

PRODUCT SPECIFICATION

COSMO ELECTRONICS CO., LTD.	Photocoupler : KPC357NT	SHEET 1 OF 6
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Mini-flat package General purpose Photocoupler

● Features

1. Opaque type, mini-flat package.
2. Subminiature type
(The volume is smaller than that of our conventional DIP type by as far as 30%)
3. Current transfer ratio
(CTR : MIN. 50% at $I_F=5\text{mA}$ $V_{ce}=5\text{V}$)
4. Isolation voltage between input and output (Viso:3750Vrms).

● Applications

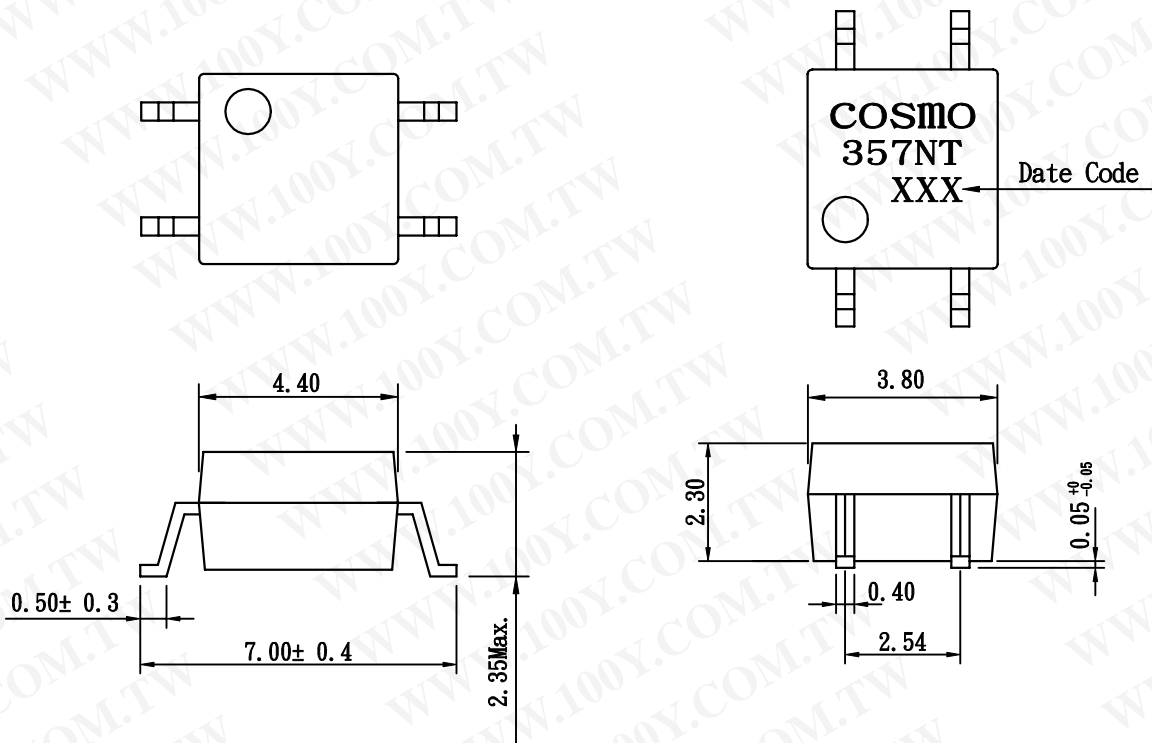
1. Hybrid substrates that require high density mounting.
2. Programmable controllers.

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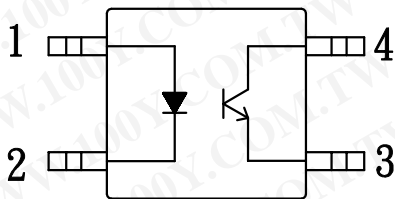
COSMO ELECTRONICS CO., LTD.	Photocoupler : KPC357NT	SHEET 2 OF 6
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1. OUTSIDE DIMENSION : UNIT(mm)



t=0.254± 0.05mm
TOLERANCE : ± 0.2mm

2. SCHEMATIC : TOP VIEW



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

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COSMO ELECTRONICS CO., LTD.	Photocoupler : KPC357NT	SHEET 3 OF 6
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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	60	V
	Emitter-collector voltage	VECO	5	V
	Collector current	Ic	50	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=20mA	-	1.2	1.4	V
	Reverse current	Ir	VR=4V	-	-	10	uA
	Terminal capacitance	Ct	V=0, f=1kHz	-	30	250	pF
Output	Collector dark current	ICEO	VCE=20V, IF=0	-	-	0.1	uA
	Collector-emitter breakdown voltage	BVCEO	Ic=0.1mA, IF=0	60	-	-	V
	Emitter-collector breakdown voltage	BVECO	IF=100uA, IF=0	5	-	-	V
	Current transfer ratio	CTR	IF=5mA, VCE=5V	50	-	600	%
Transfer characteristics	Collector-emitter saturation voltage	VCE(sat)	IF=20mA, Ic=1mA	-	0.1	0.3	V
	Isolation resistance	Riso	DC500V, 40 to 60%RH	5x10 ¹⁰	10 ¹¹	-	ohm
	Floating capacitance	Cf	V=0, f=1MHz	-	0.6	1.0	pF
	Response time (Rise)	tr	VCE=2V, Ic=2mA	-	5	20	us
	Response time (Fall)	tf	RL=100ohm	-	4	20	us

• Classification table of current transfer ratio is shown below

RANK MARK	CTR(%)
A	80 TO 160
B	130 TO 260
C	200 TO 400
D	300 TO 600
E	50 TO 600

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Fig. 1 Forward Current vs. Ambient Temperature

