

HSA Series PCB Solid State Relay

HSA系列PCB型固态继电器

PCB Mount SSR | 3-32VDC Input
5A Output | Silicone Potting



7 Key Features | 七大核心特性

- 1. PCB 焊接安装结构**
PCB solder-mount construction
- 2. 5A / 48-380VAC 输出**
5A / 48-380VAC output
- 3. 3-32VDC 直流控制输入**
3-32VDC control input
- 4. 输入输出绝缘 $\geq 4000\text{VACrms}$**
Input-output isolation $\geq 4000\text{VACrms}$
- 5. 柔性阻燃硅胶封装**
Flexible flame-retardant silicone potting
- 6. 小体积四引脚连接**
Compact 4-pin connection
- 7. 符合 CE / EMC / RoHS 应用要求**
Supports CE / EMC / RoHS application requirements

Product Overview | 产品概述

HSA380D5-IG 为 PCB 安装型交流固态继电器，提供 5A 额定输出、48-380VAC 负载电压范围和 3-32VDC 直流控制输入。产品采用四引脚焊接连接、柔性阻燃硅胶封装和输入输出绝缘结构，适用于小型交流负载、阀类线圈、自动化接口以及 PCB 控制板上的无触点开关控制。

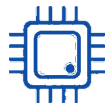
The HSA380D5-IG is a PCB-mount AC solid state relay with 5A rated output, 48-380VAC load voltage range and 3-32VDC control input. Its compact four-pin solder connection, flexible flame-retardant silicone potting and input-output isolation make it suitable for contactless switching of small AC loads, valve coils, automation interfaces and PCB control boards.

Ordering Code | 型号说明

HSA	380	D	5	I	G
产品系列 Product Series	电压代码 Voltage Code	输入代码 Input Code	额定电流 Rated Current	控制选项 Control Option	封装选项 Package Option
HSA: PCB型 固态继电器系列 HSA: PCB solid state relay series	380: 48- 380VAC 负载 电压范围 380: 48- 380VAC load voltage range	D: 直流控制 输入 D: DC control input	5: 5A 额定负 载电流 5: 5A rated load current	I-电流控 制; 留空-电 压控制4- 32VDC I: current control; blank: voltage control 4- 32VDC	G-粉包控 制; 留空-塑 壳封装 G: powder package control; blank: plastic housing package

Typical Applications | 典型应用

- 工业加热控制
Industrial Heating Control
- 自动化设备
Automation Equipment
- 塑料成型设备
Plastic Molding Equipment
- 包装机械
Packaging Machinery
- 暖通空调
HVAC Systems
- 测试设备
Testing Equipment



特性与安装 / Characteristics & Integration

通用数据表 | General Data

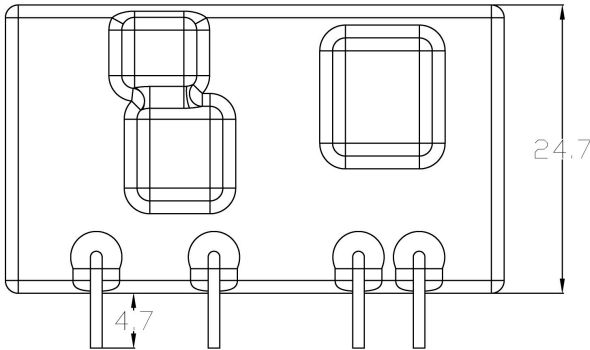
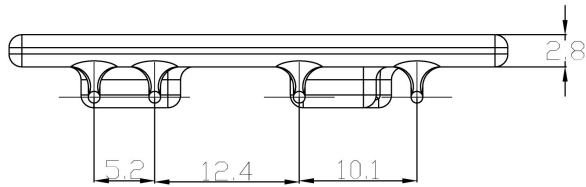
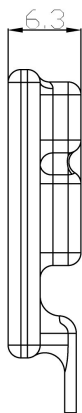
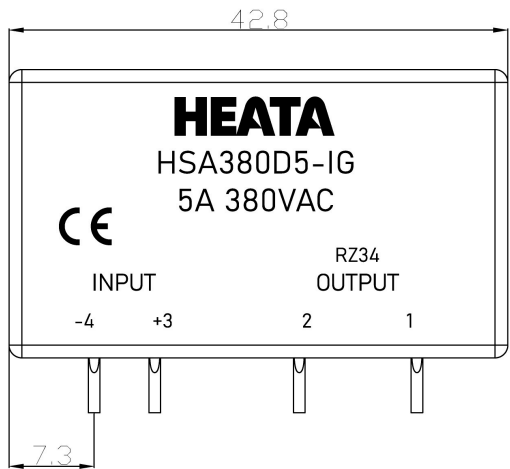
材料 / Material	PBT, RAL7035
封装材料 / Potting compound	Flame-retardant flexible silicone rubber
重量 / Weight	Approx. 20g
安装方式 / Mounting	PCB mounting
输入-输出绝缘 / Input-output isolation	>=4000VACrms
绝缘电阻 / Insulation resistance	10 ¹⁰ ohm
绝缘电容 / Insulation capacitance	8pF
工作温度 / Operating temperature	-20 to +70 °C
储存温度 / Storage temperature	-40 to +100 °C
污染等级 / Pollution degree	2

