

RS INDUSTRY LIMITED

RSDFS05C 5-Line Transient Voltage Suppressor Array

Revision:B

General Description

The RSDFS05C is a transient voltage suppressor designed to protect components which are connected to data and transmission lines against ESD. It clamps the voltage just above the logic level supply for positive transients and to a diode drop below ground for negative transients.

Applications

- Computer Notebooks
- Communication Systems & Cellular Phones
- Printers
- Personal Digital Assistant (PDA)
- Video Equipment

Features

- 100 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- Monolithic Structure
- Clamping Voltage :5V
- Low Clamping Voltage
- Low Leakage Current
- Protects Four (4) Bidirectional Lines and Five (5) Unidirectional Lines
- RoHS compliant on Lead-Free Versions

Complies with the following standards

IEC61000-4-2

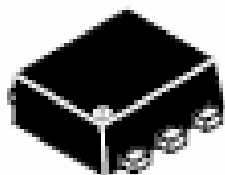
Level 4 15 kV (air discharge)

8 kV(contact discharge)

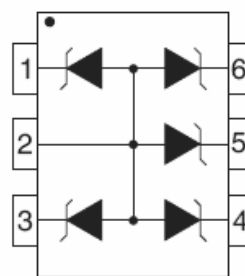
MIL STD 883E - Method 3015-7 Class 3

25 kV HBM (Human Body Model)

Functional Diagram



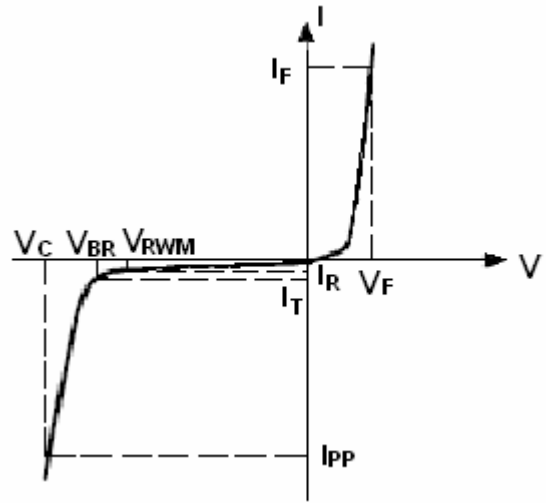
SOT-563



| Absolute Ratings @ 25°C Unless Otherwise Specified | | | |
|--|---|-----------------|-------|
| Symbol | Parameter | Value | Units |
| P_{PP} | Peak Pulse Power ($t_p=8/20\mu s$) See Figure 1 | 100 | Watts |
| T_J | Operating Temperature | -55°C to 150 °C | °C |
| T_{STG} | Storage Temperature | -55°C to 150°C | °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 |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |



Electrical Characteristics

| Part Numbers | V_{BR} | | | I_T | V_{RWM} | I_R | C |
|--------------|----------|------|------|-------|-----------|-------|--------------|
| | Min. | Typ. | Max. | | | | Typ. 0v bias |
| | V | V | V | | | | pF |
| RSDFS05C | 6.1 | 6.7 | 7.2 | 1 | 5.0 | 1 | 35 |
| RSDFS 12C | 13.3 | 14.5 | 15.0 | 1 | 12 | 1 | 30 |