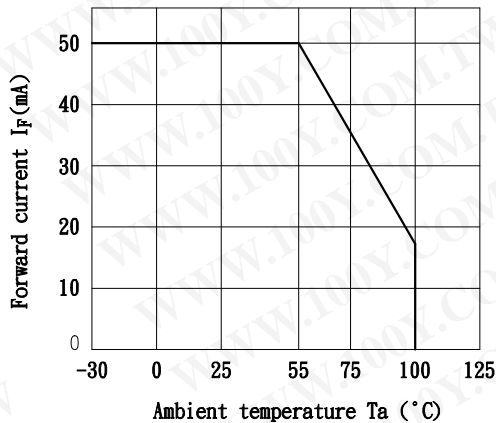


Fig. 2 Diode Power Dissipation vs. Ambient Temperature

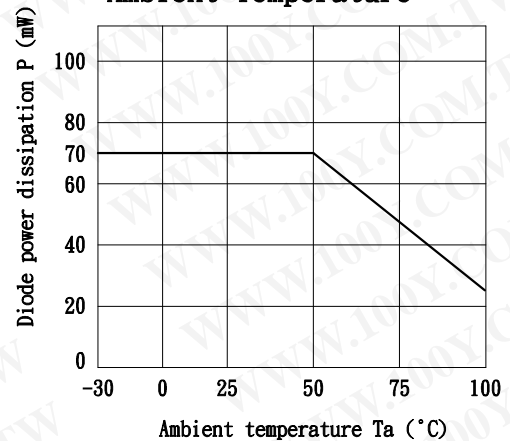


Fig. 3 Collector Power Dissipation vs. Ambient Temperature

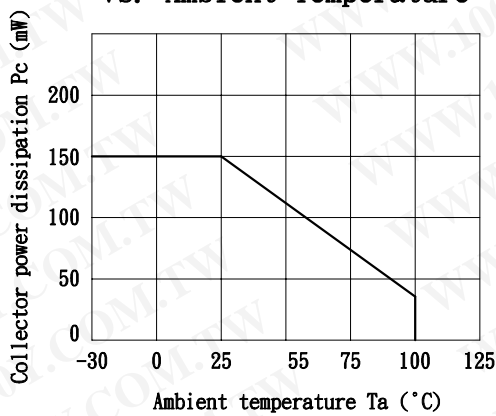


Fig. 4 Total Power Dissipation vs. Ambient Temperature

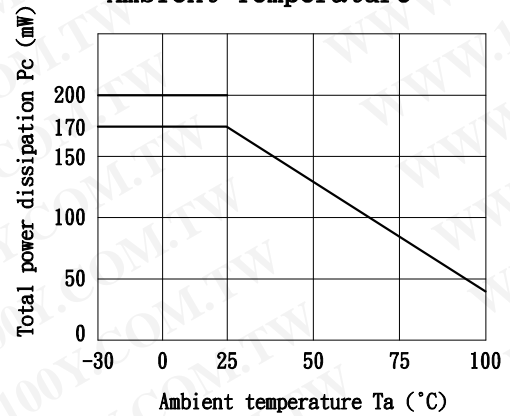


Fig. 5 Peak Forward Current vs. Duty Ratio

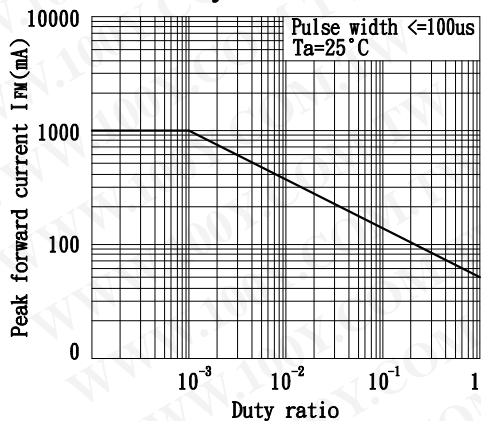
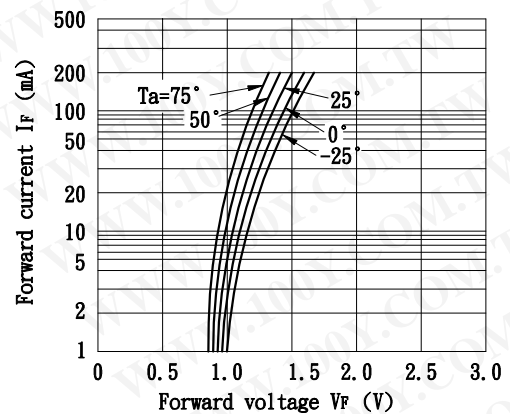


Fig. 6 Forward Current vs. Forward Voltage



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Fig. 7 Current Transfer Ratio vs. Forward Current

