PRODUCT SPECIFICATION

DATE:11/29/2012

cosmo ELECTRONICS CORPORATION	Photocoupler : KPC357NT	NO.61P04115	REV. 8
		SHEET 1 OF 7	

Mini-Flat package
General purpose Photocoupler

● Features

1. Halogen Free.
2. Pb free and RoHS compliant.
3. Mini-flat package:

   compact 4 pin SOP with a 2.0mm profile
4. Current transfer ratio

   (CTR : MIN.50% at IF=5mA Vce=5V)
5. Isolation voltage between input and output (Viso : 3750vrms).
6. Agency Approvals
   - UL approved：No.E169586
   - VDE approved：No.40014684
   - FIMKO approved：EN 60065 No. FI 23147 A1
     EN 60950 No. FI 24583 A1
   - CQC approved：No. CQC04001010530

● Applications

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

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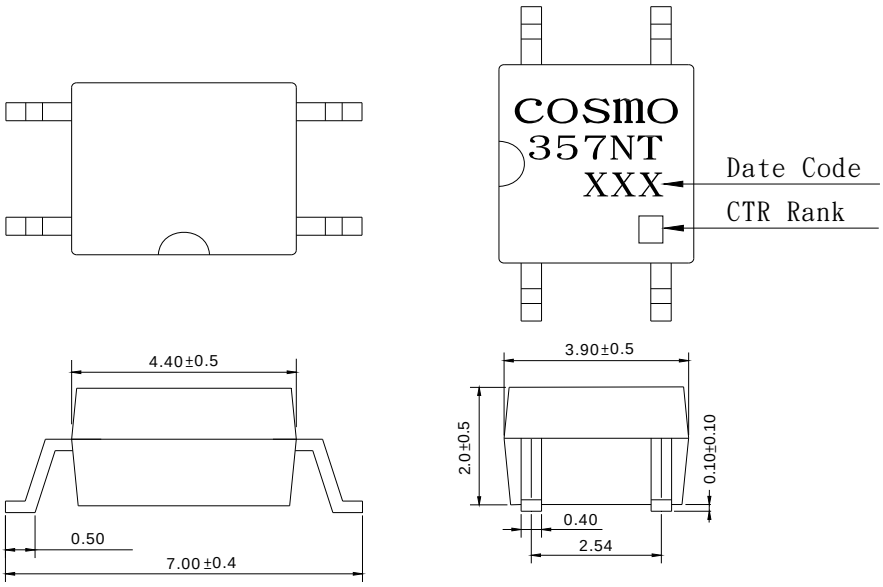
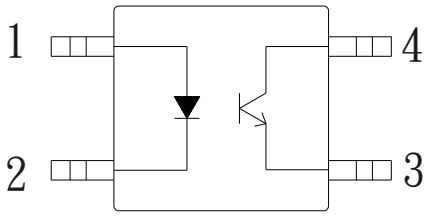
1. OUTSIDE DIMENSION : UNIT (mm)



TOLERANCE : ±0.2mm

2. SCHEMATIC : TOP VIEW



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

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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	70	mW
Output	Collector-emitter voltage	V_{CEO}	80	V
	Emitter-collector voltage	V_{ECO}	5	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	150	mW
Total power dissipation		Ptot	170	mW
Isolation voltage 1 minute		Viso	3750	Vrms
Operating temperature		Topr	-55 to +115	℃
Storage temperature		Tstg	-55 to +125	℃
Soldering temperature 10 second		Tsol	260	℃

●Electro-optical Characteristics

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	IF=20mA	-	1.2	1.4	V
	Reverse current	I_R	VR=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=100uA , I_F=0	80	-	-	V
	Emitter-collector breakdown voltage	BV_{ECO}	I_E=100uA, I_F=0	5	-	-	V
Transfer charac-teristics	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	C_f	V=0, f=1MHz	-	0.6	1.0	pF
	Response time (Rise)	tr	Vce=2V,Ic=2mA,RL=100ohm	-	5	20	us
	Response time (Fall)	tf		-	4	20	us

●Classification table of current transfer ratio is shown below.

CTR RANK	CTR(%)
KPC357NT0A	80 TO 160
KPC357NT0B	130 TO 260
KPC357NT0C	200 TO 400
KPC357NT0D	300 TO 600
KPC357NT0E	50 TO 600

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Fig.1 Forward Current vs.Ambient Temperature

