Photocoupler

K4N25 • K4N25A

These Photocouplers consist of a Gallium Arsenide Infrared Emitting Diode and a Silicon NPN Phototransistor in a 6-pin package.

FEATURES

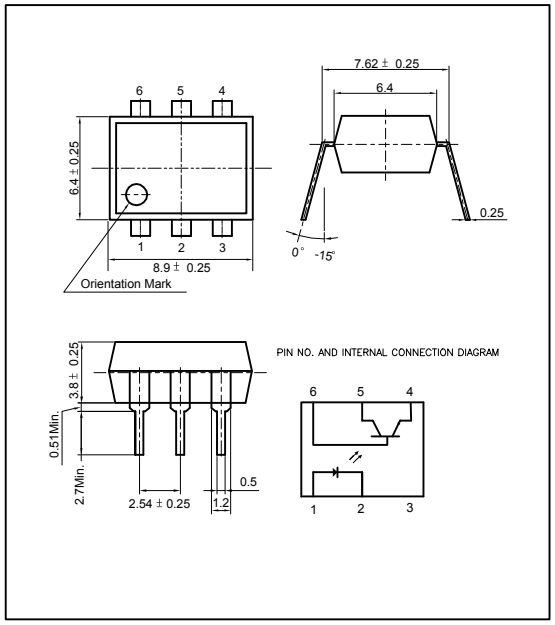
- Switching Time - Typ. 3μs
- Collector-Emitter Voltage : Min.30V
- Current Transfer Ratio : Typ.100% (at I_F=10mA, V_{CE}=10V)
- Electrical Isolation Voltage : AC2500V_{rms}
- UL Recognized File No. E107486

APPLICATIONS

- Interface between two circuits of different potential
- Vending Machine, Voltage Regulator
- Traffic Controller System
- Programmable Controller

DIMENSION

(Unit : mm)



MAXIMUM RATINGS

(Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	80	mA
	Reverse Voltage	V_R	5	V
	Peak Forward Current *1	I_{FP}	3	A
	Power Dissipation	P_D	70	mW
Output	Collector-Emitter Breakdown Voltage	BV_{CEO}	35 *4	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	6	V
	Collector-Base Breakdown Voltage	BV_{ECO}	70	V
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	150	mW
Input to Output Isolation Voltage *2		V_{iso}	AC2500	V_{rms}
Storage Temperature		T_{stg}	-55~+125	℃
Operating Temperature		T_{opr}	-30~+100	℃
Lead Soldering Temperature *3		T_{sol}	260	℃
Total Power Dissipation		P_{tot}	200	mW

*1. Input current with 100μs pulse width, 1% duty cycle

*2. Measured at RH=40~60% for 1min

*3. 1/16 inch form case for 10sec

*4. Customer Option

K4N25 • K4N25A

ELECTRO-OPTICAL CHARACTERISTICS

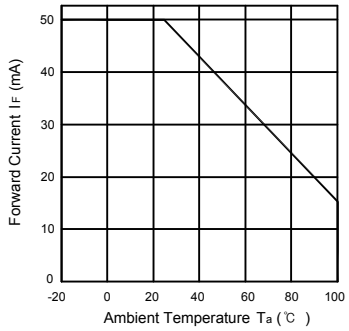
(Ta=25℃ , unless otherwise noted)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit.
Input	Forward Voltage	V_F	I_F=10mA	-	1.15	1.30	V
	Reverse Current	I_R	V_R=5V	-	-	10	㎂
	Capacitance	C_T	V=0, f=1MHz	-	30	-	pF
Output	Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA	35	-	-	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E=0.1mA	6	-	-	V
	Collector-Base Breakdown Voltage	BV_{CBO}	I_C=0.1mA	70	-	-	V
	Collector Dark Current	I_{CEO}	I_F=0, V_{CE}=10V	-	-	100	nA
	Capacitance	C_{CE}	V_{CE}=0, f=1MHz	-	10	-	pF
Coupled	Current Transfer Ratio[*5]	CTR	I_F=10mA, V_{CE}=10V	20	-	-	%
	Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_F=50mA, I_C=1mA	-	0.15	0.4	V
	Input-Output Capacitance	C_{IO}	V=0, f=1MHz	-	1	-	pF
	Input-Output Isolation Resistance	R_{IO}	RH=40~60%, V=500V	-	10^{11}	-	Ω
	Rise Time	tr	V_{CE}=5V, R_L=100Ω	-	3	-	㎲
	Fall Time	tf	I_C=2mA	-	3	-	㎲

