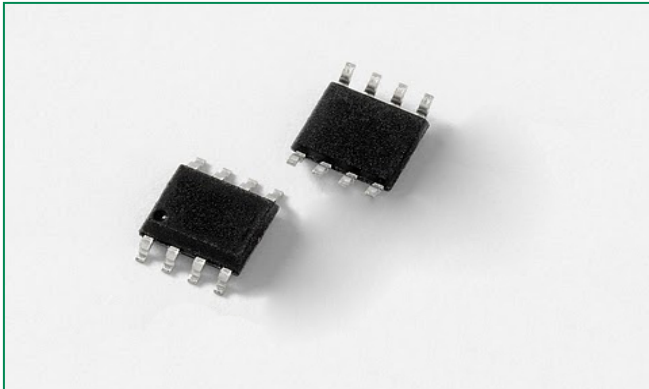


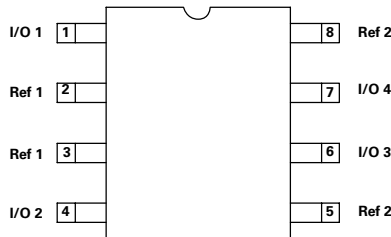
SRDA05 Series 8pF 30A Diode Array



Description

The SRDA05 integrates low capacitance rail-to-rail diodes with an additional zener diode to protect I/O pins against ESD and lightning induced surge events. This robust device can safely absorb up to 30A per IEC61000-4-5 ($t_p=8/20\mu s$) without performance degradation and a minimum $\pm 30kV$ ESD per IEC61000-4-2 international standard. Its low loading capacitance makes it ideal for high-speed interface protection.

Pinout



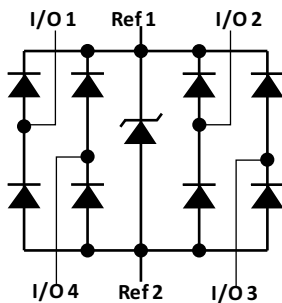
SOIC-8 (Top View)

Note: Pinout diagrams above shown as device footprint on circuit board.

Features

- Lightning protection, IEC61000-4-5, 30A (8/20 μs)
- EFT, IEC61000-4-4, 50A (5/50ns)
- ESD, IEC61000-4-2, $\pm 30kV$ contact, $\pm 30kV$ air
- Low clamping voltage
- Low leakage current
- SOIC-8 surface mount package (JEDEC MS-012)

Functional Block Diagram



Applications

- Tertiary (IC Side) Protection:
 - T1/E1/T3/E3
 - HDSD/SDSL
 - Ethernet
- RS232, RS485
- Video Line Protection
- Security Cameras
- Storage DVRs
- Network Equipment
- Instrumentation, Medical Equipment

Additional Information



Datasheet



Resources



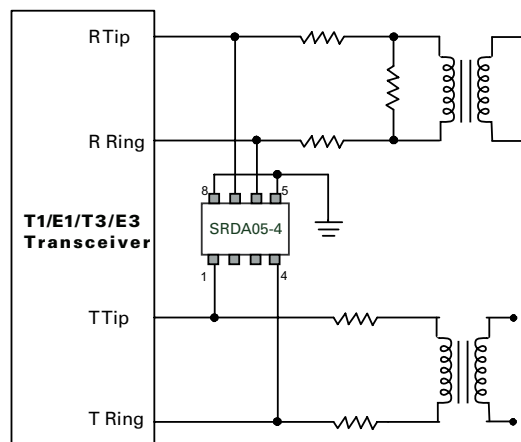
Samples

Life Support Note:

Not Intended for Use in Life Support or Life Saving Applications

The products shown herein are not designed for use in life sustaining or life saving applications unless otherwise expressly indicated.

