GET-10808

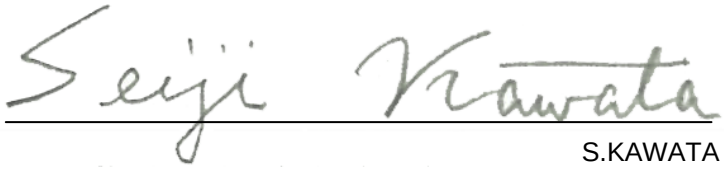
Safety Standard Certificate for Photocouplers

PS8302, PS8501, PS8502, PS8551, PS8551A PS9303, PS9305, PS9306, PS9307, PS9307A PS9308, PS9309, PS9313, PS9317, PS9324, PS9331, PS9332, PS9351, PS9402, PS9505, PS9506, PS9513, PS9531, PS9551, PS9551A, PS9552, PS9587

● UL Certificate

Standard UL 1577

File No. E72422 Vol.1, Sec.47



S.KAWATA

Senior Manager
General Purpose Analog and Power Solution Department
General Purpose Analog and Power Business Division
2nd Solution Business Unit
Renesas Electronics Corporation

July 3, 2014

DESCRIPTION

PRODUCT COVERED:

*USR – Double Protection Optical Isolators, Models 8302, 8501, 8502, 8551, 9303, 9305, 9306, 9307, 9308, 9309, 9313, 9317, 9324, 9331, 9332, 9351, 9402, 9451, 9505, 9506, 9513, 9531, 9551, 9552, and 9587. All models may be followed by any suffix except A. May be prefixed by PS.

USR – Double Protection Optical Isolators, Models 8551A, 9307A, 9451A, 9551A, may be followed by any suffix. May be prefixed by PS.

MAXIMUM PER CHANNEL RATINGS (at 25°C)($):

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	8/10	16	44/55	88	5000	85	125	125
8551A	10/15	16	55/70	110	5000	105	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	150
9307A	25	600	45	250	5000	125	125	150
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
9331	25	2500	45	250	5000	125	125	150
9332	25	2000	50	250	5000	125	125	150
9351	25	2.0	45	30	5000	100	125	125

MAXIMUM PER CHANNEL RATINGS (at 25°C)($): (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				
*								
9402	25/25	2500/8	50/50	100/550	5000	110	125	125
9451	10/10	16	55/55	88	5000	85	125	125
9451A	15/10	16	55/70	110	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
9531	25	2500	45	250	5000	125	125	150
9551	8/10	16	44/55	88	5000	85	125	125
9551A	15/10	16	55/70	110	5000	105	125	125
9552	25	2500	45 @1 Mbps	295 @1 Mbps	5000	100	125	125
*								
9587	30	25	45 @10 Mbps	170@10 Mbps	5000	85	125	125

($) - For ambient temperatures higher than 25°C and up to Tmoa, refer to manufacturer's specifications and/or thermal derating curve data for complete electrical ratings.

CERTIFICATE OF COMPLIANCE

Certificate Number	20140603-E72422
Report Reference	E72422-20060829
Issue Date	2014-JUNE-03

Issued to: RENESAS ELECTRONICS CORPORATION
GENERAL PURPOSE ANALOG AND POWER BUSINESS DIV
COMPOUND SEMICONDUCTOR DESIGN DEPT
1753 SHIMONUMABE,NAKAHARA-KU
KAWASAKI
KANAGAWA 211-8668 JAPAN

This is to certify that representative samples of COMPONENT - OPTICAL ISOLATORS
See addendum page for models

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1577 - Standard for Optical Isolators

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Recognized Component Mark should be considered as being covered by UL's Recognition and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number	20140603-E72422
Report Reference	E72422-20060829
Issue Date	2014-JUNE-03

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

USR – Double Protection Optical Isolators, Models 8302, 8501, 8502, 8551, 9303, 9305, 9306, 9307, 9308, 9309, 9313, 9317, 9324, 9331, 9332, 9351, 9402, 9451, 9505, 9506, 9513, 9531, 9551, 9552, and 9587. All models may be followed by any suffix except A. May be prefixed by PS.

USR – Double Protection Optical Isolators, Models 8551A, 9307A, 9451A, 9551A, may be followed by any suffix. May be prefixed by PS.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC