PC512

European Safety Standard Approved Long Creepage Distance Type Photocoupler

■ Features

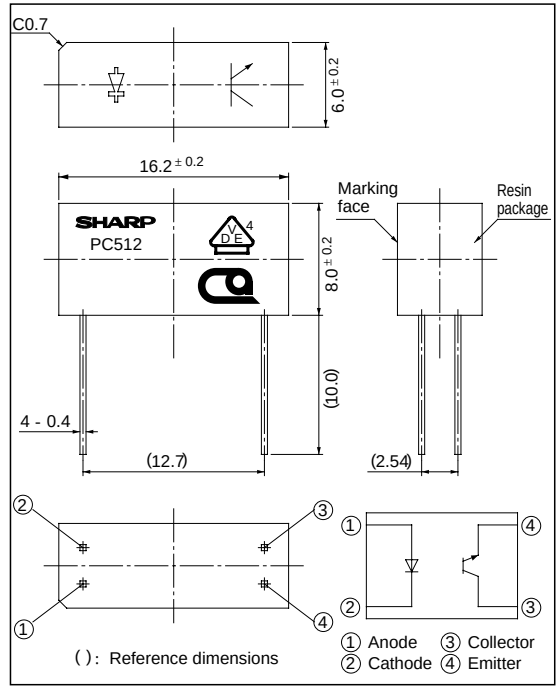
1. Conform to European Safety Stndards

   UL file No. E64380
   Approved by VDE（DIN VDE0884：No. 77296）
   Approved by BSI
   （BS EN60065 IEC65 Test Leaf lets land 5
   BS EN60950 IEC950 EN41003 Test Leaflets land 5）
   Approved by SEMKO（No. 9303001）
   Approved by DEMKO（108025 ）
   Approved by EI（155031-01 ）
   Approved by CSA（CA95323 or CA76261）
2. Long creepage distance type
   （Creepage distance：11.5mm or more）
3. Compact
4. High isolation voltage（V_{iso}：5 000V_{rms}）

■ Applications

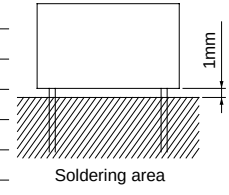
1. Power supplies

■ Outline Dimensions （Unit： mm）



■ Absolute Maximum Ratings （Ta = 25˚C）

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
*2 Isolation voltage		V_{iso}	5	kV$_{rms}$
Operating temperature		T_{opr}	- 25 to + 85	˚C
Storage temperature		T_{stg}	- 40 to + 100	˚C
*3 Soldering temperature		T_{sol}	260	˚C



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

" In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device."

■ 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	4	V
	Reverse current		I_R	V_R = 3V	-	-	10	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

