cosmo

High Reliability Photocoupler KPC815

UL 1577 (File No.E169586) **VDE** EN60747-5-2 /EN60950 / EN60065 (File No.40005500)

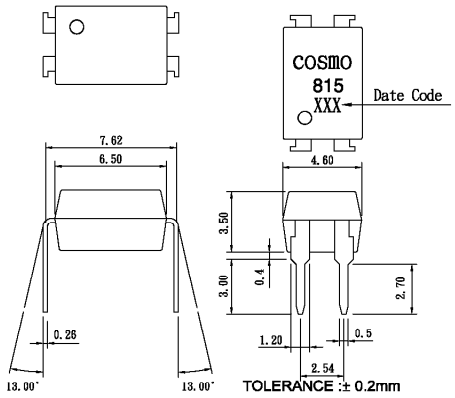
Features

1. High current transfer ratio
   (CTR:MIN.600% at IF=1mA, Vce=2V)
2. High isolation voltage between input and output
   (Viso:5000Vrms).
3. Compact dual-in-line package.

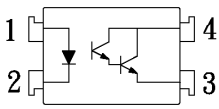
Applications

1. System appliances, measuring instruments.
2. Industrial robots.
3. Copiers, automatic vending machines.
4. Signal transmission between circuits of different potentials and impedances.

Outside Dimension : Unit (mm)



Schematic : Top View



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

Absolute Maximum Ratings

(Ta=25°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}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	80	mA
	Collector power dissipation	P_C	150	mW
Total power dissipation		Ptot	200	mW
Isolation voltage 1 minute		Viso	5000	Vrms
Operating temperature		Topr	-30 to +100	°C
Storage temperature		Tstg	-55 to +125	°C
Soldering temperature 10 second		Tsol	260	°C

Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	I_F=20mA	—	1.2	1.4	V
	Peak forward voltage	V_{FM}	I_{FM}=0.5A	—	—	3.0	V
	Reverse current	I_R	V_R=4V	—	—	10	μA
	Terminal capacitance	Ct	V=0, f=1kHz	—	30	250	pF
Output	Collector dark current	I_{CEO}	V_{CE}=10V, I_F=0	—	—	1.0	μA
Transfer charac-teristics	Current transfer ratio	CTR	I_F=1mA, V_{CE}=2V	600	—	7500	%
	Collector-emitter saturation voltage	V_{CE}(sat)	I_F=20mA, I_C=5mA	—	0.8	1.0	V
	Isolation resistance	Riso	DC500V, 40 to 60% RH	$5X10^{10}$	—	—	ohm
	Floating capacitance	Cf	V=0, f=1MHZ	—	0.6	1.0	pF
	Cut-off frequency	fc	V_{CC}=2V, I_C=20mA, R_L=100ohm	1	6	—	kHz
	Response time (Rise)	tr	V_{CE}=2V, I_C=20mA, R_L=100ohm	—	80	300	μs
	Response time (Fall)	tf		—	72	250	μs

Fig.1 Forward Current vs. Ambient Temperature

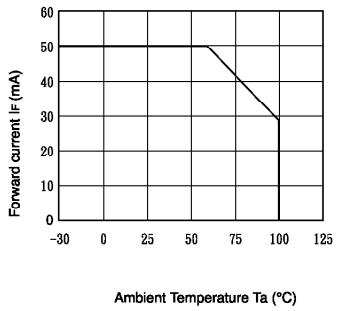


Fig.2 Collector Power Dissipation vs. Ambient Temperature

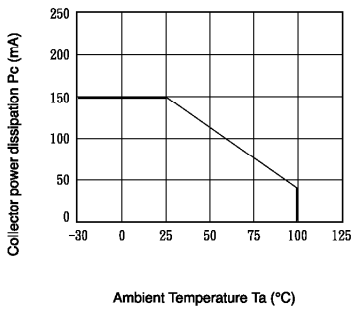


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

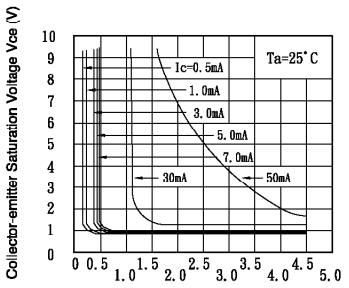


Fig.4 Forward Current vs. Forward Voltage

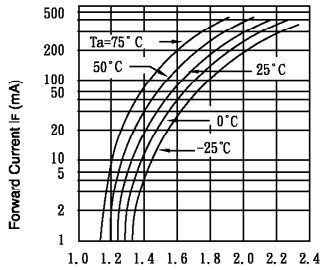


Fig.5 Collector Transfer Ratio vs. Forward Current

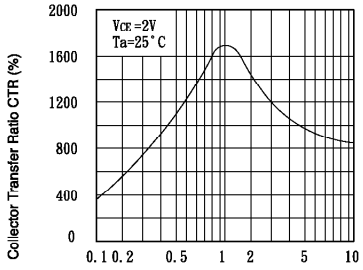


Fig.6 Collector Current vs. Collector-emitter Voltage

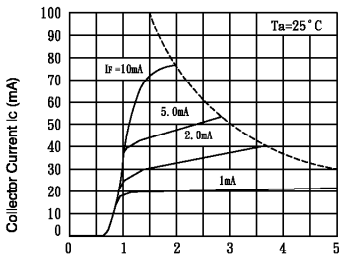


Fig.7 Relative Transfer Ratio vs. Ambient Temperature

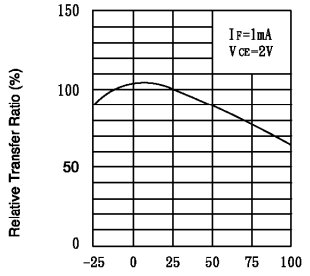


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

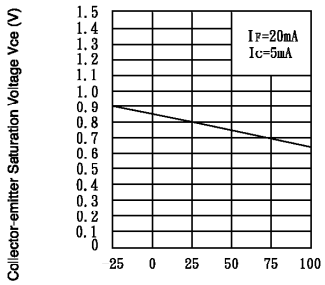


Fig.9 Collector Dark Current vs. Ambient Temperature

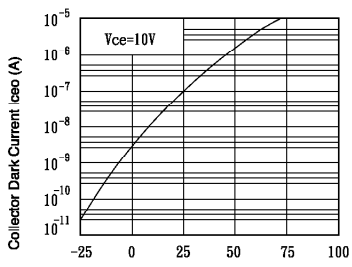


Fig.10 Response Time vs. Load Resistance