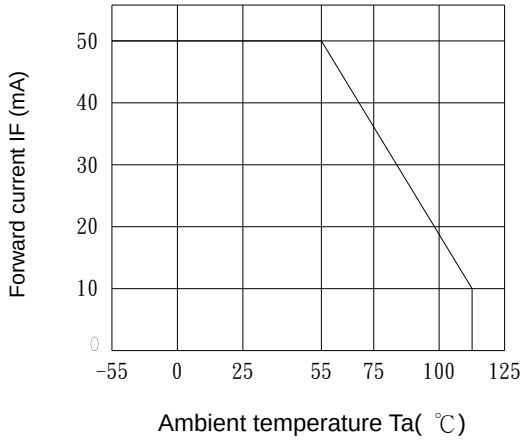

Fig.2 Diode Power Dissipation vs. Ambient Temperature

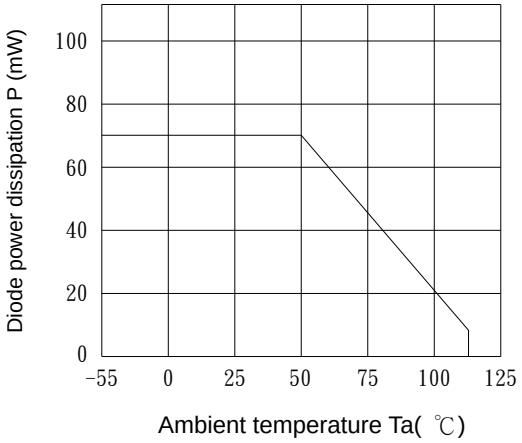

Fig.3 Collector Power Dissipation vs. Ambient Temperature

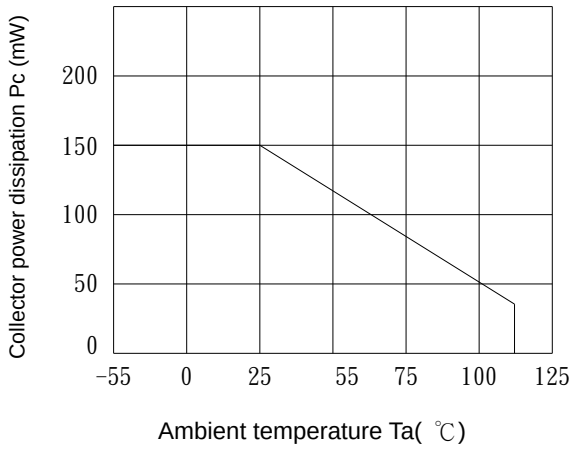

Fig.4 Total Power Dissipation vs. Ambient Temperature

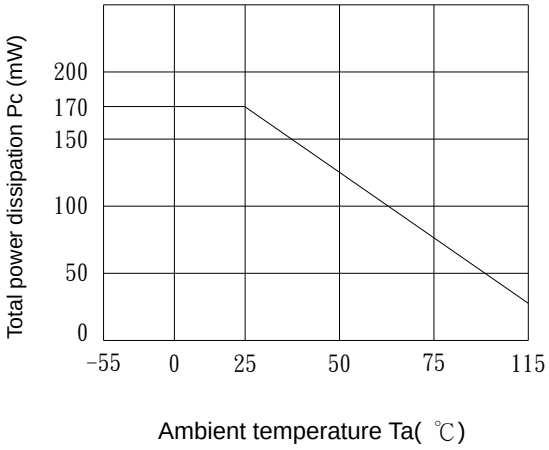

Fig.5 Peak Forward Current vs. Duty Ratio

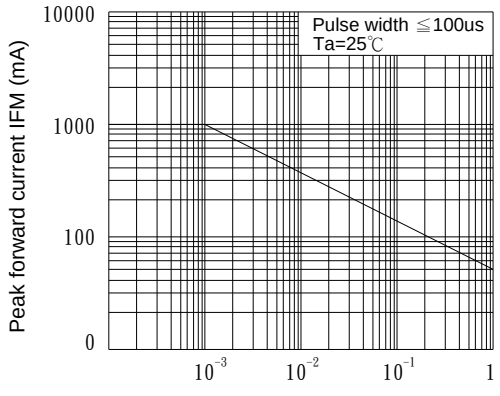

Fig.6 Forward Current vs. Forward Voltage

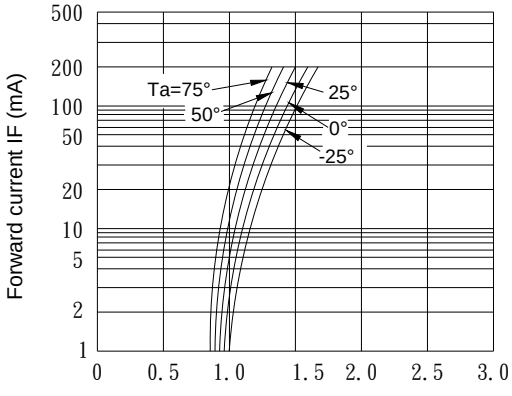

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Fig.7 Current Transfer Ratio vs. Forward Current

