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Project 4787281617

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REPORT

on

COMPONENT - Nonoptical Isolating Devices

ANALOG DEVICE INC.
WILMINGTON, MA

DESCRIPTION

PRODUCT COVERED:

USR – Single Protection Non-Optical Isolator, Models ADuM110NzRZ, ADuM12xNzBRZ, ADuM120N, ADuM121N, ADUM13xyzBRWZ, ADUM13xyzBRZ, ADUM14xyzBRWZ, ADUM14xyzBRZ, ADuM15xNzBRZ, ADuM16xNzBRZ, ADuM23xyzBRIZ, ADuM24xyzBRIZ, ADUM210NzBRIZ, ADUM23xyzBRWZ, ADuM220NzBRWZ, ADuM221NzBRWZ, ADUM24xyzBRWZ, ADuM25xNy, ADuM26xNy, ADuM225, ADuM226, **ADuM4121xRWZ**, **ADuM4121-1xRWZ**, ADUM4135BRWZ, ADuM4136BRWZ, ADN4650BRSZ, ADN465xBRWZ, where x, y, and z represent any alphanumeric character. All models may have additional suffixes. A "W" before the package type indicates an automotive flow and is an accepted variant.

MAXIMUM RATINGS PER SIDE (at 25°C ambient) ($):

Model	Current (mA)		Power (mW)		Isolation Voltage at 60 sec (Vrms)	Max Operating Ambient Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)	Max Data Rate, Mbps
	Encoder (Side 1)	Decoder (Side 2)	Encoder (Side 1)	Decoder (Side 2)					
ADuM110NzRZ	3.6	4.9	18	24.5	3000	125	150	150	150
ADuM12xNzBRZ	6.2	6.0	31	30	3000	125	150	150	150
ADuM120N	9.4	7.4	47	37	3000	125	150	150	150
ADuM121N	8.5	9.4	43	47	3000	125	150	150	150
ADUM13xyzBRZ	9.4	8	47	40	3000	125	150	150	150
ADUM14xyzBRZ	11.8	10.3	59	51.5	3000	125	150	150	150
*ADUM13xyzBRWZ	9.4	8	47	40	**3750**	125	150	150	150
*ADUM14xyzBRWZ	11.8	10.3	59	51.5	**3750**	125	150	150	150
ADuM15xNzBRZ	16	13.4	80	67	3000	125	150	150	150
ADuM16xNzBRZ	18.3	17	91.5	85	3000	125	150	150	150
ADUM23xyzBRWZ	9.4	8	47	40	5000	125	150	150	150
ADuM23xyzBRIZ	9.4	8	47	40	5000	125	150	150	150
ADUM24xyzBRWZ	11.8	10.3	59	51.5	5000	125	150	150	150
ADuM24xyzBRIZ	11.8	10.3	59	51.5	5000	125	150	150	150
ADuM25xNy	16	13.7	80	68.5	5000	125	150	150	150
ADuM26xNy	18.3	17	91.5	85	5000	125	150	150	150
ADUM210NzBRIZ	3.6	4.9	18	24.5	5000	125	150	150	150
ADuM220NzBRWZ	6.2	4.8	31	24	5000	125	150	150	150
ADuM221NzBRWZ	5.4	5.9	27	29.5	5000	125	150	150	150
ADuM225NzBRIZ	6.2	4.8	31	24	5000	125	150	150	150

MAXIMUM RATINGS PER SIDE (at 25°C ambient) ($):

Model	Current (mA)		Power (mW)		Isolation Voltage at 60 sec (Vrms)	Max Operating Ambient Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)	Max Data Rate, Mbps
	Encoder (Side 1)	Decoder (Side 2)	Encoder (Side 1)	Decoder (Side 2)					
ADuM226NzBRIZ	5.4	5.9	27	29	5000	125	150	150	150
ADuM4121xRWZ	**3.6**	**6.8**	**18**	**240**	**5000**	**125**	**150**	**150**	**20**
ADuM4121-1xRWZ	**3.6**	**6.8**	**18**	**240**	**5000**	**125**	**150**	**150**	**20**
ADUM4135BRWZ	4.78	4.82	28.7	144	5000	125	150	150	150
ADuM4136BRWZ	4.78	4.82	28.7	144	5000	125	150	150	150
ADN4650BRSZ	80	80	264	264	5000	125	150	150	600
ADN465xBRWZ	80	80	264	264	5000	125	150	150	600

($) - 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.

GENERAL:

These non-optical isolator devices consist of a transmitter coupled to a receiver. The transmitter and receiver are separated by an insulating barrier. Internal chips are connected to lead frames that are molded into the enclosure.

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

Use - For use only in products where the acceptability of the combination is determined by UL LLC.

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

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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. The maximum junction temperature shall not be exceeded.

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”.

Markings – As specified in the Section General.

MODEL ADUM4135BRWZ

General – Model ADUM4135BRWZ represents all models.

1. Encoder – FET input.

2. Decoder – FET output.

3. Isolation Chip – As described below.

Optical Isolator Model	Isolation Chip Model
ADUM13xyzBRZ, ADUM13xyzBRWZ, ADUM14xyzBRZ, ADUM14xyzBRWZ, ADuM15xNzBRZ, ADuM16xNzBRZ ADUM24xyzBRWZ, ADUM23xyzBRWZ, ADuM23xyzBRIZ, AduM24xyzBRIZ, ADuM25xNy, ADuM26xNy	ADUM14XTC
ADuM110NzRZ, ADuM12xNzBRZ, ADuM16xNzBRZ, ADUM210NzBRIZ, ADuM220NzBRWZ, ADuM221NzBRWZ, ADuM225NzBRIZ, ADuM226NzBRIZ	ADUM12XTC
ADUM4135BRWZ	ADUM4135_coil
ADuM4136BRWZ	ADUM4136_coil
ADN4650BRSZ	Z31A
ADN465xBRWZ	Z31A
ADuM4121xRWZ, ADuM4121-1xRWZ	**adum4121_coil**

4. Lead Frame and Bond Wire – Metal employed for current carrying parts shall be of stainless steel, plated steel, silver, gold, copper, nickel, aluminum, an alloy of the same, or an equivalent material.

5. Casing (Outer Mold) – Epoxy type, Sumitomo Bakelite, Type G700LY.

6. Insulation Transformer Compound Coupling – Polyimide film, Asahi Kasei Corporation, Type I-8124ER, 0.025 mm minimum thick.