PC512

※VDE0884 approved type is also available

European Safety Standard Approved Long Creepage Distance Type **Photocoupler**

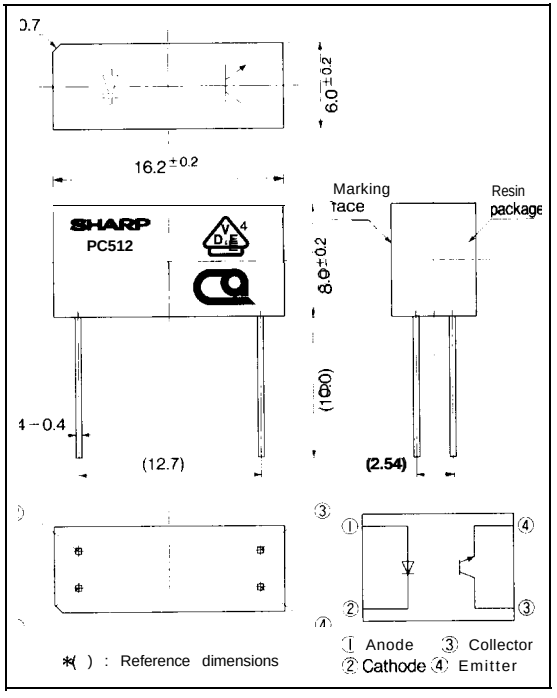
■ Features

1. Conform to European Safety Stndards
   (Refer to page 38)
   UL file No. E64380
   Approved by VDE (DIN VDE0884 : No. 77296)
   Approved by BSI (BS915 : No. 7413,
   BS7002 : No. 7413)
   Approved by SEMKO (No. 9303001)
   Approved by DEMKO (108025)
   Approved by EI (155031-01)
   Approved by CSA (CA95323)
2. Long creepage distance type
   (Creepage distance : 11.5mm)
3. Compact
   (Capacitance : 20% smaller than PC511)
4. High isolation voltage (V_{iso} : 5 000 V_{rms})

■ Applications

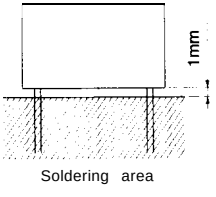
1. Power supplies

■ Outline Dimensions (Unit : mm)



■ Absolute Maximum **Ratings** (Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1 Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	v
	Power dissipation	P	75	mW
output	Collector -emitter voltage	V_{CEO}	35	v
	Emitter -collector voltage	V_{ECO}	6	v
	Collector current	I_C	20	mA
	Collector power dissipation	P_C	75	mW
*isolation voltage		V_{iso}	5	kV_{rms}
Operating temperature		T_{opr}	−25 to +85	℃
Storage temperature		T_{stg}	−40 to +100	℃
*3 Soldering temperature		T_{sol}	260	℃



*1 Pulse widths 100 μs Duty ratio :0.001
*2 AC for 1minute, 40 to 60%RH
*3 For MAX. 10 seconds at the position of 1 mm from the edge of resin package

■ Electro-optical Characteristics

(Ta=25℃)

	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	4	V
	Reverse current		I_R	V_R=3V			in	μA
	Terminal capacitance		C_t	V=0, f=1kHz	−	50	250	pF
output	Collector dark current		I_{CEO}	V_{CE}=20V, I_F=0		−	100	nA
	Collector -emitter breakdown voltage		BV_{CEO}	I_C=0.1mA, I_F=0	35	−	−	V
	Emitter-collector breakdown voltage		BV_{ECO}	I_E=10μA, I_F=0	6	−	−	V
Transfer characteristics	Collector current		I_C	I_F=20mA, V_{CE} = 5V	2	−	20	mA
	Collector -emitter saturation voltage		$V_{CE(sat)}$	I_F=40mA, I_C= 1mA	·	−	0.4	V
	Isolation resistance		R_{iso}	DC500V, 40 to 60%RH	10^{12}	−	−	Ω
	Cut-off frequency		f_c	V_{CE}=2V, I_C=2mA R_L = 100Ω, −3dB	12	80		kHz
	Response time	Rise time	t_r	V_{CE}=2V, I_C=2mA		3	20	μs
		Fall time	t_f	R_L=100Ω	−	4	30	μs