Application Example



T1/E1/T3/E3 Interface Protection

Absolute Maximum Ratings

| Symbol | Parameter | Value | Units |
|------------|-----------------------------------|------------|-------|
| P_{pk} | Peak Pulse Power (8/20 μ s) | 600 | W |
| I_{pp} | Peak Pulse Current (8/20 μ s) | 30 | A |
| T_{op} | Operating Temperature | -40 to 125 | °C |
| T_{stor} | Storage Temperature | -55 to 150 | °C |

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

Thermal Information

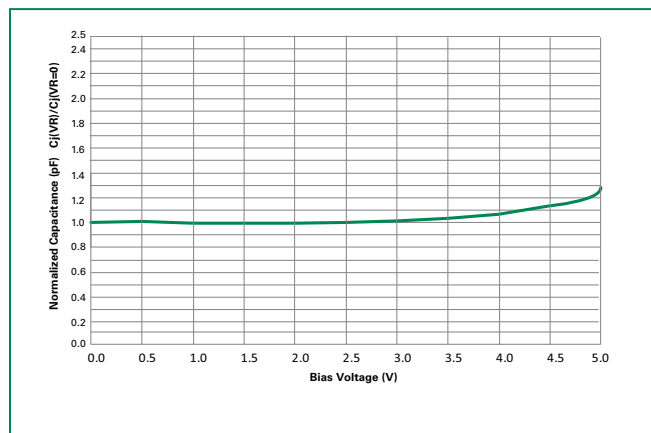
| Parameter | Rating | Units |
|---|------------|-------|
| SOIC Package | 170 | °C/W |
| Operating Temperature Range | -40 to 125 | °C |
| Storage Temperature Range | -55 to 150 | °C |
| Maximum Junction Temperature | 150 | °C |
| Maximum Lead Temperature (Soldering 20-40s) (SOIC - Lead Tips Only) | 260 | °C |

Electrical Characteristics ($T_{op} = 25^{\circ}C$)

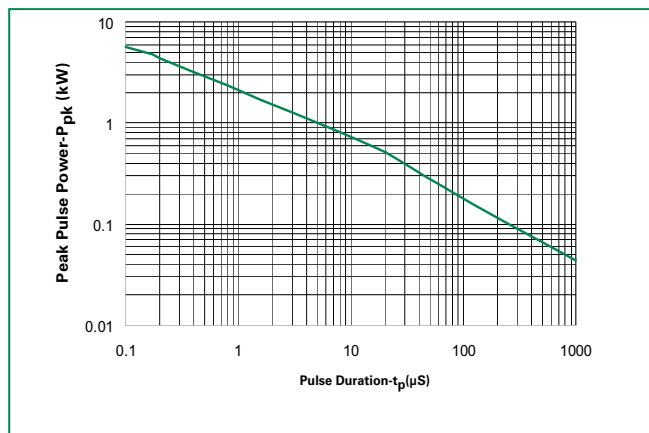
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Units |
|--|---------------|---|----------|------|-----|----------|
| Reverse Stand-Off Voltage | V_{RWM} | $I_t \leq 1\mu A$ | - | - | 5.0 | V |
| Reverse Leakage Current | I_R | $V_R = 5V$ | - | - | 10 | μA |
| Reverse Breakdown Voltage | V_{BR} | $I_t = 1mA$ | 6 | - | - | V |
| Clamping Voltage, Line-Ground ¹ | V_C | $I_{pp} = 1A, t_p = 8/20 \mu s$ | - | 9.2 | - | V |
| Clamping Voltage, Line-Ground ¹ | V_C | $I_{pp} = 2A, t_p = 8/20 \mu s$ | - | 10.0 | - | V |
| Clamping Voltage, Line-Ground ¹ | V_C | $I_{pp} = 10A, t_p = 8/20 \mu s$ | - | 14.5 | - | V |
| Clamping Voltage, Line-Ground ¹ | V_C | $I_{pp} = 25A, t_p = 8/20 \mu s$ | - | 21.0 | - | V |
| Dynamic Resistance, Line-Ground ¹ | R_{DYN} | $(V_{C2} - V_{C1}) / (I_{PP2} - I_{PP1})$ | - | 0.8 | - | Ω |
| ESD Withstand Voltage ¹ | V_{ESD} | IEC61000-4-2 (Contact Discharge) | ± 30 | - | - | kV |
| | | IEC61000-4-2 (Air Discharge) | ± 30 | - | - | kV |
| Diode Capacitance ¹ | $C_{I/O-I/O}$ | Reverse Bias=0V | - | 4.0 | - | pF |
| | $C_{I/O-GND}$ | Reverse Bias=0V | - | 8.0 | - | pF |

¹ Parameter is guaranteed by design and/or device characterization.

