VISHAY

The DNA of tech.®

ESD Protection Diode for Automotive Ethernet Networks

Device Features Space-Saving DFN1006-2B Package With Wettable Flanks

ADVANTAGE

Optimized for automotive Ethernet networks in compliance with OPEN Alliance 10Base-T1S, 100Base-T1, and 1000Base-T1 specifications

KEY PRODUCT FEATURES

- ✓ 1-line bidirectional ESD protection
- ✓ ± 24 V working voltage and > 100 V trigger voltage
- ✓ Very low clamping voltage of 31 V typical at 1 A
- ✓ Low dynamic resistance of 0.4 Ω typical
- ✓ Low maximum capacitance of 2 pF
- ✓ Low maximum capacitance of 1pF with two devices in series, in accordance with OPEN Alliance 10Base-T1S
- ✓ AEC-Q101 qualified available

MARKETS AND APPLICATIONS

CONNECTIVITY
- Fixed infrastructure

CONSUMER
- Entertainment and appliances

MOBILITY
- Automotive
- Automotive electrification (e-powertrain)
- Automotive intelligence (smart vehicles)
- Micro mobility
- Transportation

INDUSTRIAL
- Automation
- Industrial infrastructure
- Home and building controls

MEDICAL
- Medical instrumentation, monitoring, therapeutics

RESOURCES

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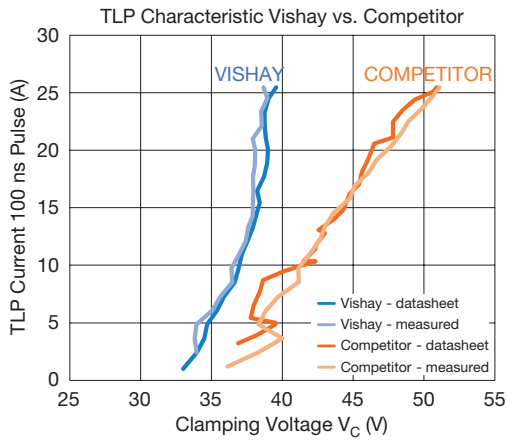
ADDITIONAL BENEFITS

- **Robust transient protection** for high speed data lines, compliant with ISO 10605 and IEC 61000-4-2 standards, supports ±15 kV contact discharge for up to 1000 pulses
- **DFN1006-2B package with wettable side walls (flanks)** enables reliable solder joint formation and enhanced inspectability in automated manufacturing environments
- **Supports automated optical inspection (AOI)** to ensure efficient production and consistent quality
- **Moisture Sensitivity Level (MSL) 1**, compliant with J-STD-020, providing unlimited floor life under standard conditions
- **UL 94 V-0 flammability rating** for high safety and reliability in demanding applications

Test results acc. OPEN Alliance IEEE 1000BASE-T1 specification

Single Test	Result	Comment / Resulting Class
S-parameter	Pass	
Damage ESD	Pass	
ESD discharge current measurement / CMC saturation class I	Pass (1)	± 3 kV: Class III ± 5 kV: Class III ± 6 kV: Class III ± 7 kV: Class III ± 15 kV: Class III
RF clamping	Pass (1)	Class III



Note

(1) Result is Pass because the maximum defined limit class is fulfilled by the ESD suppression device

Snap-Back Behavior