Fig. 1 Forward **Current vs. Ambient Temperature**

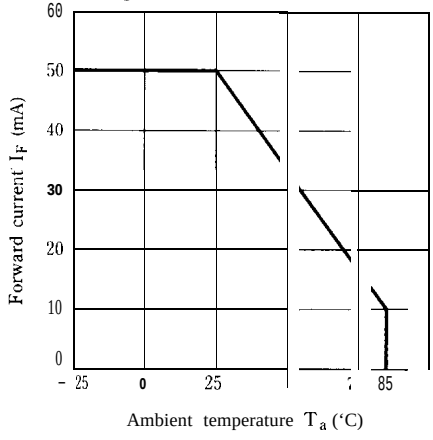


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

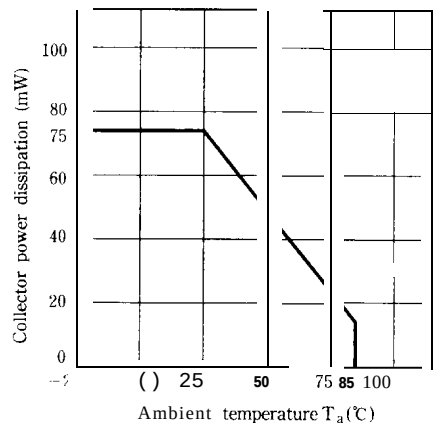


Fig. 3 Peak Forward Current vs. Duty Ratio

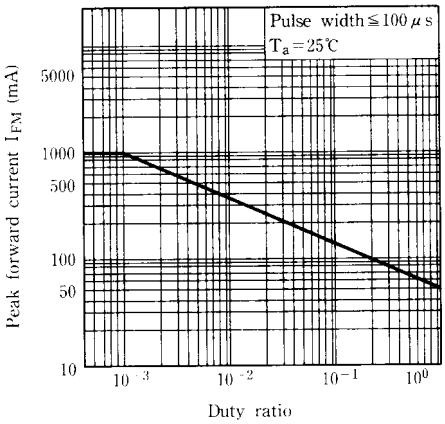


Fig. 4 Forward Current vs. Forward Voltage

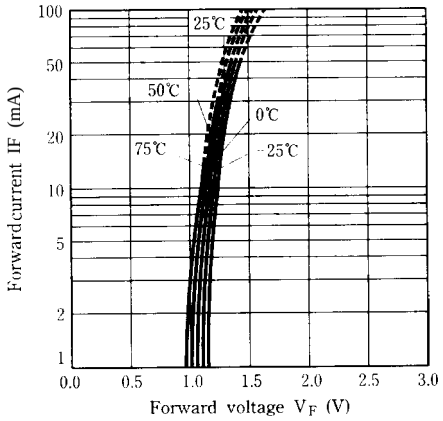


Fig. 5 Current Tranfer Ratio vs. Forward Current

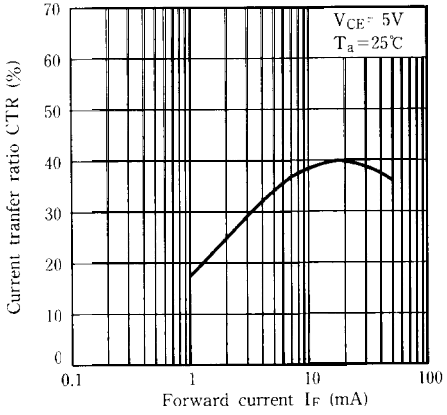


Fig. 6 Collector Current vs. Collector -emitter Voltage

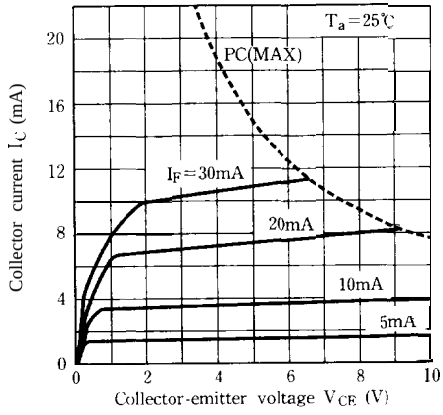


