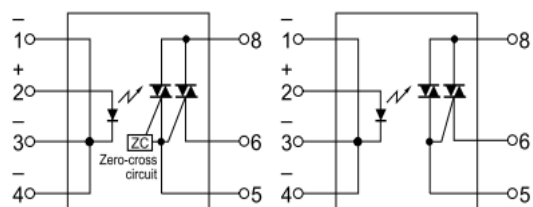
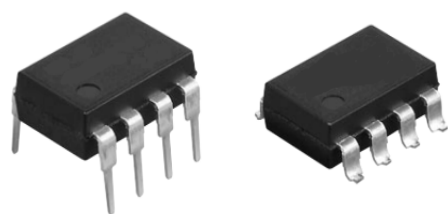




# 可控硅输出光继电器 Triac Output Photo Relay

地址：厦门市思明区前埔路502号  
Add: No.502, Qianpu Road, Siming District, Xiamen China



## 特点 Features:

1. 紧凑型DIP封装，提供理想的交流负载控制。 Compact DIP type SSR that's ideal for AC load control.
2. 支持0.3 A, 0.6 A, 0.9 A 和1.2 A 通态有效电流。 Supports 0.3 A, 0.6 A, 0.9 A and 1.2 A ON-state RMS currents.
3. 可以支持110V和220V交流负载。 Only ours handles both 110 and 220 V AC loads.
4. 高介电强度(5000V AC) (输入端和输出端之间) High dielectric strength: 5,000 V AC (between input and output)
5. 两种类型：过零型和非过零型。 Two types available: Zero-cross type and Non-zero-cross type.

## 典型应用 Typical Applications:

1. 家电。 Home appliances.  
如空调，微波炉、洗衣机、个人卫生系统，冰箱、风扇加热器、感应加热锅，热水器，等等。  
air conditioners, microwave ovens, washing machines, personal hygiene systems, refrigerators, fan heaters, inductive heating cooker, and water heaters, etc.
2. 工业设备市场。 Industrial equipment market.

## 产品类型 Types:

类型 Type	额定输出参数 Output rating		触发类型 Type of trigger	型号 Types		包装数量 Packing quantity	
	断态峰值电压 Peak OFF-state voltage	通态有效电流 ON-state RMS current		直插式(DIP)	表贴式(SMD)	条管 Tube	编带 Tape and reel
				条管包装 Tube	编带包装 Tape and reel		
AC	600 V	0.3 A	过零型 Zero-cross	HSCR-0213D	HSCR-0213S	50只/条管 tube; 1000只/盒 bundle; 20000只/箱 carton	900只/编带 reel; 9000只/箱 carton
		0.6 A		HSCR-1213D	HSCR-1213S		
		0.9 A		HSCR-2213D	HSCR-2213S		
		1.2 A		HSCR-3213D	HSCR-3213S		
		0.3 A	非过零型 Non-zero-cross	HSCR-0223D	HSCR-0223S		
		0.6 A		HSCR-1223D	HSCR-1223S		
		0.9 A		HSCR-2223D	HSCR-2223S		
		1.2 A		HSCR-3223D	HSCR-3223S		

## 产品参数 Rating:

1. 最大额定参数(环境温度: 25°C) Absolute maximum ratings (Ambient temperature: 25°C)

项目 Item		符号	0213	0223	1213	1223	2213	2223	3213	3223	附注
输入端 Input	LED正向电流 LED forward current	$I_F$	50 mA								
	LED反向电压 LED reverse voltage	$V_R$	6 V								
	峰值正向电流 Peak forward current	$I_{FP}$	1 A								f = 100 Hz, Duty Ratio = 0.1%
输出端 Output	重复峰值断态电压 Repetitive peak OFF-state voltage	$V_{DRM}$	600 V								
	通态有效电流 ON-state RMS current	$I_{T(RMS)}$	0.3 A	0.6 A	0.9 A	1.2 A					
	浪涌冲击电流 Non-repetitive surge current	$I_{TSM}$	3 A	6 A	9 A	12 A					50Hz 1个周期 50Hz 1 cycle
输入端-输出端隔离电压 I/O isolation		$V_{iso}$	5000 V AC								
温度界限 Temperature limits	工作 Operating	$T_{opr}$	-30 °C -- 85 °C								Non-condensing
	贮存 Storage	$T_{stg}$	-40 °C -- 125 °C								

