

Safety Standard Certificate for Photocouplers / Optical Coupled MOSFETs(Solid State Relay)

**PS8302, PS8501, PS8502, PS8551, PS9303,
PS9305, PS9306, PS9307, PS9308, PS9309,
PS9313, PS9317, PS9324, PS9351, PS9402,
PS9505, PS9506, PS9513, PS9551, PS9552,
PS9587**

● UL Certificate

Standard UL 1577

File No. E72422 (Vol. 1 Sec. 47)

This certification is approved as Renesas Electronics Corporation,
but NEC logo is kept on the PKG marking and the label indication
on the smallest packing for the time being.

Please contact sales agent or Renesas Electronics sales, regarding
the date of change to Renesas Electronics indication.

本認定書はルネサスエレクトロニクス社にて取得していますが、当面 製品捺印及び
最小梱包のラベル表示は旧NECロゴにて出荷致します。
尚、実施時期については別途お問合せ下さい。



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DESCRIPTION

PRODUCT COVERED:

*USR - Double Protection Optical Isolators, Models **8302, 8501, 8502, 8551, 9301, 9302, 9303, 9305, 9306, 9307, 9308, 9309, 9313, 9317, 9324, 9351, 9401-2, 9402, 9451, 9505, 9506, 9513, 9551, 9552, 9553 and 9587. All models may be followed by any suffix. May be prefixed by PS.**

MAXIMUM RATINGS (at nominal operating temperature):

Model	Current (mA)		Power (mW)		Isolation Voltage (AC)	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
8302	25	8	45 @ 1Mbps	100 @ 1Mbps	5000	110	125	125
8501	25	8	45	100	5000	100	125	125
8502	25	8	45 @ 1Mbps	100 @ 1Mbps	5000	100	125	125
8551	10	16	55	88	5000	85	125	125
9301	25	600	45 @ 1Mbps	260 @ 1Mbps	5000	110	125	125
*9302	25	2500	45 @ 1 Mbps	250 @ 1 Mbps	5000	100	125	125
9303	20	25	36 @ 1 Mbps	800 @ 1 Mbps	5000	100	125	125
9305	25	2500	45 @ 100 Kbps	250 @ 100 Kbps	5000	110	125	125
9306	25	600	45 @ 500 Kbps	250 @ 500 Kbps	5000	110	125	125
*9307	25	600	45	250	5000	125	125	125
* 9308	25	2000	45	250	5000	110	125	125
9309,	20	25	36	150	5000	110	125	125
9313	25	15	45 @ 1Mbps	500 @ 1Mbps	5000	110	125	125
9317	30	25	45 @ 10Mbps	170 @ 1Mbps	5000	85	125	125
9324	25	25	45	200	5000	110	125	125
* 9351	25	2.0	45	30	5000	100	125	125

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MAXIMUM RATINGS (at nominal operating temperature) (cont'd):

Model	Current (mA)		Power (mW)		Isolation Voltage (AC)	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
9401-2	25	5	45 @ 1Mbps	130 @ 1Mbps	5000	100	125	125
9402	25/25	2500/8	50/50	100/550	5000	110	125	125
9451	10/10	16	55/55	88	5000	85	125	125
9505	25	2500	45 @100 Kbps	250 @100 Kbps	5000	110	125	125
9506	25	600	45 @500 Kbps	250 @500 Kbps	5000	110	125	125
9513	25	15	45 @1 Mbps	500 @1 Mbps	5000	100	125	125
9551	10	16	55	88	5000	85	125	125
9552	25	2500	45 @1 Mbps	295 @1 Mbps	5000	100	125	125
9553	25	5	45 @1 Mbps	130 @1 Mbps	5000	100	125	125
9587	30	25	45 @10 Mbps	170@10 Mbps	5000	85	125	125

GENERAL:

These devices are photocoupled isolators consisting of a photo-emitter such as a light emitting diode, optically coupled to a photo detector, such as a transistor. The light emitting diode and sensor are separated by an insulating window. Internal "chips" are connected to lead frames that are molded into the enclosure.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

USR indicates this product was investigated under the UL Standard for Safety for Optical Isolators, UL 1577, Fourth Edition.

Conditions of Acceptability - Each device shall be reviewed with respect to the following conditions of acceptability:

1. The capability of the device to control a load has not been investigated.
2. These devices should be installed in a suitable end product enclosure.
- *3. **If the maximum operating ambient temperature is exceeded, as noted in the ratings table, additional means should be used to determine if the maximum junction temperature of the device is exceeded. It may be helpful to review the electrical specifications for derating information.**
4. For single protection devices, the insulation to the case has not been evaluated. For double protection devices, the insulation to the case has been evaluated to the isolation voltage specified in the ratings table.
5. In addition to meeting single protection requirements, double protection optical isolators have also been investigated for use in up to 250 V, 50/60 Hz circuits in audio, video, and similar equipment in applications in which breakdown of the optical isolator may result in a risk of fire, electrical shock, or injury to persons.

CONSTRUCTION DETAILS:

General - The product shall be constructed in accordance with the following description. All dimensions are approximate, unless specified as "max" or "min".