High Reliability Photocoupler KPC815

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

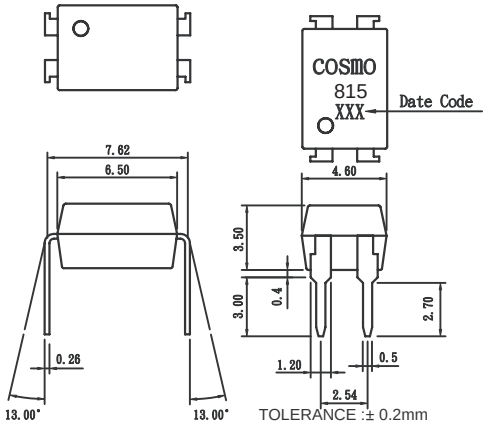
Features

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.

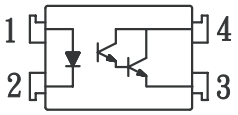
Applications

1. System appliances, measuring instrruments.
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℃)

Parameter		Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	Peak forward current	IFM	1	A
	Reverse voltage	VR	6	V
	Power dissipation	PD	70	mW
Output	Collector-emitter voltage	VCEO	35	V
	Emitter-collector voltage	VECO	6	V
	Collector current	IC	80	mA
	Collector power dissipation	PC	150	mW
Total power dissipation		Ptot	200	mW
Isolation voltage 1 minute		Viso	5000	Vrms
Operating temperature		Topr	-30 to +100	℃
Storage temperature		Tstg	-55 to +125	℃
Soldering temperature 10 second		Tsol	260	℃

Electro-optical Characteristics

(Ta=25℃)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	VF	IF=20mA		1.2	1.4	V
	Peak forward voltage	VFM	IFM=0.5A			3.0	V
	Reverse current	IR	IR=4V			10	μA
	Terminal capacitance	Ct	V=0, f=1kHz		30	250	pF
Output	Collector dark current	ICEO	VCE=10V, IF=0			1.0	μA
Transfer charac-teristics	Current transfer ratio	CTR	IF=1mA, VCE=2V	600		7500	%
	Collector-emitter saturation voltage	VCE(sat)	IF=20mA, IC=5mA		0.8	1.0	V
	Isolation resistance	Riso	DC500V, 40 to 60% RH	$5X10^{10}$	旀		ohm
	Floating capacitance	Cf	V=0, f=1MHZ		0.6	1.0	pF
	Cut-off frequency	fc	VCC=2V, IC=20mA, RL=100ohm	1	6		kHz
	Respone time (Rise)	tr	VCE=2V, IC=20mA, RL=100ohm		80	300	μs
	Respone time (Fall)	tf			72	250	μs

Fig.1 Forward Current vs. Ambient Temperature

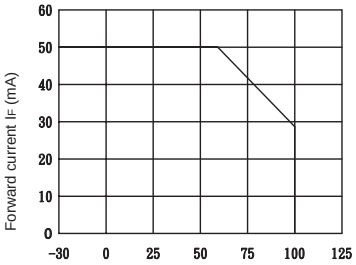


Fig.2 Collector Power Dissipation vs. Ambient Temperature

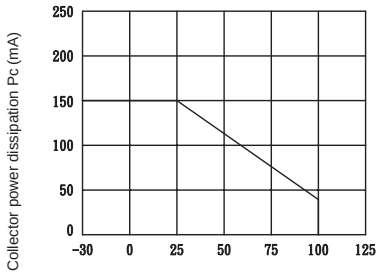


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

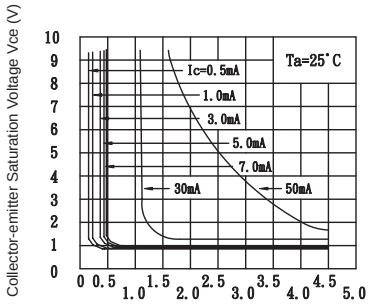


Fig.4 Forward Current vs. Forward Voltage

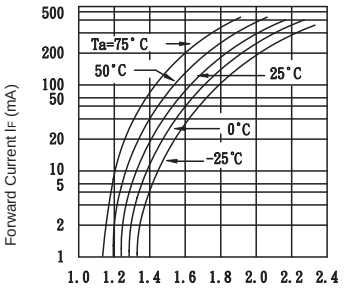


Fig.5 Collector Transfer Ratio vs. Forward Current

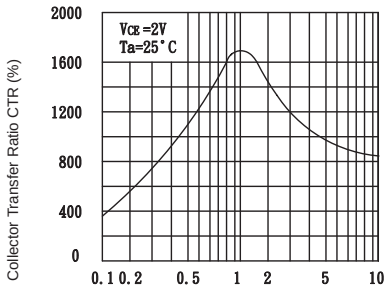


Fig.6 Collector Current vs. Collector-emitter Voltage

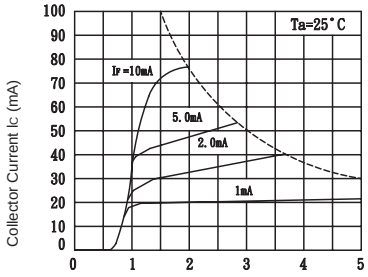


Fig.7 Relative Transfer Ratio vs. Ambient Temperature

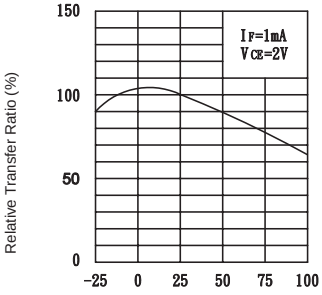


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

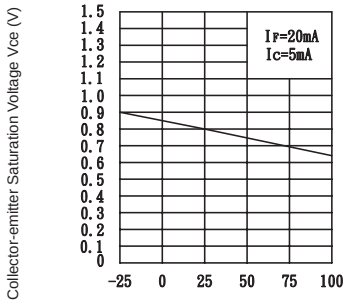


Fig.9 Collector Dark Current vs. Ambient Temperature

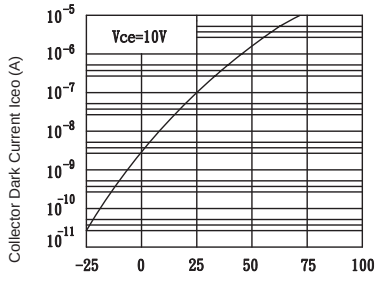


Fig.10 Response Time vs. Load Resistance