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REPORT

on

COMPONENT - Nonoptical Isolating Devices

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Wilmington, MA

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DESCRIPTION

PRODUCT COVERED:

USR, CNR - Single Protection Non-Optical Isolator, Models ADE7912, ADE7913, ADE7932, and ADE7933. All models may have additional suffixes.

MAXIMUM RATINGS PER CHANNEL (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, MHz
	Encoder (Side 1)	Decoder (Side 2)	Encoder (Side 1)	Decoder (Side 2)					
ADE7912	0.8	12.5	2	45.375	5000	85	150	150	4.21
ADE7913	0.8	12.5	2	45.375	5000	85	150	150	4.21
ADE7932	0.8	12.5	2	45.375	5000	85	150	150	4.21
ADE7933	0.8	12.5	2	45.375	5000	85	150	150	4.21

(\$) - For ambient temperatures higher than 25°C and up to T_{moa}, 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.

CNR indicates this product was investigated under the Canadian Certification Notice, CSA Component Acceptance Service No. 5A.

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 ADE7933

General - Model ADE7933 represents models ADE7912, ADE7913, and ADE7932 except as noted below.

1. Encoder - FET input.
2. Decoder - FET output.
3. Isolation Chip - As described below.

Optical Isolator Model	Isolation Chip Model
ADE7912	ADE7912ARIZ
ADE7913	ADE7913ARIZ
ADE7932	ADE7932ARIZ
ADE7933	ADE7933ARIZ

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 CEL8240 HF 10LX manufactured by Hitachi Chemical Co. Ltd.
6. Insulation Transformer Compound Coupling - Polyimide film by Asahi Kasei Corporation as noted in the following table.

Location	Material Model	Through Insulation Thickness, mm
Power coils	BL-130B	0.021
Data coils	I-8124HR	0.017