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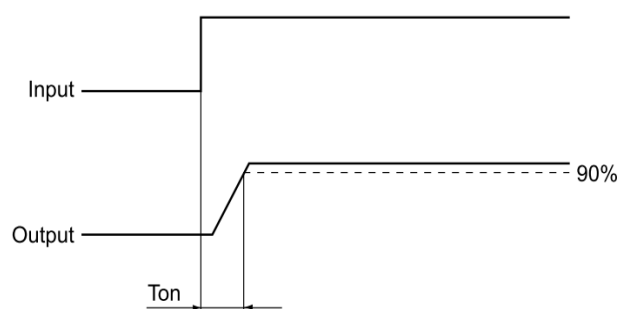
2. 光电参数 (环境温度: 25°C) Electrical characteristics (Ambient temperature: 25°C)

项目 Item		Symbol	0213	0223	1213	1223	2213	2223	3213	3223	测试条件
输入端 Input	LED正向电压 LED dropout voltage	Typical	1.16 V						$I_F = 10 \text{ mA}$		
		Maximum	1.3 V								
	LED反向电流 LED reverse current	Typical	100 nA							$V_R = 6 \text{ V}$	
		Maximum	10 $\mu\text{A}$								
输出端 Output	峰值断态漏电流 Peak OFF-state current	Typical	—						$I_F = 0 \text{ mA}$ $V_{\text{DRM}} = 600 \text{ V}$		
		Maximum	100 $\mu\text{A}$								
	峰值通态压降 Peak ON-state voltage	Typical	—						$I_F = 10 \text{ mA}$ $I_{\text{TM}} = \text{Max.}$		
		Maximum	2.5 V								
	维持电流 Holding current	Typical	—						$V_{\text{DRM}} = 600 \text{ V} \times 1/\sqrt{2}$		
		Maximum	25 mA								
断态临界电压上升率 Critical rate of rise of OFF-state voltage	Minimum	dv/dt	100 V/ $\mu\text{s}$								
传输特性 Transfer characteristics	LED触发电流 <sup>a</sup> Trigger LED current	Maximum	10 mA							$V_D = 6 \text{ V}$ $R_L = 100 \Omega$	
	过零电压 <sup>b</sup> Zero-cross voltage	Maximum	50 V			—			$I_F = 10 \text{ mA}$		
	动作时间 <sup>c</sup> Turn on time	Maximum	100 $\mu\text{s}$						$I_F = 20 \text{ mA}$ $V_D = 6 \text{ V}$ $R_L = 100 \Omega$		
	输入端-输出端绝缘电阻 I/O isolation	Minimum	$R_{\text{iso}}$	50 G $\Omega$						500 V DC	

