

## K201 • K202 • K204

These Photocouplers consist of two Gallium Arsenide Infrared Emitting Diodes connected in a reverse-paralled configuration for AC-input and a Silicon NPN Phototransistor per a channel.

The K201 has one channel in a 4-pin mini-flat SMD package.

The K202 has two channels in a 8-pin mini-flat SMD package.

The K204 has four channels in a 16-pin mini-flat SMD package.

### **FEATURES**

Mini-flat Package

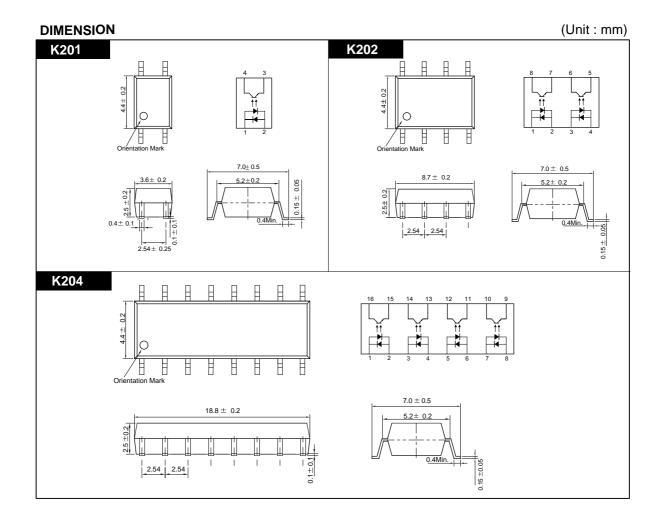
Collector-Emitter Voltage : Min.50VCurrent Transfer Ratio : 50% Min.

(at IF=  $\pm$  5mA, VF=5V)

• Electrical Isolation Voltage: AC3750Vrms

### **APPLICATIONS**

- AC Signal Input
- Interface between two circuits of difference Potentail
- Cordless Phone
- Programmable Logic Control





# K201 • K202 • K204

**MAXIMUM RATINGS** 

(Ta=25)

Parameter		Symbol	Rating	Unit		
Input	Forward Current	lF	± 50	mA		
	Peak Forward Current <sup>*1</sup>	IFP	± 1	Α		
	Power Dissipation	Pb	70	mW		
Output	Collector-Emitter Breakdown Voltage	BVceo	50	V		
	Emitter-Collector Breakdown Voltage	BVeco	6	V		
	Collector Current	Ic	50	mA		
	Collector Power Dissipation	Pc	150	mW		
Input to Output Isolation Voltage*2		Viso	AC3750	Vrms		
Storage Temperature		Tstg	-55~+125			
Operating Temperature		Topr	-30~+100			
Lead Soldering Temperature*3		Tsol	260			
Total Power Dissipation		Ptot	200	mW		

<sup>\*1.</sup> Input current with 100µs pulse width, 1% duty cycle

### **ELECTRO-OPTICAL CHARACTERISTICS**

(Ta=25 , unless otherwise noted)

Parameter		Symbol	Condition	Min.	Тур.	Max.	Unit.
Input	Forward Voltage	VF	IF= ±10mA	-	1.15	1.30	V
	Capacitance	Ст	V=0, f=1kHz	-	30	-	pF
Output	Collector-Emitter Breakdown Voltage	BVceo	Ic=0.5mA	50	1	-	V
	Emitter-Collector Breakdown Voltage	BVECO	IE=0.1mA	6	1	-	V
	Collector Dark Current	ICEO	IF=0, VCE=24V	-	1	100	nA
	Capacitance	CCE	VCE=0, f=1MHz	-	10	-	pF
Coupled	Current Transfer Ratio*4	CTR	IF= ± 5mA, VCE=5V	50	1	600	%
	Collector-Emitter Saturation Voltage	VCE(SAT)	IF= ± 5mA, IC=1mA	-	0.15	0.4	V
	Input-Output Capacitance	Сю	V=0, f=1KHz	-	1	-	pF
	Input-Output Isolation Resistance	Rio	RH=40~60%, V=500V	-	10 <sup>11</sup>	-	
	Rise Time	tr	VCE=5V, RL=100	-	4	-	μs
	Fall Time	tf	Ic=2mA	-	4	-	μs
Symmetry Ratio		CTR1/CTR2		1	-	3	

<sup>\*4.</sup> CTR=(Ic/IF) X 100 (%)

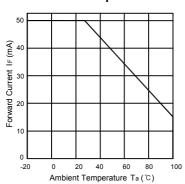
<sup>\*2.</sup> Measured at RH=40~60% for 1min

<sup>\*3. 1/16</sup> inch form case for 10sec

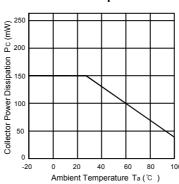


## K201 • K202 • K204

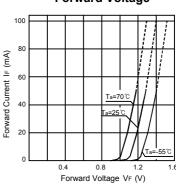
Forward Current vs. Ambient Temperature



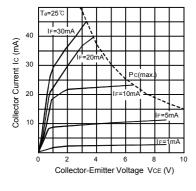
Collector Power Dissipation vs.
Ambient Temperature



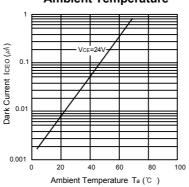
Forward Current vs. Forward Voltage



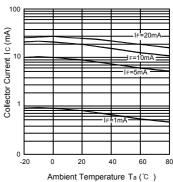
Collector Current vs.
Collector-Emitter Voltage



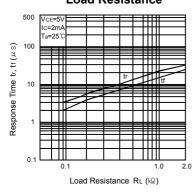
Dark Current vs.
Ambient Temperature



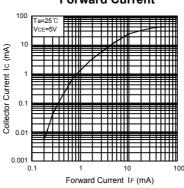
**Collector Current vs. Ambient Temperature** 



Response Time vs. Load Resistance



Collector Current vs. Forward Current



**Switching Time Test Circuit** 