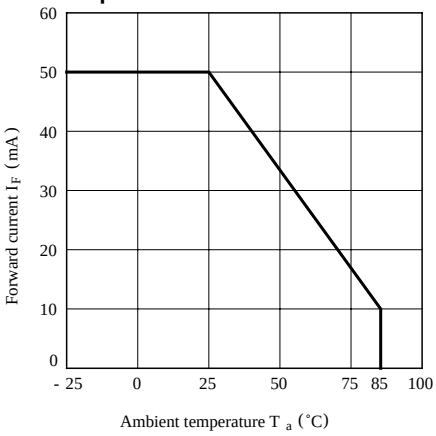


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

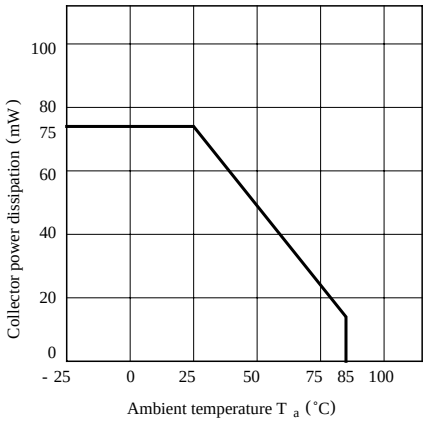


Fig. 3 Peak Forward Current vs. Duty Ratio

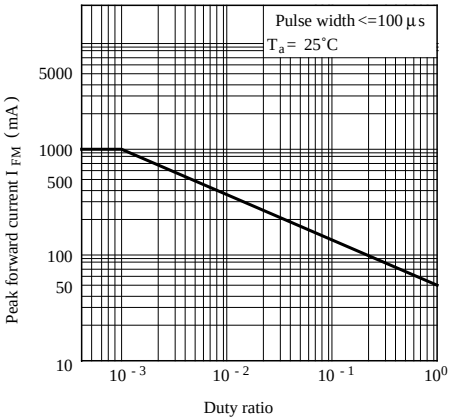


Fig. 4 Forward Current vs. Forward Voltage

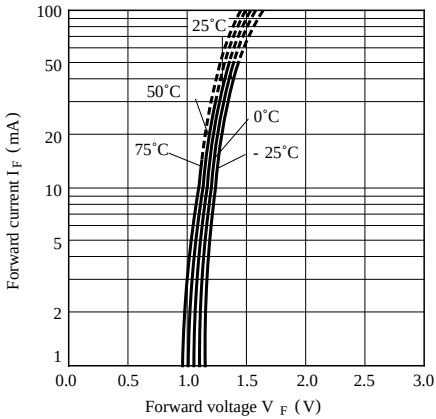


Fig. 5 Current Tranfer Ratio vs. Forward Current

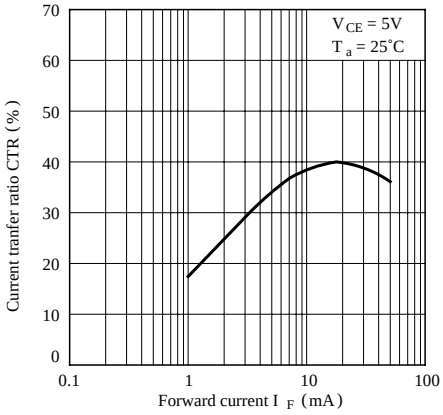


Fig. 6 Collector Current vs. Collector -emitter Voltage

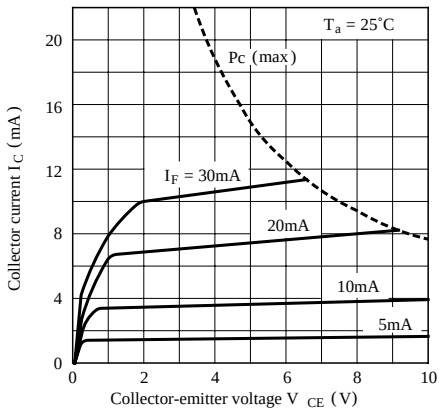


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

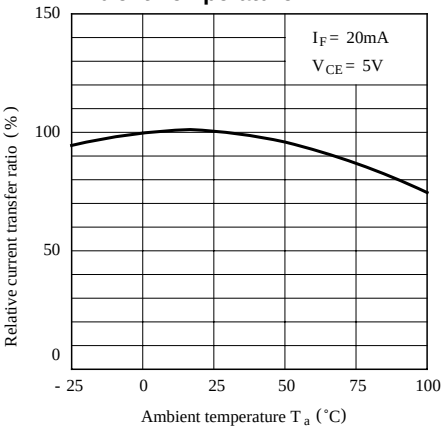


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

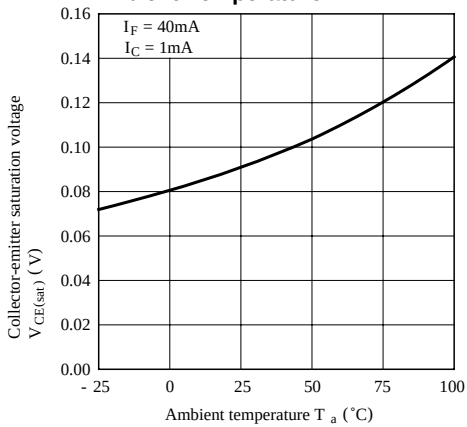


Fig. 9 Collector Dark Current vs. Ambient Temperature

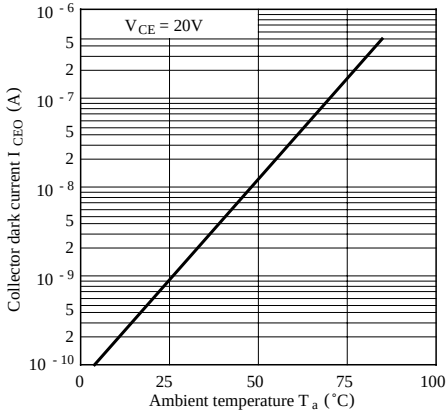


Fig.10 Response Time vs. Load Resistance

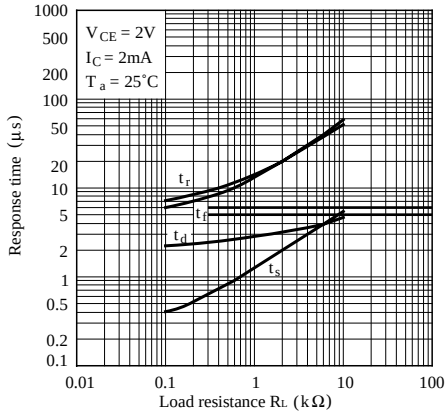


Fig.11 Frequency Response

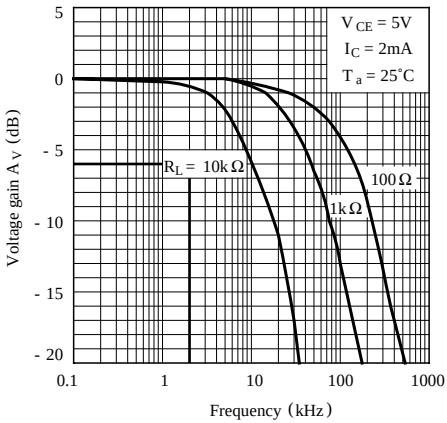
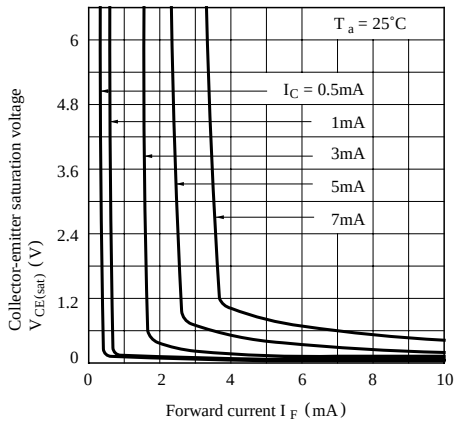


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



● Please refer to the chapter "Precautions for Use"