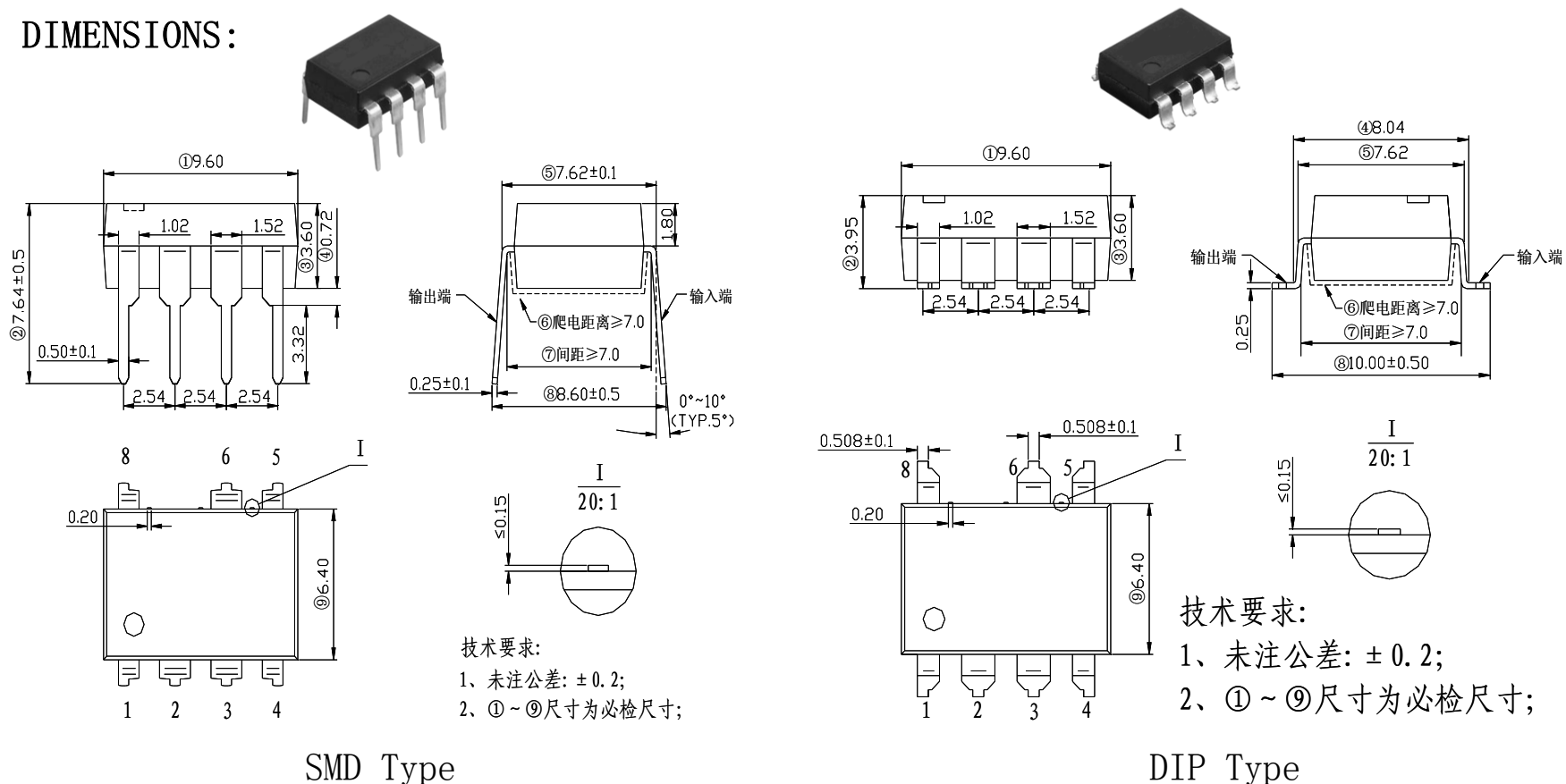
注释 Notes: <sup>a</sup> 应用中推荐LED触发电流为20mA。Recommended LED current  $I_{\text{FT}}: 20\text{mA}$ .

<sup>b</sup> 零交叉电压仅针对 Applicable part No.: HSCR-0213, HSCR-1213, HSCR-2213, HSCR-3213.

<sup>c</sup> 开通时间测试波形 Turn on time:



## 产品尺寸 DIMENSIONS:



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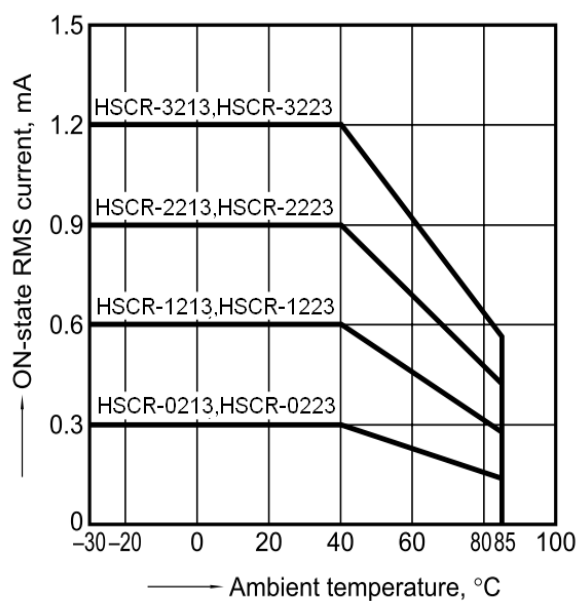
## 原理图和布线图 SCHEMATIC AND WIRING DIAGRAMS:

