GET-SB-0121

NEC

Safety Standard Certificate for Photocoupler

PS284x

● UL Certificate

Standard	UL1577
File No.	E72422 (S) Vol1. Sec.43

T. Nakano

T. NAKANO

Group Manager
Sales Engineering Group Sales Division
NEC Compound Semiconductor Devices, Ltd.

June 5, 2002

DESCRIPTION

PRODUCT COVERED:

Component - Optical Isolator, Type PS2841-4A, PS2841-4B and PS2845-4A.

GENERAL:

This device is a surface mounted Optical Isolator consisting of a photo-emitter such as a light emitting diode, optically coupled to a photo detector such as a transistor. These devices maintain a minimum 0.4 mm isolation distance. They are intended to be used in applications where the suitability of the combination has been determined by Underwriters Laboratories Inc. Only the insulation function for the rated dielectric insulation voltage between the input and output of the device has been investigated.

Ratings:

Model/ Type Number	Current (mA)		Power (mW)		Isolation Voltage	Maximum Operating Temp. (°C)	Storage/ Junction Temp. (°C)
	Diode	Detector	Diode	Detector			
PS2841-4A	20	20	24	40	1500 V ac	100	125
PS2841-4B	20	20	24	40	1500 V ac	100	125
PS2845-4A	20	20	24	40	1500 V ac	100	125

The rated detector power of 40 mW per channel.

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

These devices are optically coupled isolating switches with gallium arsenide light emitting diodes optically coupled to photo detectors. The solid state portion of these devices is encapsulated in a silicone or epoxy compound. The light emitting diode and detector are separated by an insulating window. Internal "chips" are provided with terminals molded into the enclosure.

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

CONDITIONS OF ACCEPTABILITY -

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

1. The short circuit interrupting capacity, or behavior under short circuit conditions, has not been evaluated for these devices. Accordingly, the end-use circuit should contain suitable impedance to eliminate the need for such testing or appropriate tests should be conducted.

2. The device shall be installed in compliance with the enclosure, mounting, spacings and segregation requirements of the ultimate application. No spacings are specified for the device.

3. The electrical and outer surface temperature ratings recorded below shall be acceptable in the ultimate application.

4. The suitability of use when exposed to oil, chemicals and the like, has not been determined by this investigation.

5. If a particular end-use application requires evaluation of "as received" case material properties not contemplated under the scope of this investigation, such properties will have to be separately investigated.

6. The suitability of the connections shall be determined in the end-use application.

7. The capability of the device to control a load has not been investigated.

8. The suitability of the device to be mounted over dead-metal or metal of opposite polarity has not been investigated.

9. These devices are intended for factory wiring only.

CONSTRUCTION DETAILS:

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

The general design, shape and arrangement shall be as illustrated, except where variations are specifically described.

Corrosion Protection - All ferrous parts are of corrosion resistant material or are plated or painted as corrosion protection.

Markings - Recognized Company name or trademark and type designation provided on each unit or on the smallest shipping container in which the device is shipped. See ILL. 2 for details.

Specification Sheet - Specification sheet is provided and contains the following information:

1. Maximum continuous power, a current and a voltage rating for both the photo-emitter and the photo-detector.

2. A dielectric insulation-voltage rating between input and output terminals. This should be the same as the isolation Voltage in ratings above.

3. Derating specifications related to ambient temperatures shall also be provided in graphic or tabular format.

4. The junction temperature for these devices is 125°C.

Model Differences - All models have identical insulation systems. The only difference is the photo emitting and photo detecting circuit configurations as follows:

PS2841-4A - Common Cathode and Common Collector.
PS2841-4B - Common Anode and Common Collector.
PS2845—4A - Common Anode, Cathode and Common Collector.

Abbreviation - R/C = Recognized Component.

Lead Frame Figure - See ILL.3 for details.

Pin identification and Package Dimensions - See ILL.4 for details.