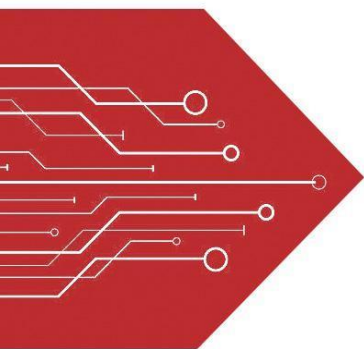


MSKSEMI

SEMICONDUCTOR



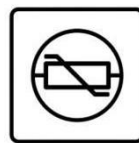
ESD



TVS



TSS



MOV



GDT



PLED

Product data sheet

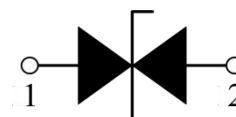
Features

low Capacitance 10pF
 Low Clamping Voltage
 Small Body Outline Dimensions: 0.039" x 0.024"
 (1.0 mm x 0.60 mm)
 Low Body Height: 0.019" (0.5 mm)
 Stand-off Voltage: 5.0V
 Low Leakage
 Response Time is Typically < 1 ns
 IEC61000-4-2 Level 4 ESD Protection for datalines
 These are Pb-Free Devices

Pin Description



Schematic Diagram



Applications

DFN1006-2

10/100/1000 Mbps/s Ethernet
 FireWire
 Display ports
 MDDI ports
 Digital Visual Interface (DVI)
 Cellular handsets & accessories
 Computer and peripherals

Electrical Characteristics@ Ta=25°C unless otherwise

| P/N | VRWM @IR | | VBR@ImA | VC@1A | VC@IPP | | CJ |
|------------|----------|-----|---------|-------|--------|---|-----|
| | V | μA | V | V | V | A | pF |
| | | MAX | MIN | MAX | MAX | | TYP |
| MSESD5451X | 5 | 1 | 5.8 | 11 | 15 | 5 | 10 |

Maximum Rating @ Ta=25°C unless otherwise specified

| Symbol | Parameter | | Ratings | Units |
|--------|----------------------------|---------|-------------|-------|
| ESD | IEC 61000-4-2 (HBM-ESD) | Contact | 8 | KV |
| | | Air | 15 | |
| TL | Lead Soldering Temperature | | 260(10sec.) | °C |
| TJ | Operating Temperature | | -55 to +125 | °C |
| TSTG | Storage Temperature | | -55 to +150 | °C |

Electrical Parameter

| Symbol | Parameter |
|-----------|---|
| I_{PP} | Maximum Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{RWM} | Working Peak Reverse Voltage |
| I_R | Maximum Reverse Leakage Current @ V_{RWM} |
| I_T | Test Current |
| V_{BR} | Breakdown Voltage @ I_T |