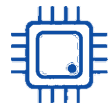
系列型号表 | Series Model Matrix

型号 Model	额定电流 Rated Current	负载电压范围 Load Voltage Range	控制电压范围 Control Voltage Range	输出 / 触发 Output / Trigger
HSA380D5-IG	5A	48-380VAC	3-32VDC	DC input PCB mount

外形尺寸 | Mechanical Dimensions

单位 / Unit: mm

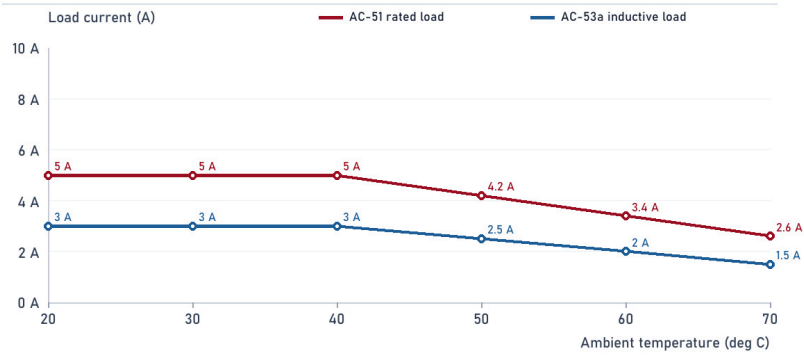




降额与过载能力 | Derating & Increased Current Options

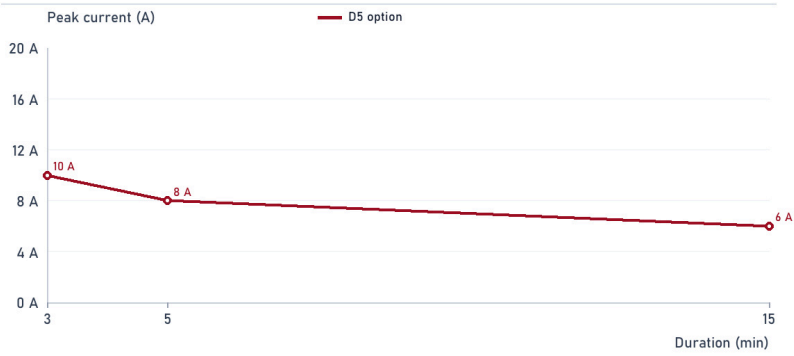
● HSA380D5-IG 电流温度降额 / HSA380D5-IG current derating

HSA380D5-IG current derating



● HSA380D5-IG 短时增大电流 / HSA380D5-IG increased current options

HSA380D5-IG increased current options



兼容性和符合性 | Compatibility & Compliance

项目 Item	参数 Rating
认证 Certification	CE / cURus / CSA / VDE application reference
低压指令 LVD	EN 60947-4-3
电磁兼容 EMC	EN 60947-4-3 / EN 61000-4 series
发射 Emission	EN 55011 Class A
RoHS RoHS	EU RoHS compliant / China RoHS 25