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

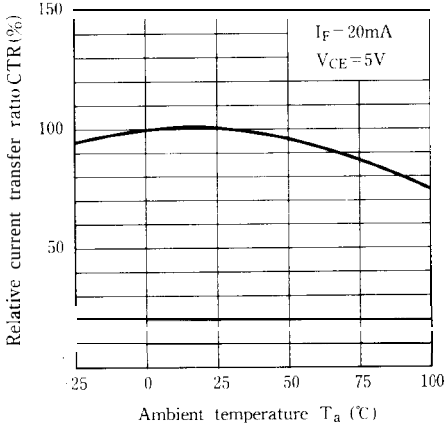


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

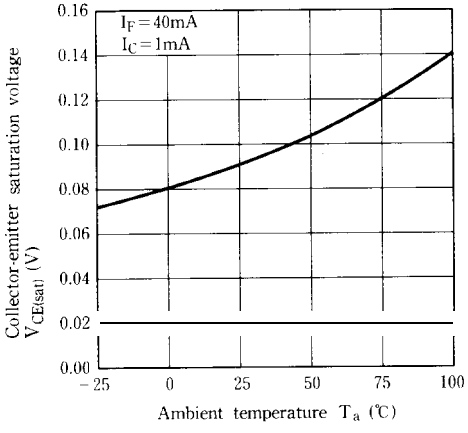


Fig. 9 Collector Dark Current vs. Ambient Temperature

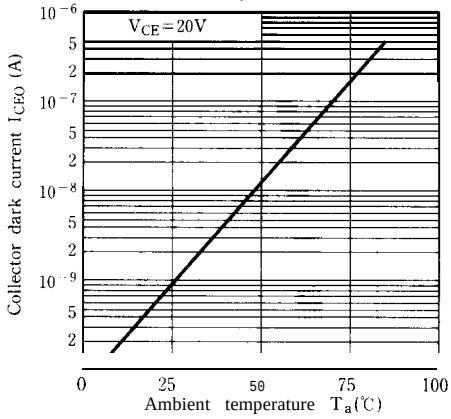


Fig.10 Response Time vs. Load Resistance

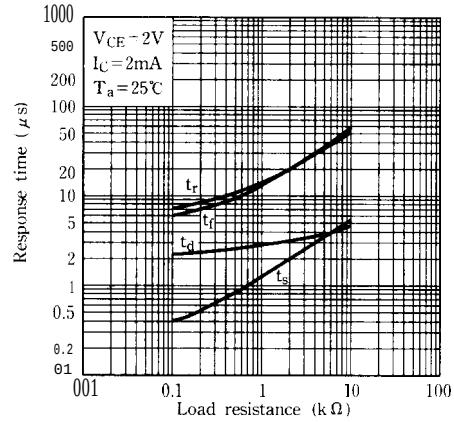


Fig. 1 Frequency Response

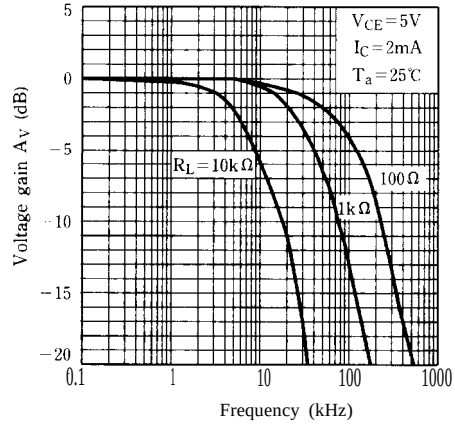
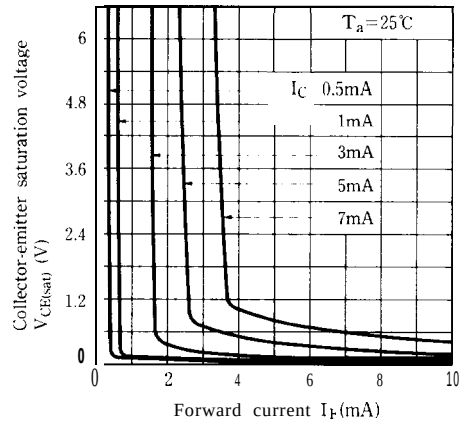


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



● Pleaw refer to the chapter “Precautions for Use” (Page 78 to 93).