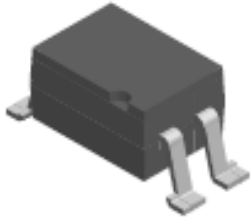


Mini-flat Package General Purpose Photo Coupler

Features

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



QSCTA14S



Applications

- Hybrid substrates that require high density mounting.
- Programmable controllers.

Classification table of current transfer ratio is shown below:

Model No.	CTR (%)
A	80 To 160
B	130 To 260
C	200 To 400
D	300 To 600
E	50 To 600

Mini-flat Package General Purpose Photo Couple

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Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

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_D	70	mW
Output	Collector-emitter Voltage	V_{CEO}	60	V
	Emitter-collector Voltage	V_{ECO}	5	V
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	150	mW
Total Power Dissipation		P_{tot}	170	mW
Isolation Voltage 1 Minute		V_{iso}	3750	V _{rms}
Operating Temperature		T_{opr}	-30 ~ +100	°C
Storage Temperature		T_{stg}	-40 ~ +125	°C
Soldering Temperature 10 seconds		T_{sol}	260	°C

Mini-flat Package General Purpose Photo Couple

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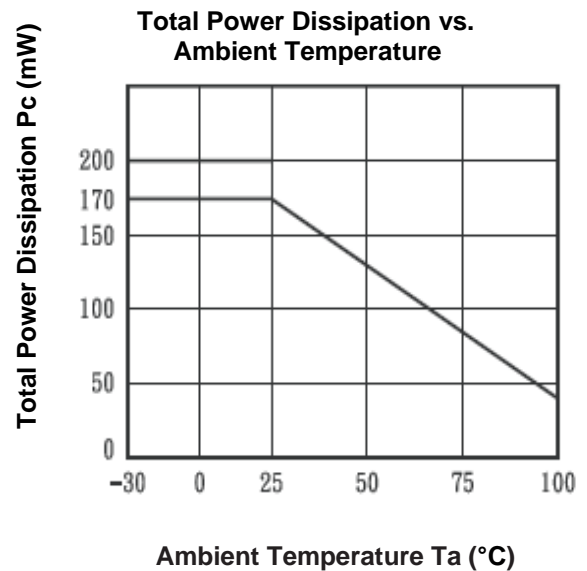
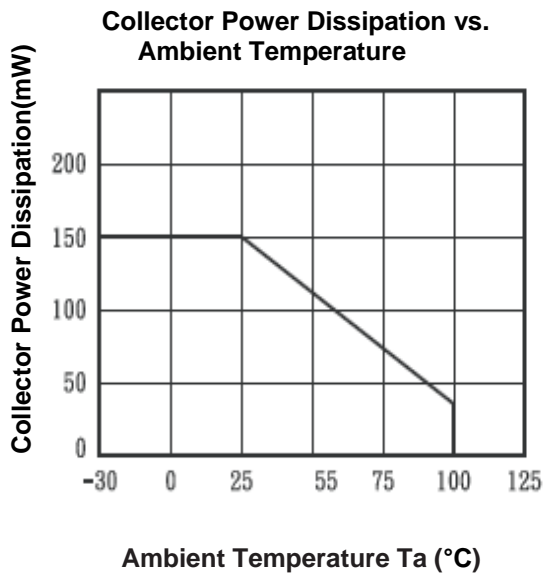
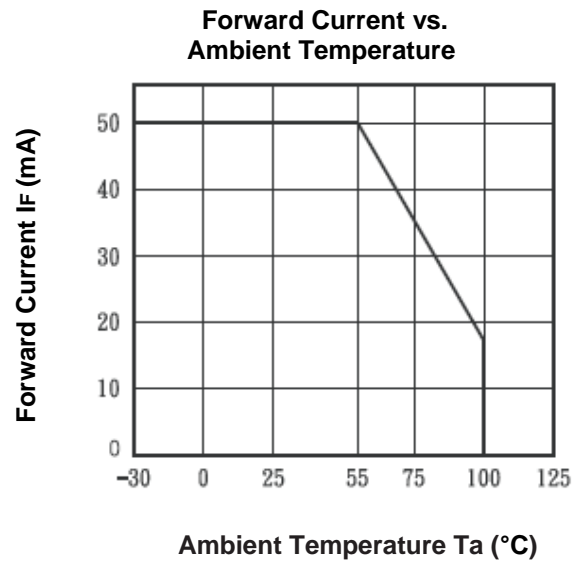
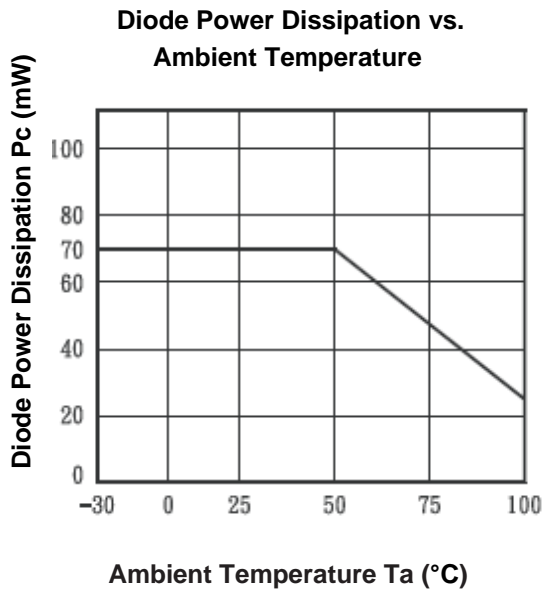
Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	VF	----	1.2	1.4	V	IF=20mA
	Reverse Current	IR	----	----	10	uA	VR =4V
	Terminal Capacitance	Ct	----	30	250	pF	V=0,f=1KHz
Output	Collector Dark Current	ICEO	----	----	0.1	nA	VCE=20V,IF=0
	Collector-emitter Breakdown Voltage	BVCEO	60	----	----	V	IC=0.1mA, IF=0
	Emitter-collector Breakdown Voltage	BVECO	5	----	----	V	IE=100uA,IF=0
Transfer Characteristics	Current Transfer Ratio	CTR	50	----	600	%	IF=5mA,Vce=5V
	Collector-emitter Saturation Voltage	VCE(sat)	----	0.1	0.3	V	IF=20mA,IC=1mA
	Isolation Resistance	Riso	5x10 ¹⁰	10 ¹¹	----	ohm	DC500V 40 to 60%RH
	Floating Capacitance	Cf	----	0.6	1.0	pF	V=0, f=1MHz
	Response Time(Rise)	tr	----	5	20	us	VCE=2V, IC=2mA, RL=100ohm
	Response Time (Fall)	tf	----	4	20	us	