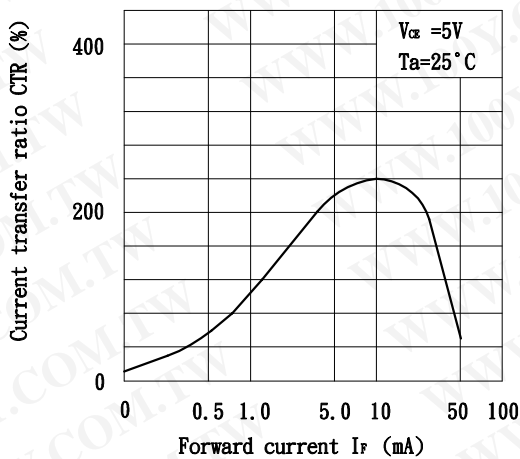


Fig. 8 Collector Current vs. Collector-emitter Voltage

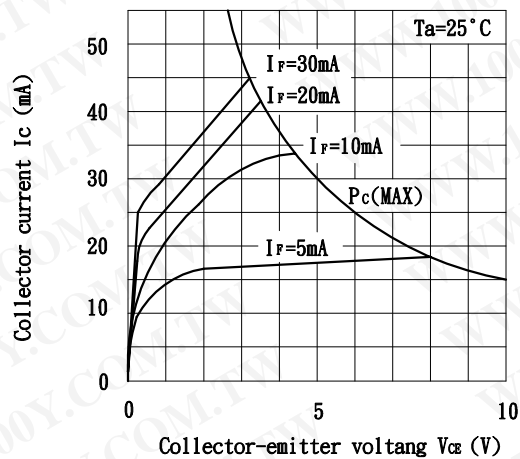


Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature

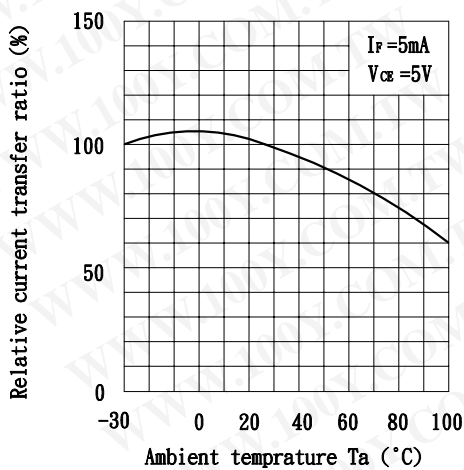
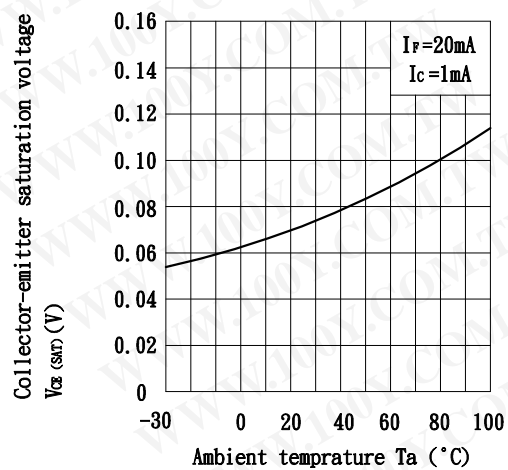


Fig. 10 Collector-emitter Saturation Voltage vs. Ambient Temperature



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SHEET 6 OF 6

Fig.11 Collector Dark Current vs. Ambient Temperature

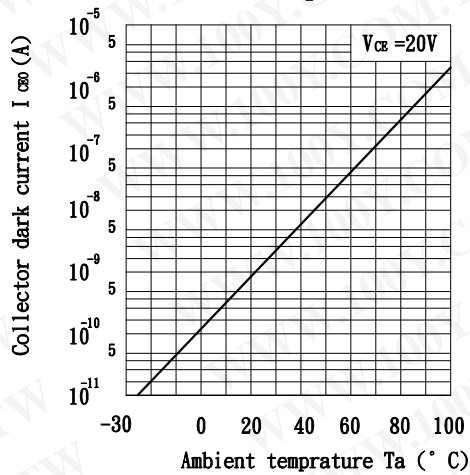
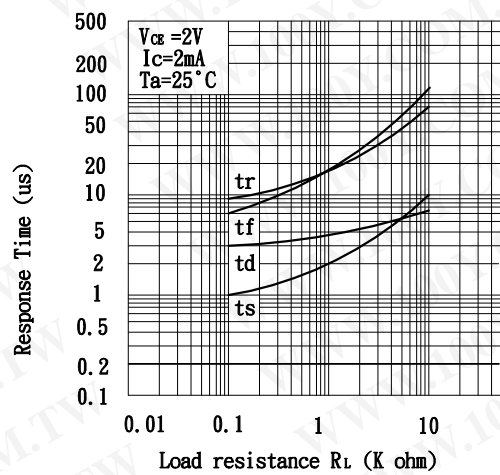


Fig.12 Response Time vs. Load Resistance



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