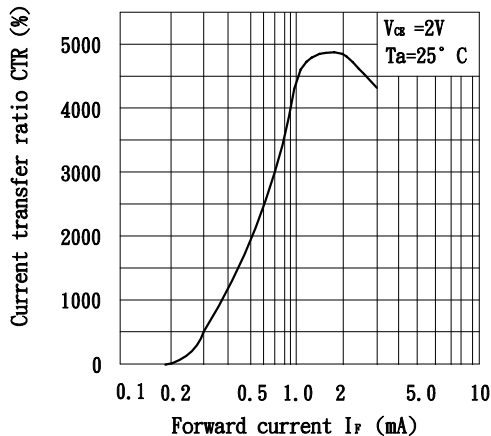
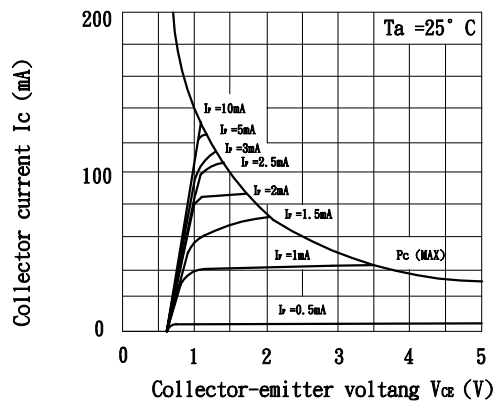


Fig.6 Collector Current vs. Collector-emitter Voltage



# PRODUCT SPECIFICATION

<p><b>COSMO</b> ELECTRONICS CORP.</p>	<p>Photocoupler : <b>KPC452</b></p>	<p>SHEET 5 OF 5</p>
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Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

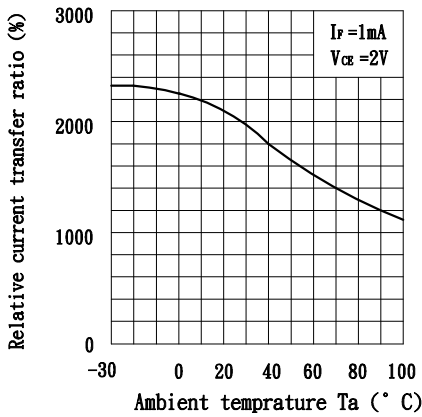


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

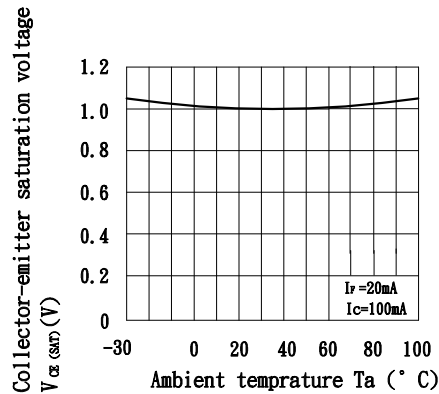


Fig. 9 Collector Dark Current vs. Ambient Temperature

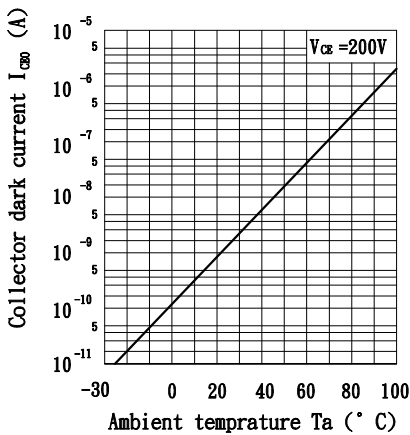


Fig. 10 Response Time vs. Load Resistance

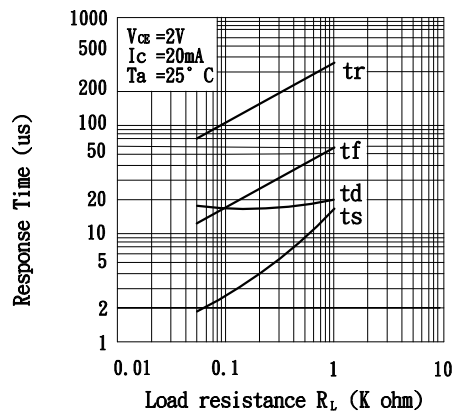


Fig. 11 Frequency Response

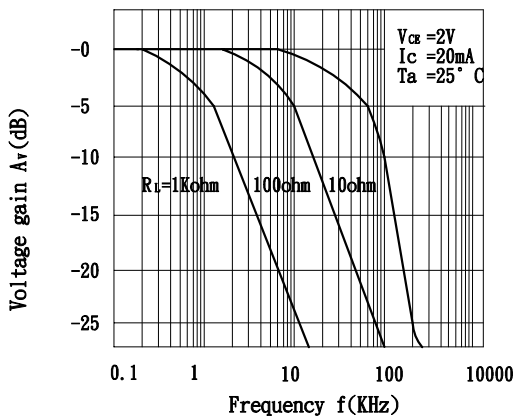


Fig. 12 Collector-emitter Saturation Voltage vs. Forward current

