

File E214100  
Project 08CA18070

June 20, 2008

REPORT

on

COMPONENT - NON-OPTICAL ISOLATING DEVICES

Analog Devices Inc  
Wilmington, MA

Copyright © 2008 Underwriters Laboratories Inc.

Underwriters Laboratories Inc. authorizes the above named company to reproduce the latest pages of that portion of this Report consisting of this Cover Page through Page 2.

## DESCRIPTION

## PRODUCT COVERED:

USR - Single Protection **Non-Optical** Isolators, Models ADuM, followed by 220, 500, 520, 523, or 540, may be followed by additional letters and/or numbers.

USR - Single Protection **Non-Optical** Isolators, Models ADM2582E, ADM2587E, **ADM3053**, may be followed by additional letters and/or numbers.

## MAXIMUM RATINGS (at nominal operating temperature):

Model	Current (mA)		Power (mW)		Isolation Voltage (Vac)	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Encoder	Decoder	Encoder	Decoder				
ADuM220	4.6	4.0	25 @ 10Mbps	22 @ 10Mbps	5000	125	150	150
ADuM500	290	100	1450	500	2500	105	150	150
ADuM520	290	100	1450	500	2500	105	150	150
ADuM523	200	8.5	1000	128	2500	105	150	150
ADuM540	290	100	1450	500	2500	105	150	150
ADM2582E	150	100	600@ 16Mbps	500@ 16Mbps	2500	85	125	150
ADM2587E	150	100	600@ 500Kbps	500@ 500Kbps	2500	85	125	150
<b>ADM3053</b>	<b>170</b>	<b>100</b>	<b>850@ 1 Mbps</b>	<b>525 @ 1 Mbps</b>	<b>2500</b>	<b>85</b>	<b>130</b>	<b>150</b>

## GENERAL:

These devices are non-optical isolators consisting of a 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.

## 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.

\*MODEL ADuM220 - ILL. 1

General - Model ADuM220 represents models ADM2582E, ADM2587E.

1. Side 1 (Encoder) - LED input.

\*

2. Side 2 (Decoder) - FET output. Transformer included.

\*

\*3. Lead Frame - **Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.**

4. Insulation Encapsulant - R/C (QMFZ2), Epoxy, Type EME-6600H by Sumitomo.

5. Insulation Transformer Compound Coupling - Polyimide film, Type I-8124ER by Asahi Kasei Corp. Minimum 0.017 mm thick. Provides isolation between coils.

\*MODEL ADuM500/520/523/540 - ILL. 2

General - Same as Model ADuM220 shown in ILL. 1, except as noted below.

1. Side 1 - LED input.

\*

2. Side 2 - FET output.

\*

6. Transformer Chip 1.

\*

7. Transformer Chip 2.

\*

**MODEL ADM3053 - ILL. 3**

**General - Same as Model ADuM220 shown in ILL. 1, except as noted below.**

**4. Insulation Encapsulant - R/C (QMFZ2), Epoxy, Type EME-6600H by Sumitomo.**

**Alternate - Same as above except Type G600C by Sumitomo.**