型号 Types	电原理图 Output configuration	触发类别 trigger	布线图 Wiring diagram
HSCR-0213		零交叉 Zero-cross	
HSCR-1213			
HSCR-2213			
HSCR-3213			
HSCR-0223		非零交叉 Non-zero-cross	
HSCR-1223			
HSCR-2223			
HSCR-3223			

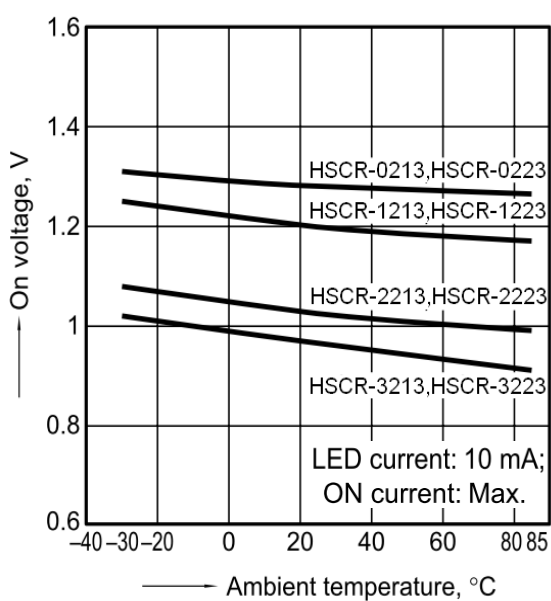
注释 Notes:  $E_1$ : 输出端电源 Power source at input side;  $I_F$ : LED触发电流 Trigger LED forward current;  $V_L$ : 负载电压 Load voltage;  $I_L$ : 负载电流 Load current.

## 特性曲线 Characteristic curve:

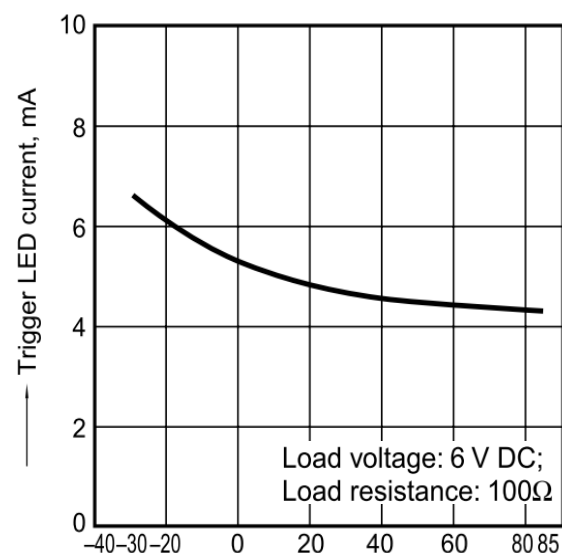
△ 通态有效电流与环境温度曲线  
ON-state RMS current vs. Ambient temperature



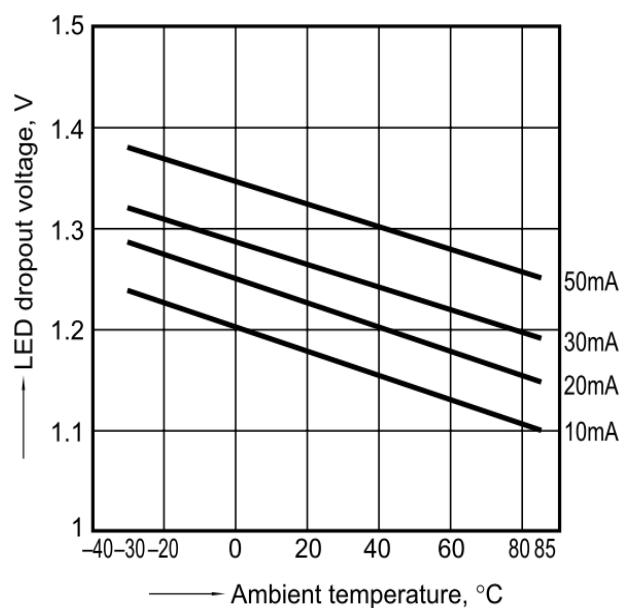
△ 通态压降与环境温度曲线  
On voltage vs. Ambient temperature