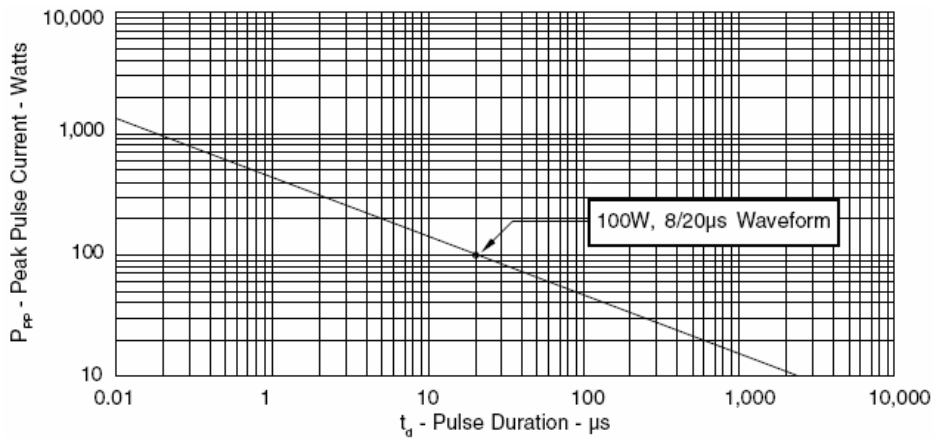


Figure 1 Peak Pulse Power VS Pulse Time

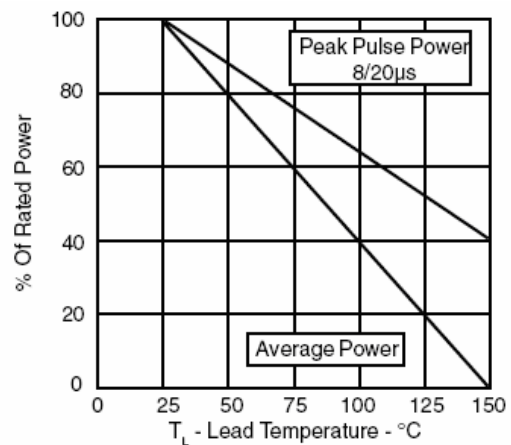
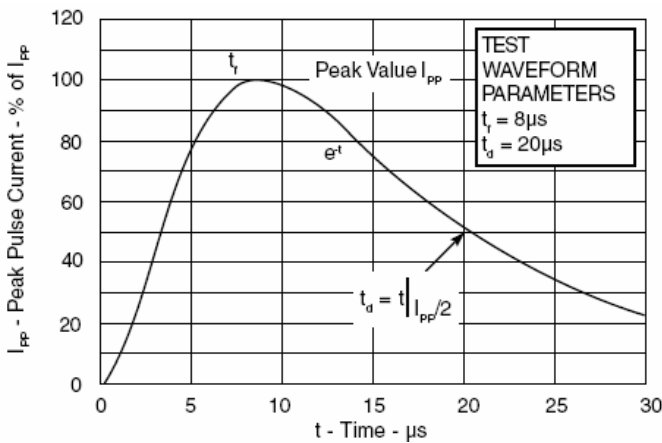


Figure 2 Pulse Wave Form

Figure 3 Power Derating Curve

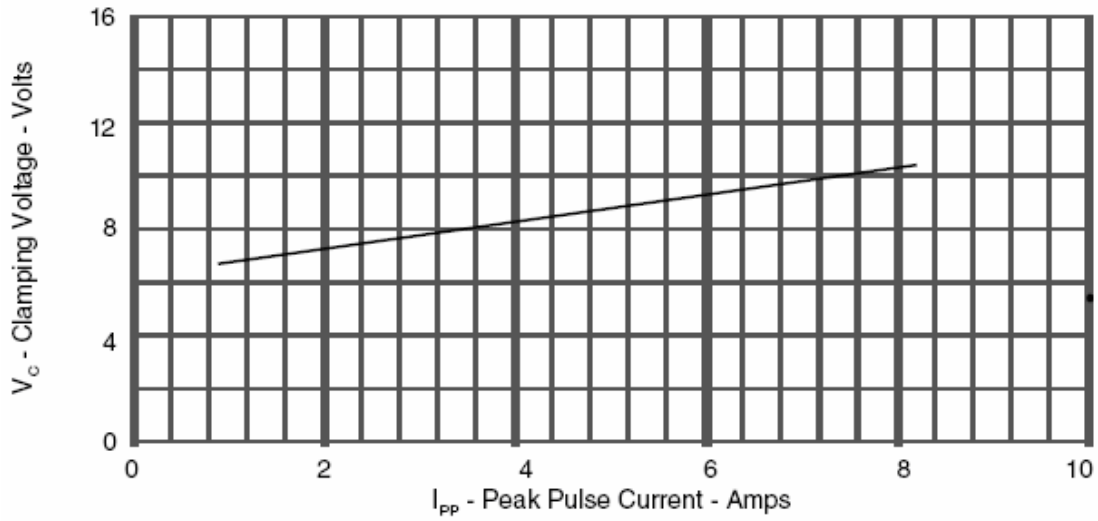
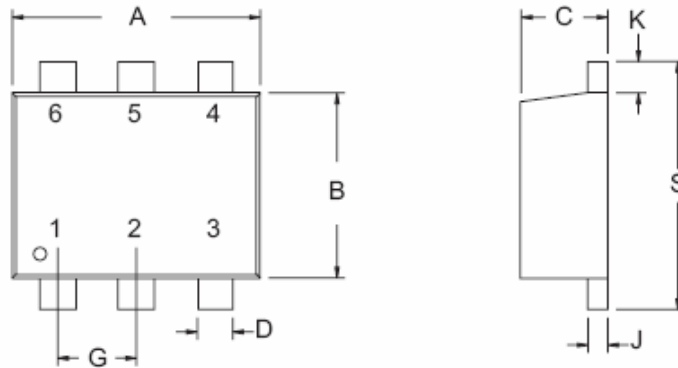


Figure 4 Typical Clamping Voltage VS Peak Pulse Current RSDFS05C

SOT-563 Mechanical Data

PACKAGE OUTLINE



PACKAGE DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|-----------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.50 | 1.70 | 0.059 | 0.067 |
| B | 1.10 | 1.30 | 0.043 | 0.051 |
| C | 0.50 | 0.60 | 0.020 | 0.024 |
| D | 0.17 | 0.27 | 0.007 | 0.011 |
| G | 0.50 BSC | - | 0.020 BSC | - |
| J | 0.08 | 0.16 | 0.003 | 0.007 |
| K | 0.10 | 0.30 | 0.004 | 0.012 |
| S | 1.50 | 1.70 | 0.059 | 0.067 |

Mounting Pad

| Typical | | |
|---------|-------------|--------|
| DIM | MILLIMETERS | INCHES |
| 1 | 0.30 | 0.012 |
| 2 | 1.02 | 0.040 |
| 3 | 0.51 | 0.020 |
| 4 | 1.40 | 0.055 |
| 5 | 0.51 | 0.020 |

