S2S3/S2S4

Mini-Flat Type
Phototriac Coupler

■ Features

1. Popular type
2. Small package type
3. Conforming to UL double protective insulation (V_{iso} : 3 750V_{rms})
4. Infrared reflow soldering type (230°C, within 30 seconds)
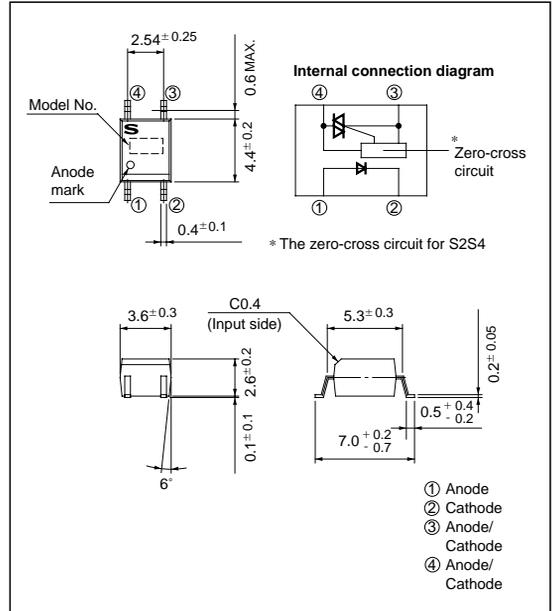5. Recognized by UL (No. 64380)

■ Model Line-ups

	For 100/200V line
Zero-cross circuit not built in	**S2S3**
Zero-cross circuit built in	**S2S4**

■ Application

1. For SSR

■ Outline Dimensions   (Unit : mm)

Internal connection diagram

∗ Zero-cross circuit

∗ The zero-cross circuit for S2S4

① Anode
② Cathode
③ Anode/Cathode
④ Anode/Cathode

■ Absolute Maximum Ratings   (Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
Output	[*1]RMS ON-state current	I_T	0.05	A_{rms}
	[*2]Peak one cycle surge current	I_{surge}	0.6 (50Hz sine wave)	A
	Repetitive peak OFF-state voltage	V_{DRM}	600	V
	[*3]Isolation voltage	V_{iso}	3 750	V_{rms}
	Operating temperature	T_{opr}	-30 to+100	°C
	Storage temperature	T_{stg}	-40 to+125	°C
	[*4]Soldering temperature	T_{sol}	260	°C

*1 The definition of conduction angle θ of RMS ON-state current I_T should be as shown in the right drawing. For decrease curve, refer to Fig. 2.
*2 50Hz sine curve
*3 40 to 60% RH, AC for 1 minute
*4 For 10 seconds

Soldering area
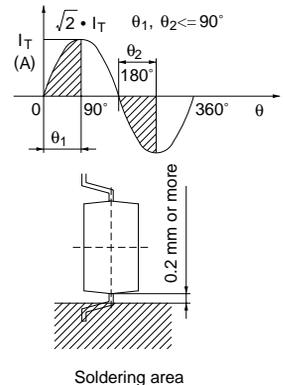
■ Electro-optical Characteristics

(Ta=25˚C)

| Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F = 20mA$	-	1.2	1.4	V
	Reverse current	I_R	$V_R = 3V$	-	-	10	μA
Output	Repetitive peak OFF-state current	I_{DRM}	$V_{DRM} = $ Rated	-	-	1	μA
	ON-state voltage	V_T	$I_T = 0.05A$	-	-	2.5	V
	Holding current	I_H	$V_D = 6V$	0.1	-	3.5	mA
	Critical rate of rise of OFF-state voltage	dv/dt	$V_{DRM} = 1/\sqrt{2}$ • Rated	100	1 000	-	V/μs
	Zero-cross voltage **S2S4**	V_{OX}	$I_F = 15mA$, Resistance load	-	-	35	V
Transfer characteristics	Minimum trigger current	I_{FT}	$V_D = 6V$, $R_L = 100\Omega$	-	-	10	mA
	Insulation resistance	R_{ISO}	DC500V, 40 to 60% RH	5×10^{10}	1×10^{11}	-	Ω
	Turn-on time **S2S3**	t_{on}	$V_D = 6V$, $R_L = 100\Omega$, $I_F = 20mA$	-	-	100	μs
	Turn-on time **S2S4**			-	-	50	

Fig. 1 Forward Current vs. Ambient Temperature
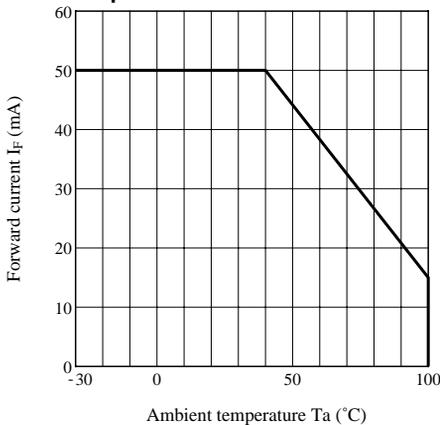
Fig. 2 RMS ON-state Current vs. Ambient Temperature