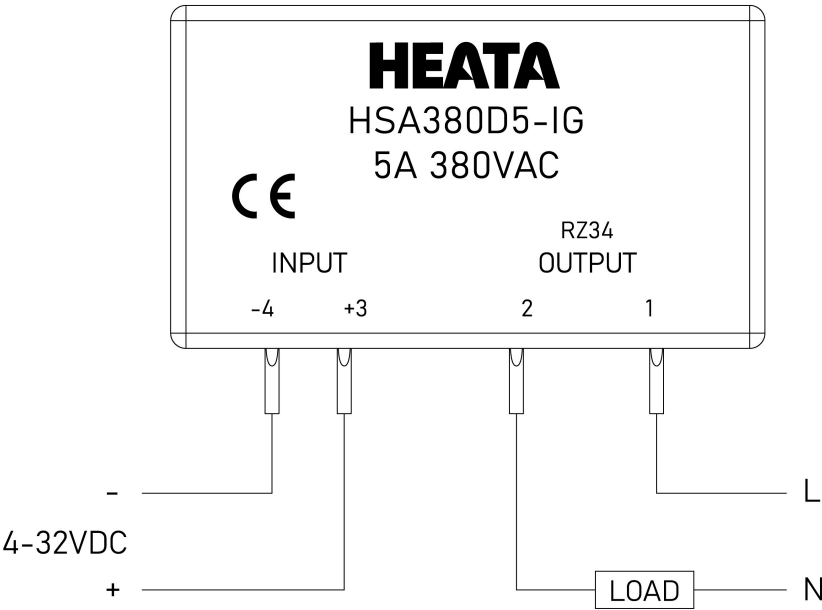


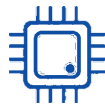
焊接与引脚规格 | Soldering & Pin Specification

项目 Item	参数 Rating
端子材料 Terminals	Copper alloy, tin-plated
焊接温度 Soldering temperature	Max. 300 °C for 5 seconds
控制输入 Control input	+3 / -4
输出端 Output	1 / 2



功能原理图 | Functional Diagram





性能 / Performance



输出参数表 | Output Parameters

项目 Item	HSA380D5-IG
额定工作电流 AC-51 / AC-53a [A] Rated operational current AC-51 / AC-53a [A]	5 / 3
负载电压范围 [VAC] Load voltage range [VAC]	48-380
工作频率范围 [Hz] Operating frequency [Hz]	45-65
阻断电压 [Vp] Blocking voltage [Vp]	850
最小工作电流 [mA] Minimum operational current [mA]	20
重复过载电流 t=1s [AACrms] Repetitive overload current t=1s [AACrms]	12
非重复浪涌电流 [Ap] Non-repetitive surge current [Ap]	80
熔化热能值 I2t (10 ms) [A2s] I2t for fusing (10 ms) [A2s]	50
关断状态漏电流 [mA] Off-state leakage current [mA]	<1
导通压降 [Vrms] On-state voltage drop [Vrms]	<1.2
临界 dV/dt [V/us] Critical dV/dt [V/us]	500



输入参数表 | Input Parameters

项目 Item	参数 Rating
控制电压 [VDC] Control voltage [VDC]	3-32
确保导通电压 [VDC] Guaranteed ON Voltage [VDC]	2.5
确保关断电压 [VDC] Guaranteed OFF Voltage [VDC]	1.2
最大输入电流 [mADC] Maximum input current [mADC]	10
最大反向电压 [VDC] Maximum reverse voltage [VDC]	32
响应时间 [ms] Response time [ms]	<10 turn-on / <10 turn-off
引脚定义 Pin assignment	Input: +3 / -4; Output: 1 / 2



热数据 | Thermal Data

项目 Item	参数 Rating
降额曲线 Derating curve	Current derating with 0 mm spacing
工作温度 Operating temperature	-20 to +70 °C
储存温度 Storage temperature	-40 to +100 °C
污染等级 Pollution degree	2



过载能力 | Increased Current Options

峰值电流 Ipeak	6A	8A	10A
D5: 持续时间 D5: duration	15min	5min	3min
D6: 持续时间 D6: duration	-	-	-

