PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KPC357NT	SHEET 1 OF 6

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=5mA Vce=5V)
4. Isolation voltage between input and output (Viso:3750Vrms).

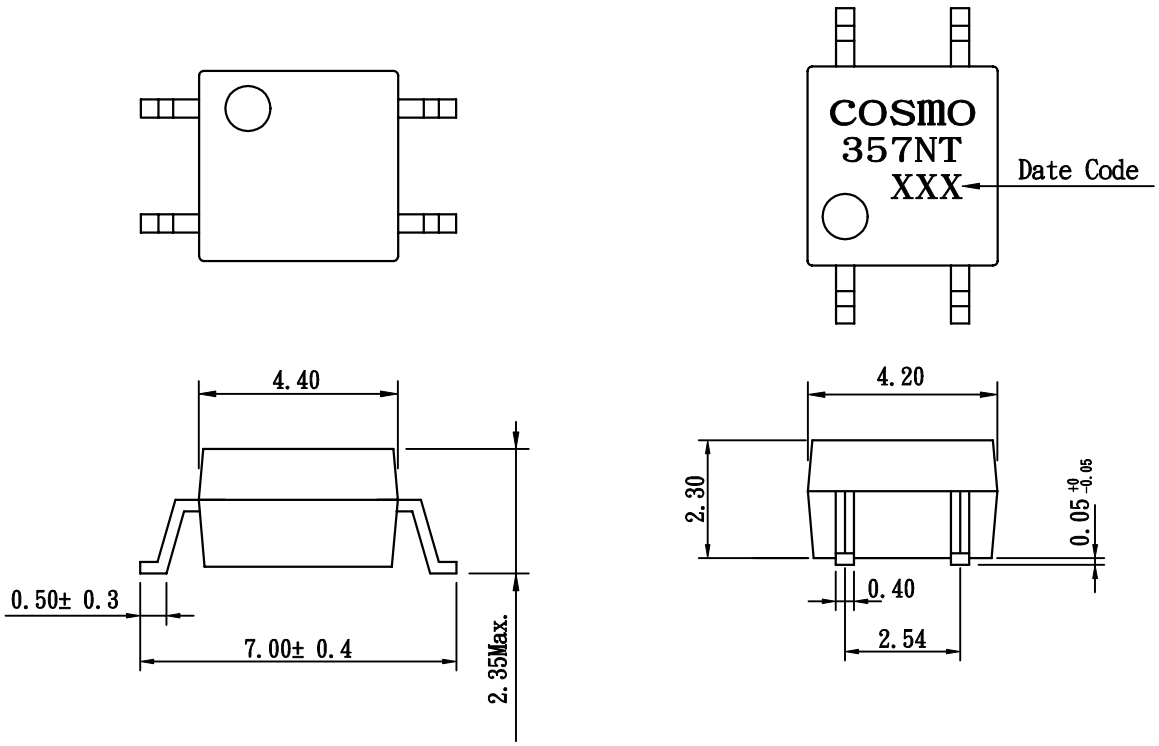
● Applications

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

PRODUCT SPECIFICATION

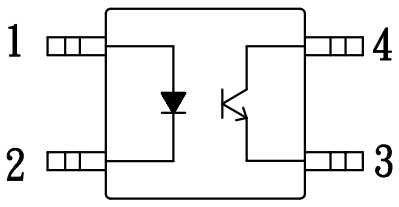
COSMO ELECTRONICS CORP.	Photocoupler : KPC357NT	SHEET 2 OF 6

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

PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KPC357NT	SHEET 3 OF 6

• Absolute Maximum Ratings (Ta=25°C)

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	70	mW
Output	Collector-emitter voltage	V_{CEO}	60	V
	Emitter-collector voltage	V_{ECO}	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	V_F	I_F=20mA	-	1.2	1.4	V
	Reverse current	I_R	V_R=4V	-	-	10	uA
	Terminal capacitance	Ct	V=0, f=1kHz	-	30	250	pF
Output	Collector dark current	I_{CEO}	V_{CE}=20V, I_F=0	-	-	0.1	uA
	Collector-emitter breakdown voltage	BV_{CEO}	Ic=0.1mA, I_F=0	60	-	-	V
	Emitter-collector breakdown voltage	BV_{ECO}	I_F=100uA, I_F=0	5	-	-	V
Transfer characteristics	Current transfer ratio	CTR	I_F=5mA, V_{CE}=5V	50	-	600	%
	Collector-emitter saturation voltage	V_{CE}(sat)	I_F=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	V_{CE}=2V, Ic=2mA	-	5	20	us
	Response time (Fall)	tf	R_L=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

PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KPC357NT	SHEET 4 OF 6

Fig.1 Forward Current vs. Ambient Temperature

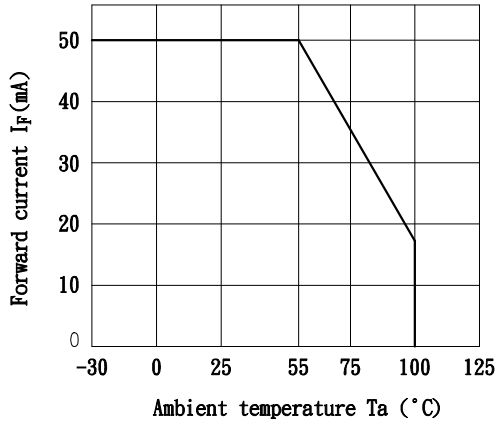


Fig.2 Diode Power Dissipation vs. Ambient Temperature

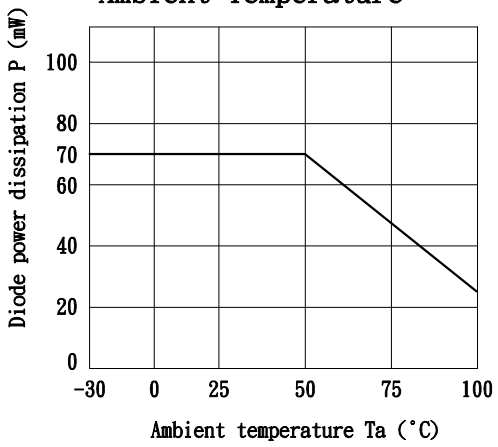


Fig.3 Collector Power Dissipation vs. Ambient Temperature

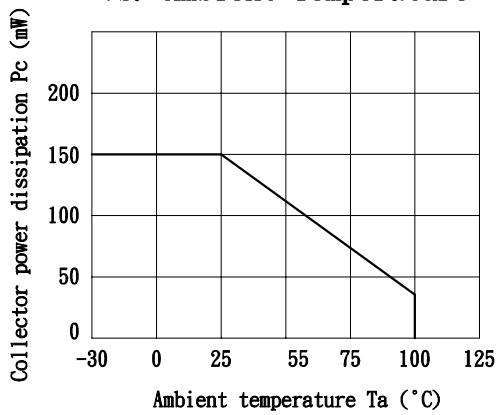


Fig.4 Total Power Dissipation vs. Ambient Temperature

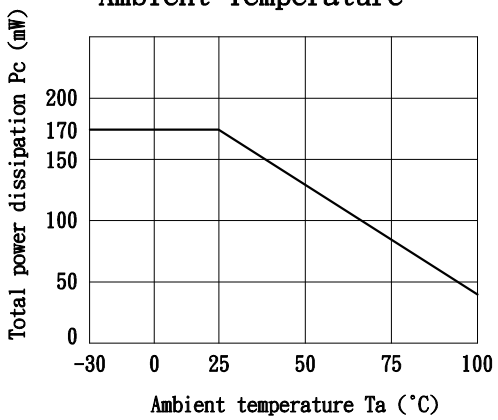


Fig.5 Peak Forward Current vs. Duty Ratio

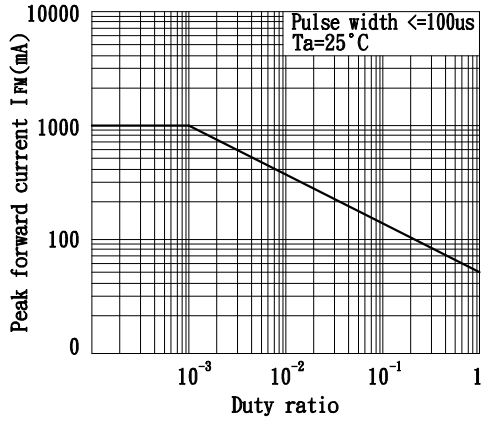
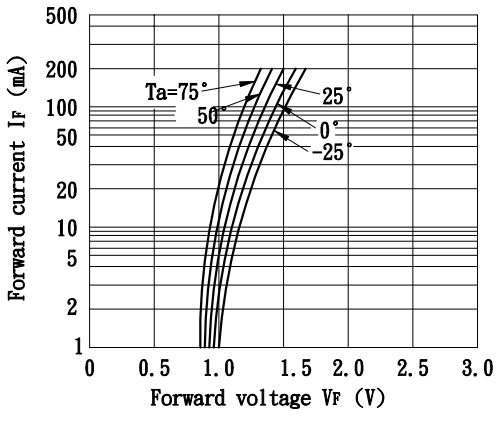


Fig.6 Forward Current vs. Forward Voltage



PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KPC357NT	SHEET 5 OF 6

Fig.7 Current Transfer Ratio vs. Forward Current

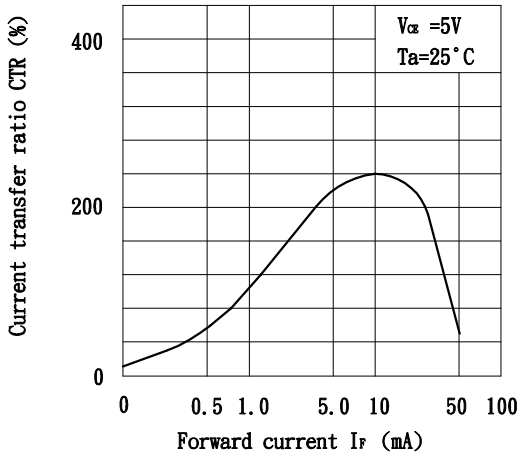


Fig.8 Collector Current vs. Collector-emitter Voltage

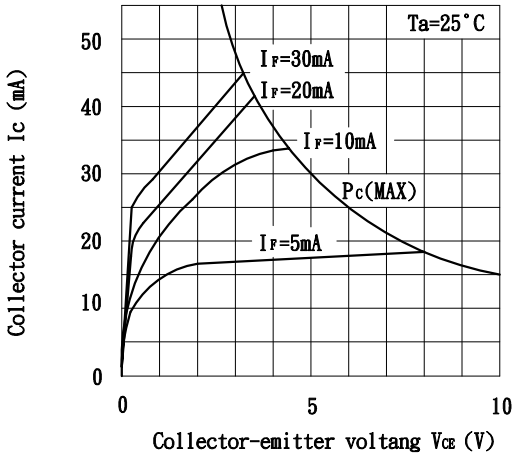


Fig.9 Relative Current Transfer Ratio vs. Ambient Temperature

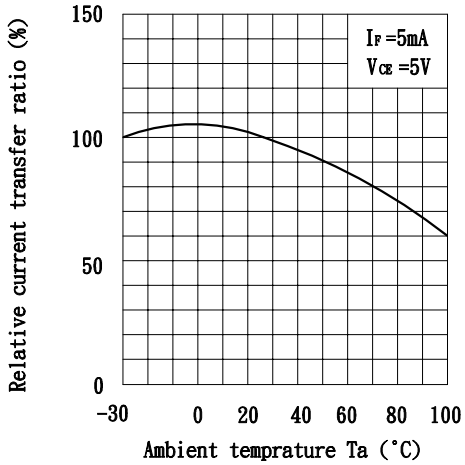
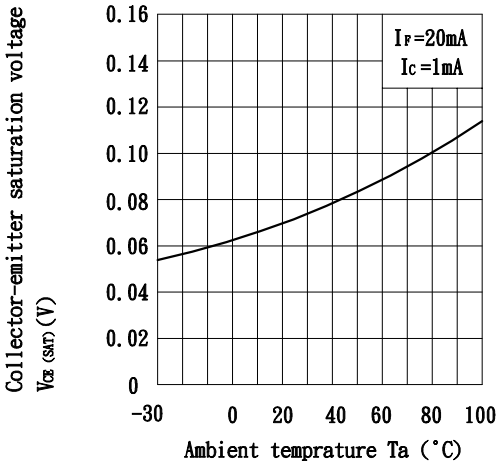


Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature



PRODUCT SPECIFICATION

COSMO ELECTRONICS CORP.	Photocoupler : KPC357NT	SHEET 6 OF 6

Fig.11 Collector Dark Current vs. Ambient Temperature

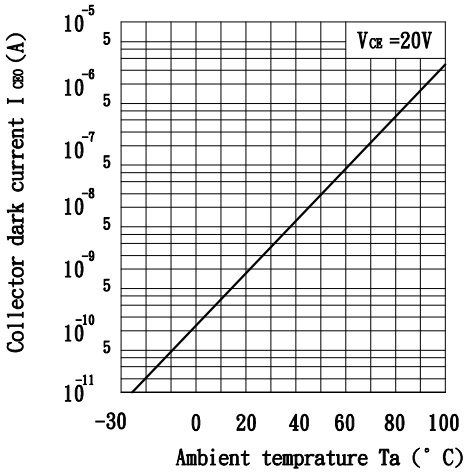


Fig.12 Response Time vs. Load Resistance