Mini-flat Package General Purpose Photo Couple

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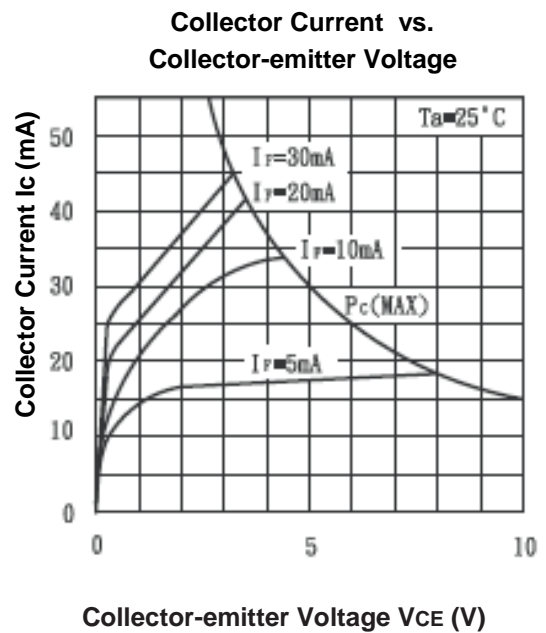
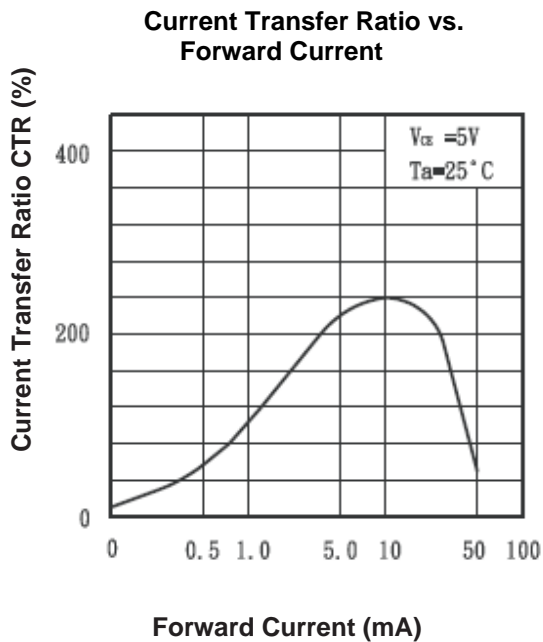
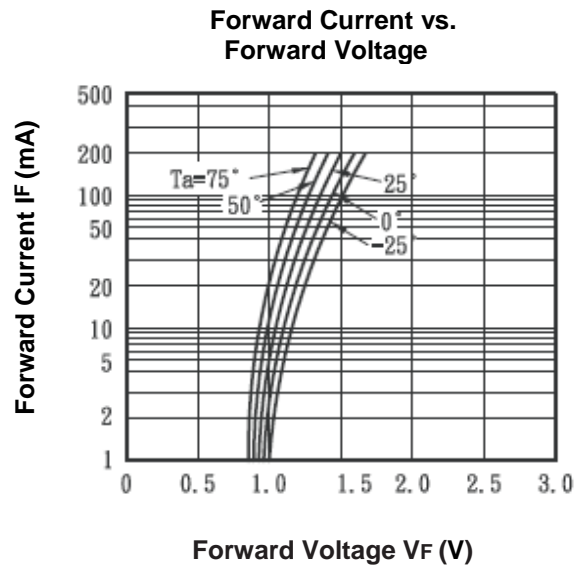
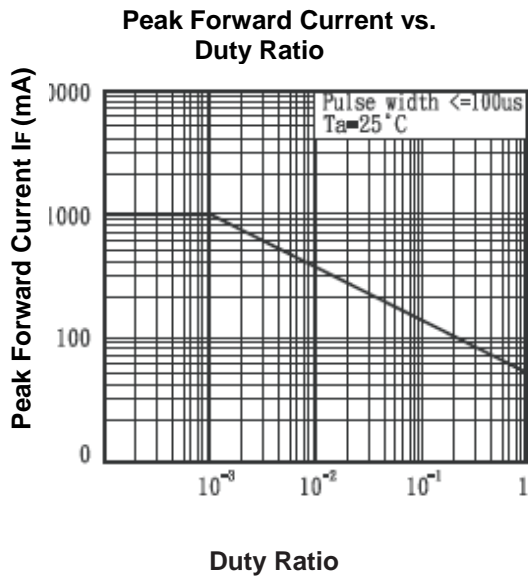
Typical Electro-Optical Characteristics Curves