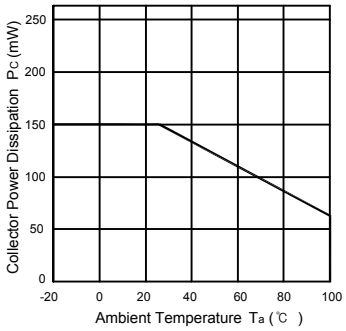
*5. CTR=(I_C/I_F) X 100 (%)

K4N25 • K4N25A

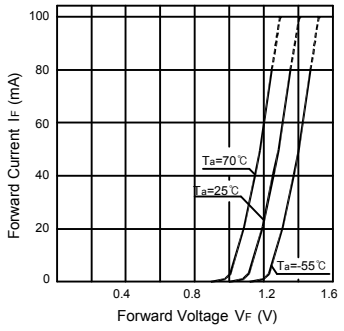
Forward Current vs. Ambient Temperature



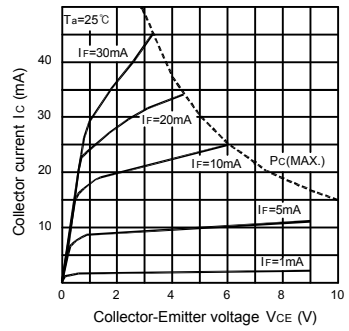
Collector Power Dissipation vs. Ambient Temperature



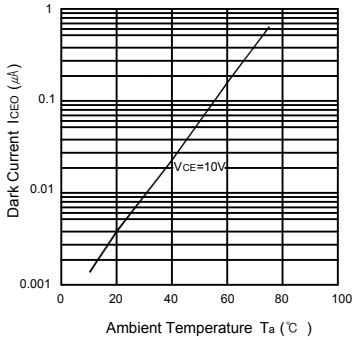
Forward Current vs. Forward Voltage



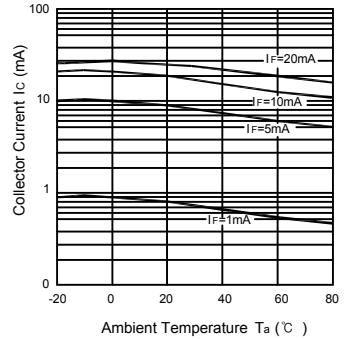
Collector Current vs. Collector-Emitter Voltage



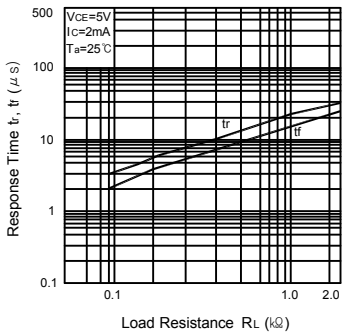
Dark Current vs. Ambient Temperature



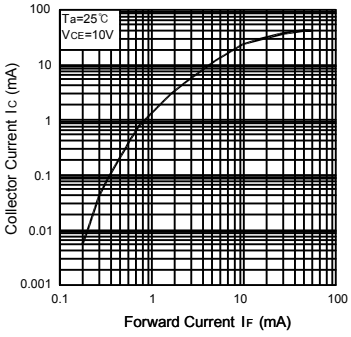
Collector Current vs. Ambient Temperature



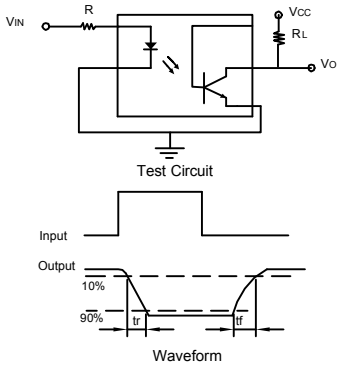
Response Time vs. Load Resistance



Collector Current vs. Forward Current



Switching Time Test Circuit



littlediode
COMPONENTS FOR ALL

Littlediode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.