PHOTOCOUPLERS

PC-17K1,2,4

PC-17K1, 2, 4, photocoupler, is an optically coupled pair employing a GaAs IRED and a silicon NPN phototransistor. PC-17K2 offers two isolated channels and PC-17K4 offers four isolated channels per package.

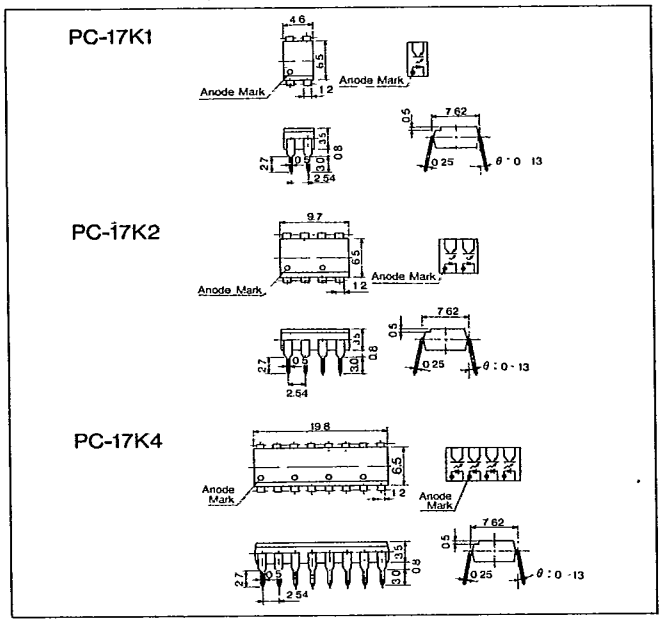
FEATURES

- Fast switching speed.
- 5000volt isolation voltage.
- 50% minimum current transfer ratio.
- Industry standard Dual In-Line package.
- UL recognized file No. E107486.

APPLICATIONS

- Computer terminals
- System appliances
- Signal transmission between circuits of different potentials.
- Cordless-phone, Key-phone, Telephone answering system.

DIMENSIONS (Unit: mm)



MAXIMUM RATINGS

(Ta=25°C)

Item		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Pulse forward current*1	I_{FP}	1	A
	Reverse voltage	V_R	5	V
Output	C-E voltage	V_{CEO}	35	V
	E-C voltage	V_{ECO}	5	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	150	mW
Operating temp.		Topr.	−30～+85	°C
Storage temp.		Tstg.	−55～+100	°C
Power dissipation		P_D	200	mW
Isolation voltage*2		Viso	5000	Vrms

*1 100μsec., 100Hz *2 AC/One minute, R.H.=40～60%

ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25°C)

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward voltage	V_F	I_F=10mA	1.0	1.15	1.3	V
	Reverse current	I_R	V_R=5V			10	μA
	Capacitance	Ct	V=0,f=1MHz		30		pF
Output	C-E breakdown voltage	$V_{(BR)CEO}$	I_C=0.5mA	35			V
	E-C breakdown voltage	$V_{(BR)ECO}$	I_E=0.1mA	5			V
	Collector dark current	I_{CEO}	I_F=0,V_{CE}=24V		10	100	nA
Coupled	Current transfer ratio*1	CTR	I_F=5mA,V_{CE}=5V	50		600	%
	C-E saturation voltage	$V_{CE(sat)}$	I_F=5mA,I_C=1mA		0.1	0.4	V
	Coupling capacitance	Cs	V=0,f=1MHz		1.0		pF
	Isolation resistance	Rs	R.H.=40～60%,V=1kVDC		10^{11}		Ω
	Rise time,Fall time	tr,tf	V_{CE}=5V,R_L=100Ω,I_C=2mA		6		μsec.

