



The DNA of tech.™

Bidirectional Asymmetrical (BiAs) Single Line ESD Protection Diode in DFN1006-2A



KEY BENEFITS

- Compact DFN1006-2A package with wettable flanks
- Low load capacitance down to 8 pF typical
- Available in an AEC-Q101 qualified version
- Low maximum leakage current of $< 0.1 \mu\text{A}$ at the working voltage of 7 V or 14 V
- Breakdown voltage of 7.3 V or 14.5 V typical at 1 mA
- Maximum clamping voltage of 15 V at 3.6 A or 30 V at 2 A
- Provides transient protection for one data line as per IEC 61000-4-2 at $\pm 25 \text{ kV}$ (contact) and $\pm 30 \text{ kV}$ (air) discharge
- Moisture sensitivity level (MSL) of 1 in accordance with J-STD-020
- UL 94 V-0 flammability rating
- Supports automated optical inspection (AOI) for automotive systems
- Soldering can be checked by standard vision inspection; no X-ray is required
- RoHS-compliant, halogen-free, and [Vishay Green](#)

APPLICATIONS

Interface protection in commercial and automotive applications

RESOURCES

- Datasheet: [VCUT0714BHD1](#)
- For technical questions contact ESDProtection@vishay.com
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

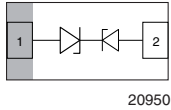
HALOGEN
FREE

GREEN
(5-2009)



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20950



MARKING (example only)



Bar = pin 1 marking
Y = type code (see table below)
X = date code

LINKS TO ADDITIONAL RESOURCES



FEATURES

- Ultra compact DFN1006-2A
- AEC-Q101 qualified available
- Low package height
- 1-line ESD protection
- Working range -7 V up to +14 V or -14 V up to +7 V
- Low leakage current < 0.1 μ A
- Low load capacitance typical C_D = 8 pF
- ESD immunity acc. IEC 61000-4-2
± 25 kV contact discharge
± 30 kV air discharge
- e3 - Sn
Tin plated exposed side wall of lead frame
- Soldering can be checked by standard vision inspection
- AOI = automated optical inspection
- No X-ray necessary
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



| ORDERING INFORMATION | | | | | |
|-----------------------|--------------------|--|------------|-----------------------------|--------------------|
| PART NUMBER (EXAMPLE) | AEC-Q101 QUALIFIED | ENVIRONMENTAL AND QUALITY CODE | | PACKAGING CODE | ORDERING CODE |
| | | RoHS-COMPLIANT + LEAD (Pb)-FREE TERMINATIONS | TIN PLATED | 10K PER 7" REEL (8 mm TAPE) | |
| | | GREEN | | MOQ = 10K | |
| VCUT0714BHD1 | - | G | 3 | -08 | VCUT0714BHD1-G3-08 |
| VCUT0714BHD1 | H | G | 3 | -08 | VCUT0714BHD1HG3-08 |

| PACKAGE DATA | | | | | | | |
|--------------|--------------|-------------|-----------|---------|--------------------------------------|-----------------------------------|------------------------------|
| DEVICE NAME | PACKAGE NAME | PIN PLATING | TYPE CODE | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL | SOLDERING CONDITIONS |
| VCUT0714BHD1 | DFN1006-2A | e3 | :A | 0.83 mg | UL 94 V-0 | MSL level 1 (according J-STD-020) | Peak temperature max. 260 °C |

| ABSOLUTE MAXIMUM RATINGS | | | | | |
|--------------------------|--|--|-----------|-------------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | VALUE | UNIT |
| Peak pulse current | Pin 1 to pin 2, acc. IEC 61000-4-5, 8/20 μ s/single shot | | I_{PPM} | 3.6 | A |
| | Pin 2 to pin 1, acc. IEC 61000-4-5, 8/20 μ s/single shot | | | 2 | A |
| Peak pulse power | Pin 1 to pin 2, acc. IEC 61000-4-5, 8/20 μ s/single shot | | P_{PP} | 50 | W |
| | Pin 2 to pin 1, acc. IEC 61000-4-5, 8/20 μ s/single shot | | | 61 | W |
| ESD immunity | Contact discharge acc. IEC 61000-4-2; 10 pulses | | V_{ESD} | ± 25 | kV |
| | Air discharge acc. IEC 61000-4-2; 10 pulses | | | ± 30 | kV |
| Operating temperature | Junction temperature; for AEC-Q101 qualified devices | | T_J | -55 to +150 | °C |
| Storage temperature | | | T_{stg} | -65 to +150 | °C |

Revision: 15-Apr-2021