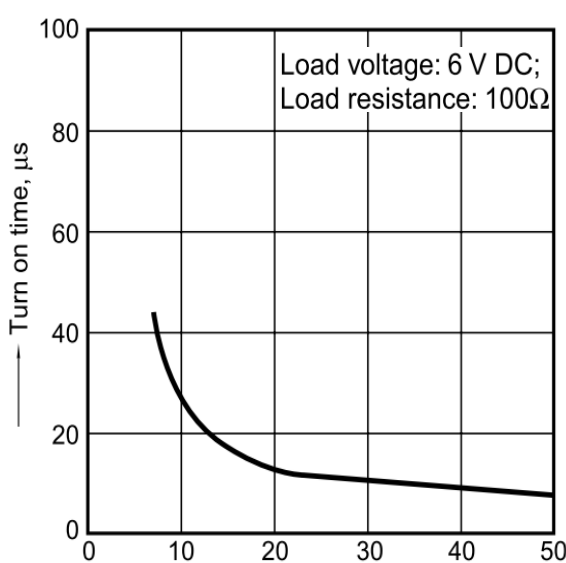
△ LED触发电流与环境温度曲线  
Trigger LED current vs. Ambient temperature



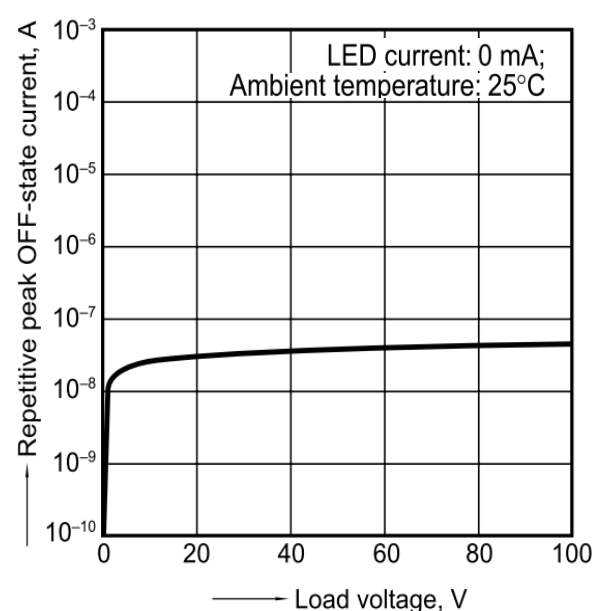
△ LED正向电压与环境温度曲线  
LED dropout voltage vs. Ambient temperature



△ 动作时间与LED电流曲线  
Turn on time vs. LED current

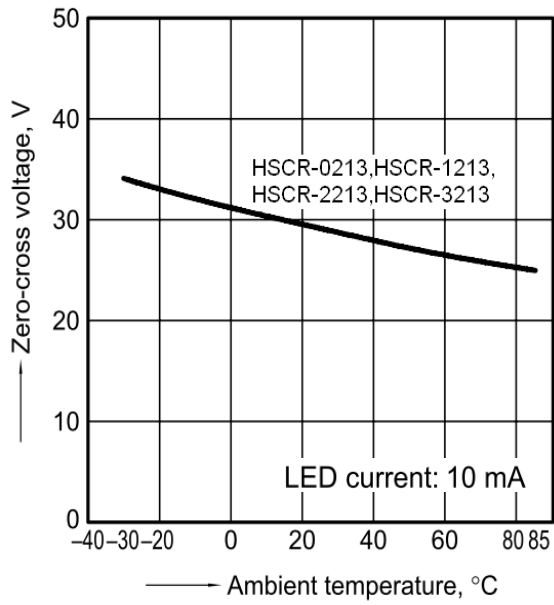


△ 峰值断态漏电流与负载电压曲线  
Peak OFF-state current vs. Load voltage



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△ 过零电压与环境温度曲线  
Zero-cross voltage vs.  
Ambient temperature



包装尺寸 The following shows the packaging format:

Type	编带尺寸 Tape dimensions	卷盘尺寸 Dimensions of paper tape reel
SMD		
DIP		