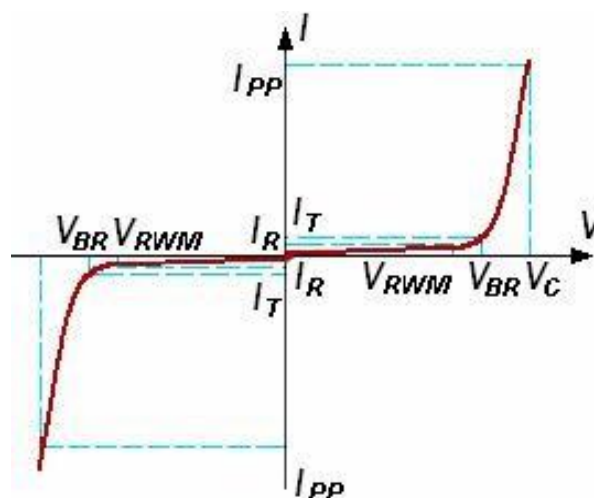


FIG1: Pulse Waveform

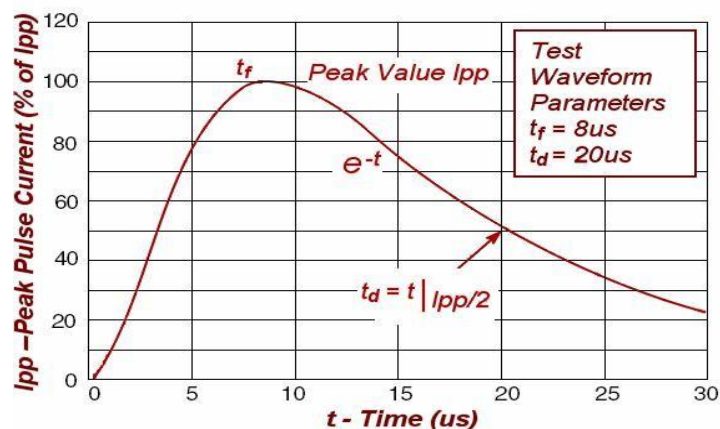
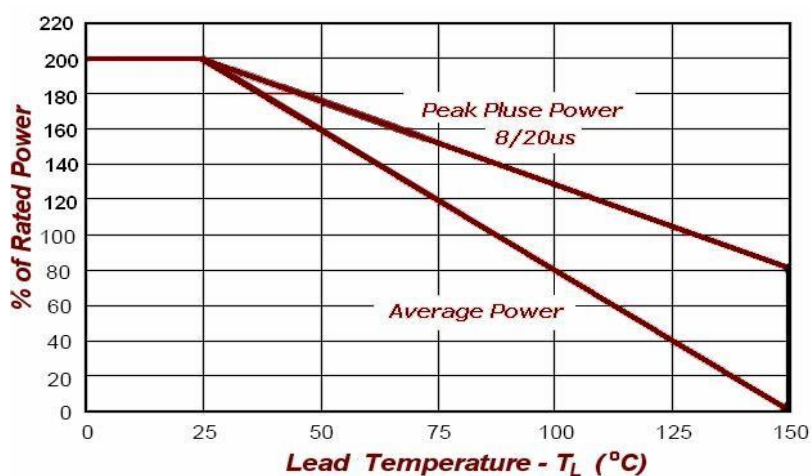
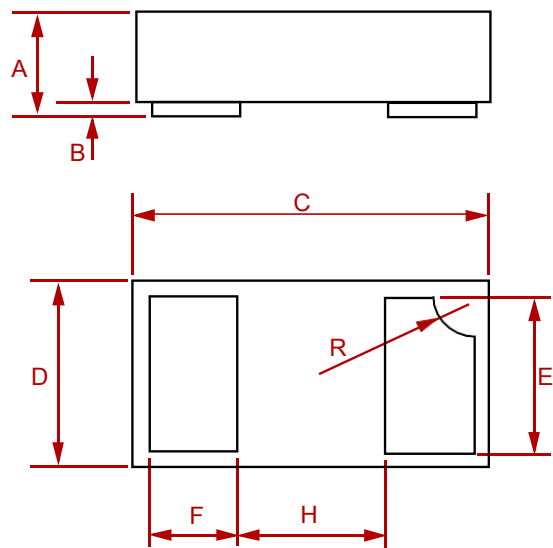


FIG2: Power Derating

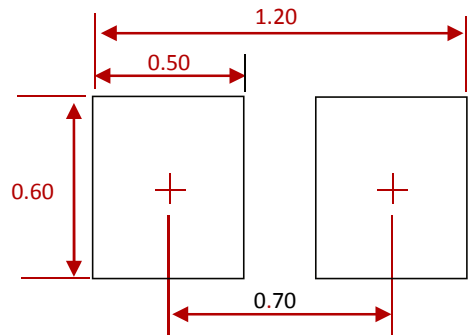


PACKAGE MECHANICAL DATA



| Dim | Inches | | Millimeters | |
|-----|-----------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.0125 | 0.02 | 0.32 | 0.52 |
| B | 0.000 | 0.002 | 0.00 | 0.05 |
| C | 0.037 | 0.043 | 0.95 | 1.080 |
| D | 0.022 | 0.027 | 0.55 | 0.680 |
| E | 0.016 | 0.024 | 0.40 | 0.60 |
| F | 0.008 | 0.012 | 0.20 | 0.30 |
| H | 0.015Typ. | | 0.40Typ. | |
| R | 0.001 | 0.005 | 0.05 | 0.15 |

Suggested Pad Layout



- NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
 2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY.
CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR
COMPANY'S MANUFACTURING GUIDELINES ARE MET.

REEL SPECIFICATION

| | | |
|------------|-----------|-------|
| P/N | PKG | QTY |
| MSESD5451X | DFN1006-2 | 10000 |

Attention

■ Any and all MSKSEMI Semiconductor products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your MSKSEMI Semiconductor representative nearest you before using any MSKSEMI Semiconductor products described or contained herein in such applications.

■ MSKSEMI Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specificationsof any andall MSKSEMI Semiconductor products described orcontained herein.

■ Specifications of any and all MSKSEMI Semiconductor products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer'sproducts orequipment.

■ MSKSEMI Semiconductor. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with someprobability. It is possiblethat these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits anderror prevention circuitsforsafedesign, redundant design, and structural design.

■ In the event that any or all MSKSEMI Semiconductor products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from theauthorities concerned in accordance with the above law.

■ No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of MSKSEMI Semiconductor.

■ Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. MSKSEMI Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringementsof intellectual property rights or other rightsof third parties.

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. Whendesigning equipment, referto the "Delivery Specification" for the MSKSEMI Semiconductor productthat you intend to use.