File E214100
Project 4786360191

August 9, 2014

REPORT

On

COMPONENT - NON-OPTICAL ISOLATING DEVICES

ANALOG DEVICES INC
Wilmington, MA 01887

DESCRIPTION

PRODUCT COVERED:

USR – Single Protection Non-Optical Isolator, Models ADuM124xRZ, ADuM124xRSZ, ADuM144xRSZ, ADuM144xRQZ, ADuM148x, ADuM315x, ADuM415x, ADuM3190, ADuM3224, ADuM4190 and ADuM4224, where “x” in the model number may be any alpha/numeric designation. All models may have additional suffixes.

ELECTRICAL RATINGS (at 25°C ambient) ($):

Model	Current (mA)		Power (mW)		Isolation Voltage (AC)	Max Operating Temp (Tmoa) (°C)	Max Junction Temp (Tj) (°C)	Max Storage Temp (Ts) (°C)	Max Data Rate, Mbps
	Encoder	Decoder	Encoder	Decoder					
ADuM124xRZ	0.6	0.45	3.0	2.25	3000	125	150	150	2Mbps
ADuM124xRSZ	0.6	0.45	3.0	2.25	3750	125	150	150	2Mbps
ADuM144xRQZ	1.2	0.9	6.0	4.5	2500	125	150	150	2Mbps
ADuM144xRSZ	1.2	0.9	6.0	4.5	3750	125	150	150	2Mbps
ADuM148x	50.0	38.0	250	190	3750	125	150	150	100Mbps
ADuM315x	22.0	18.0	110	90	3750	125	150	150	34Mbps
ADuM415x	22.0	18.0	110	90	5000	125	150	150	34Mbps
ADuM3190	2.0	5.0	40.0	100	2500	125	150	150	10Mbps
ADuM4190	2.0	5.0	4.0	100	2500	125	150	150	10Mbps
ADuM3224	2.5	8.0	12.5	288	3000	125	125	150	1Mbps
ADuM4224	2.5	8.0	12.5	288	5000	125	125	150	1Mbps

($) - 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 devices are non-optical isolators consisting of an encoder and decoder. The encoder and decoder are separated by a transformer. 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.

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 exceeds the rating noted in the ratings table, additional means should be used to determine if the maximum junction temperature of the device is 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.

CONSTRUCTION DETAILS:

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

MODELS ADuM148x, ADuM415x, and ADuM4224

General – Models ADuM148x, ADuM415x, and ADuM4224 represent Models ADuM144xRSZ, ADuM144xRQZ, ADuM315x, ADuM3190, ADuM3224, ADuM4190, ADuM124xRSZ.

1. Encoder – FET input.

2. Decoder – FET output.

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

4. Insulation Transformer Compound Coupling – Polyimide Film, Type I-8124ER, by Asahi Kasei EMD, with 0.017 mm minimum thickness. This provides isolation between coils.

5. Insulation Encapsulant – Epoxy Type G600C by Sumitomo.

MODELS ADuM124xRZ

General – MODELS ADuM124xRZ is similar to ADuM124xRSZ, except as noted below.

5. Insulation Encapsulant – Epoxy Type G700LY by Sumitomo.