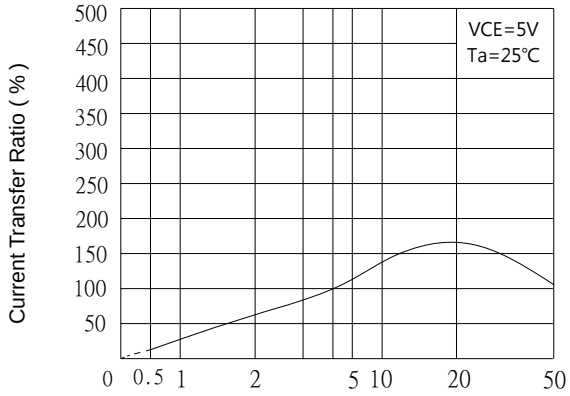

Fig.8 Collector Current vs. Collector-Emitter Voltage

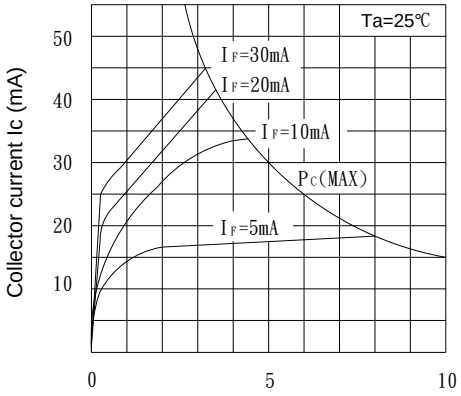

Fig.9 Relative Current Transfer Ratio vs. Ambient Temperature

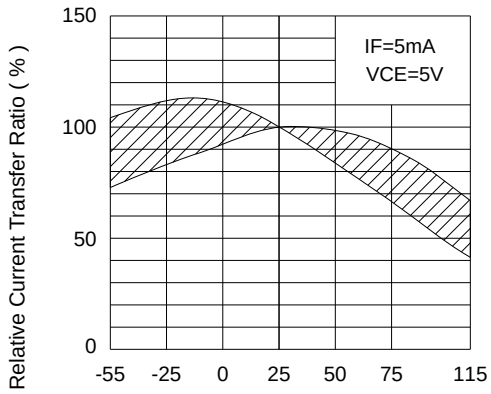

Fig.10 Collector-Emitter Saturation Voltage vs. Ambient Temperature

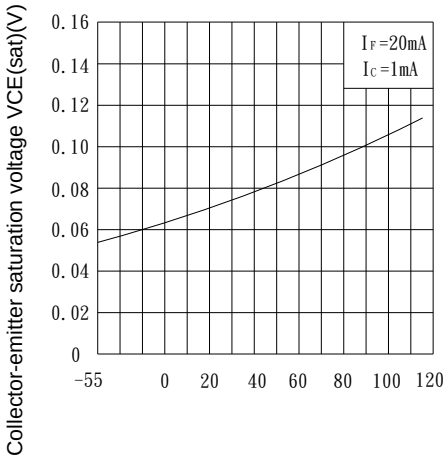

Fig.11 Collector Dark Current vs. Ambient Temperature

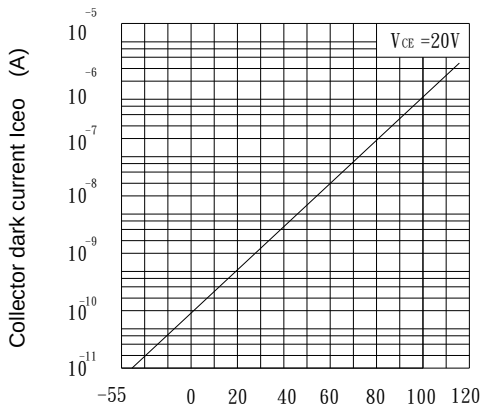

Fig.12 Response Time vs. Load Resistance

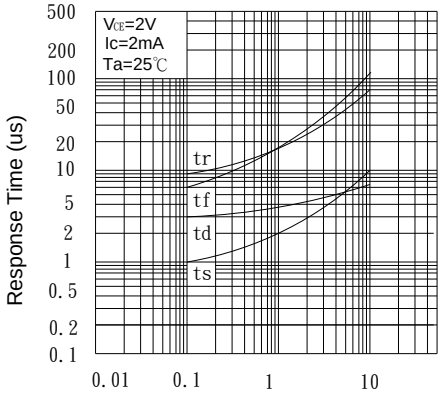

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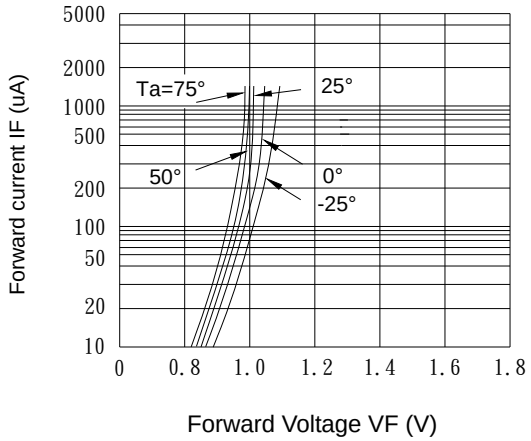
Fig.13 Forward Current vs. Forward Voltage



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