Mini-flat Package General Purpose Photo Couple

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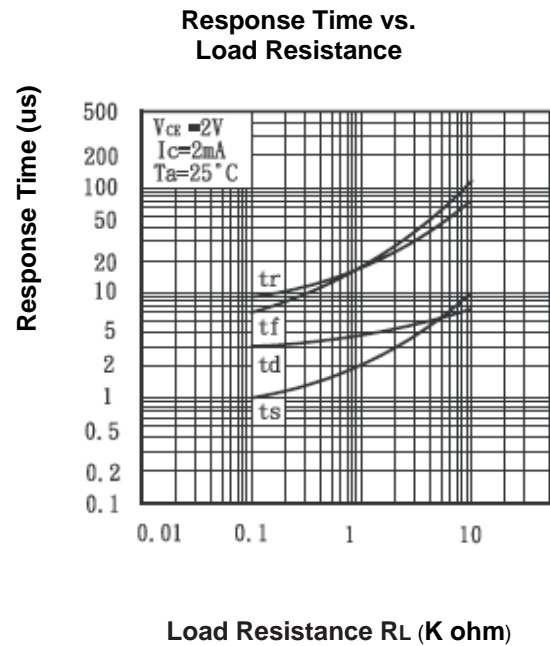
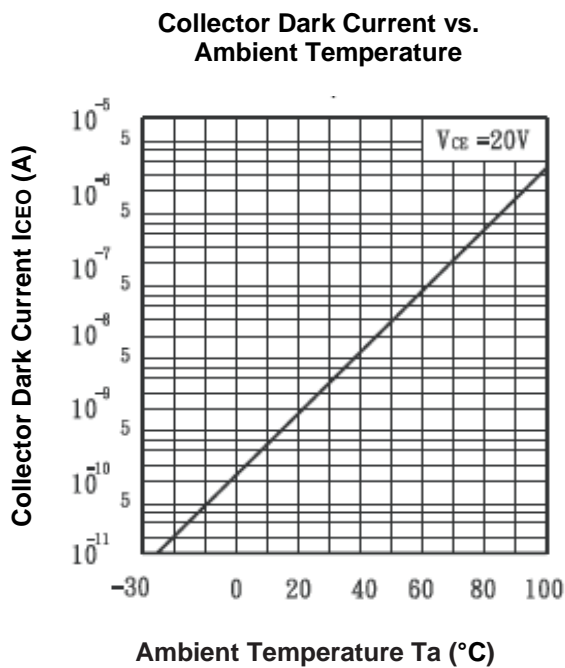
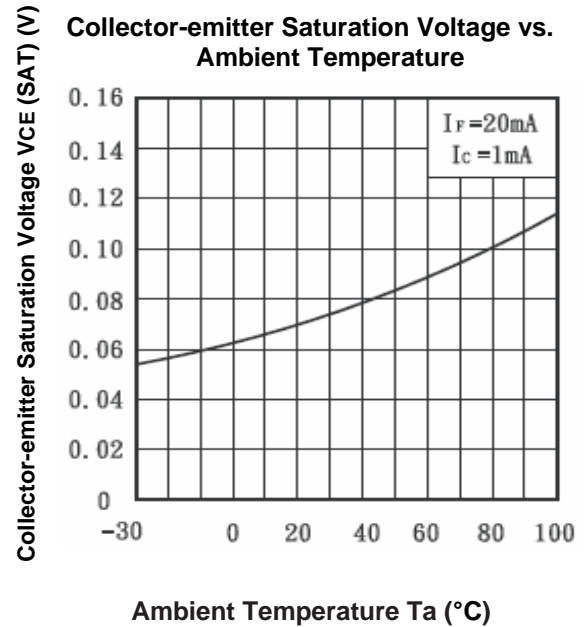
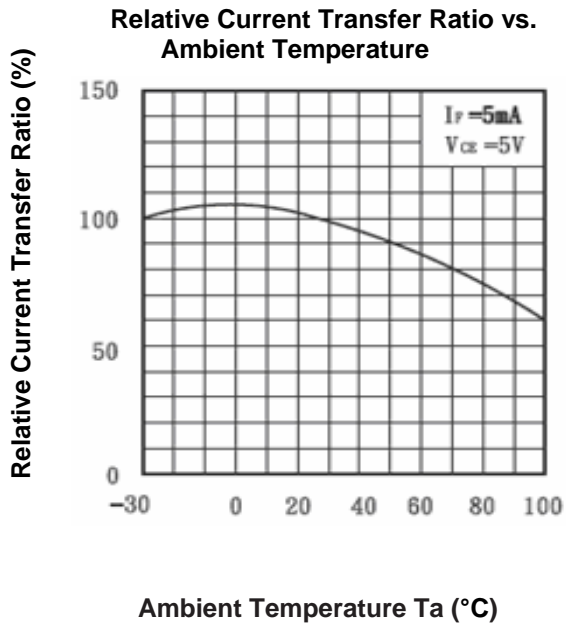
Typical Electro-Optical Characteristics Curves



Mini-flat Package General Purpose Photo Couple

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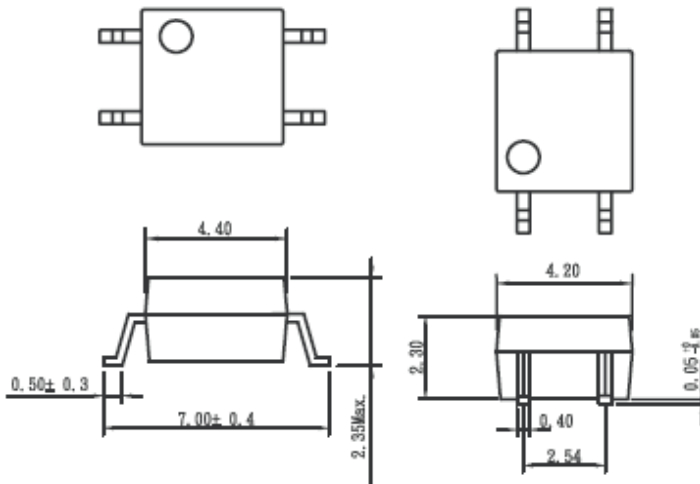
Typical Electro-Optical Characteristics Curves



Mini-flat Package General Purpose Photo Couple

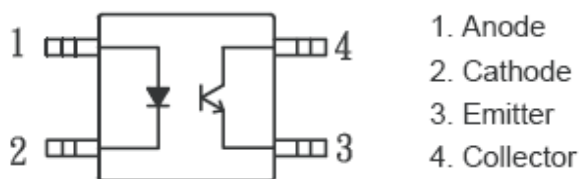
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Package Dimensions



- Note:** 1. Dimensions are in millimeters
2. Tolerances unless dimensions $\pm 0.2\text{mm}$, $t=0.254 \pm 0.05\text{mm}$

Schematic: Top View



Mini-flat Package General Purpose Photo Couple

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