*1 CTR(%)=$\frac{I_C}{I_F}$×100

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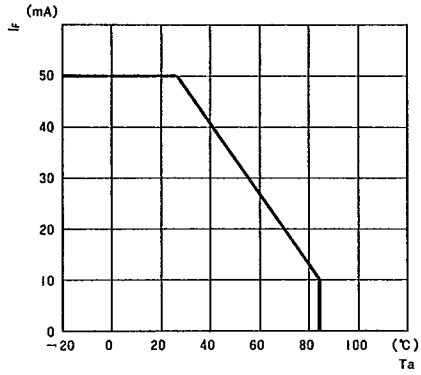
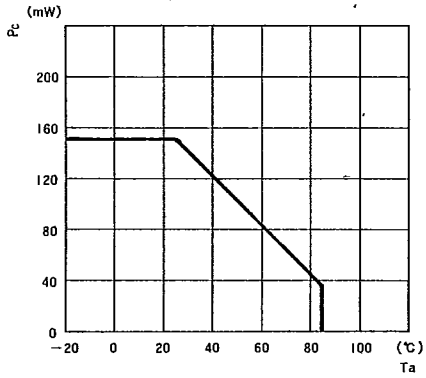
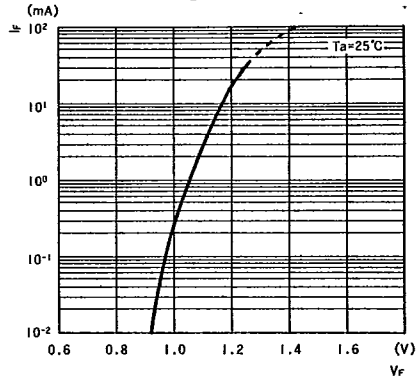
■Forward current vs Ambient temp.



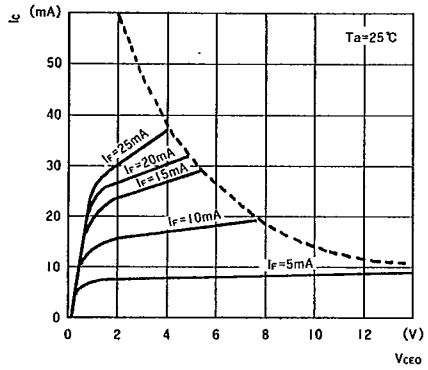
■Collector power dissipation vs Ambient temp.



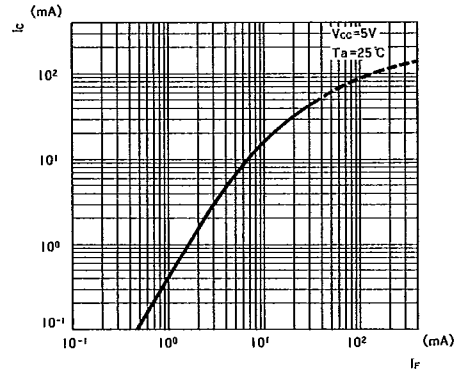
■Forward current vs Forward voltage.



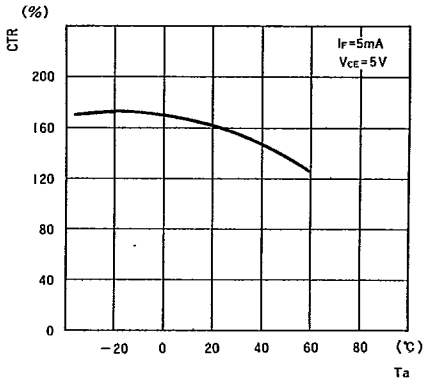
■Collector current vs Collector-Emitter voltage.



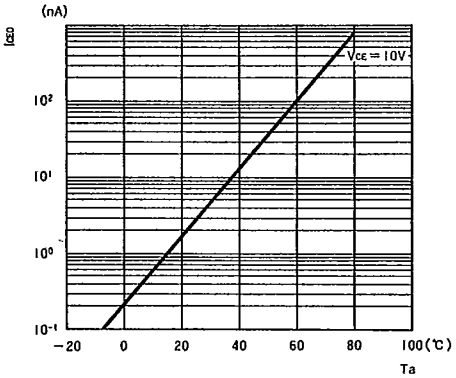
■Collector current vs Forward current.



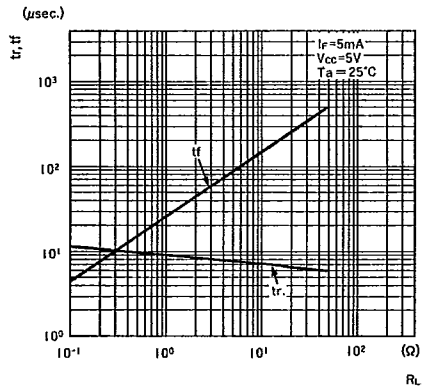
■Current transfer ratio vs Forward current.



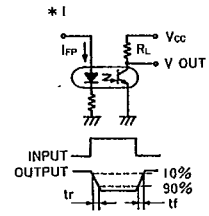
■Dark current vs Ambient temp.



■Switching characteristics. *1



*1



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