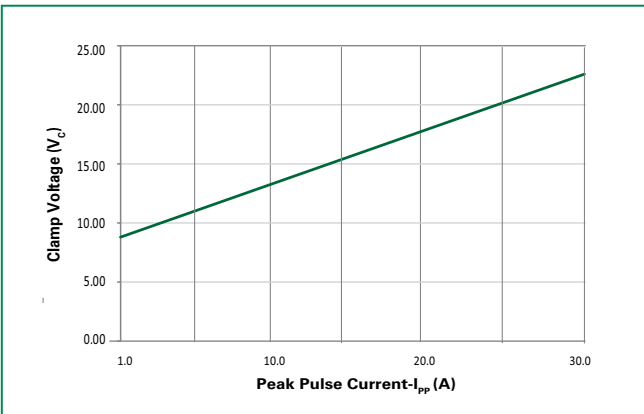
Normalized Capacitance vs. Bias Voltage



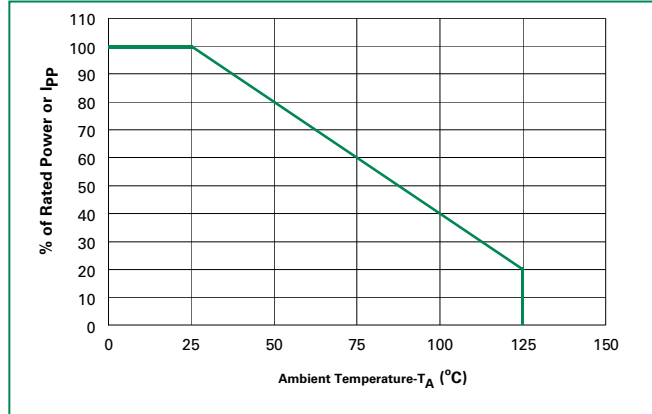
Non-Repetitive Peak Pulse Power vs. Pulse Time



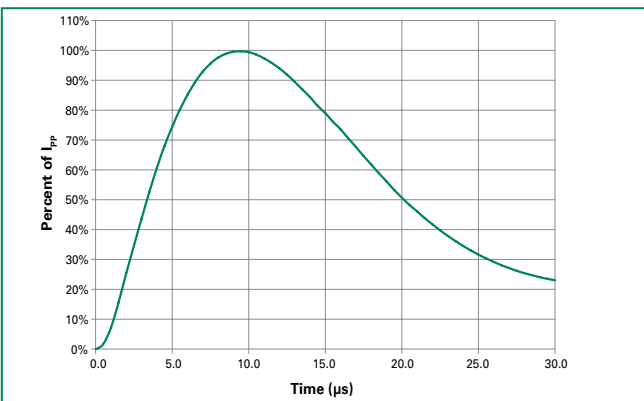
Clamping Voltage vs. I_{pp}



Power Derating Curve



Pulse Waveform



Product Characteristics

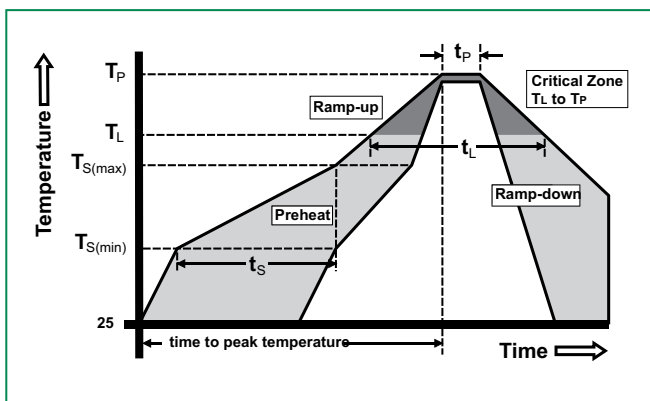
| | |
|----------------------------|-------------------------|
| Lead Plating | Matte Tin |
| Lead Material | Copper Alloy |
| Lead Coplanarity | 0.0004 inches (0.102mm) |
| Substitute Material | Silicon |
| Body Material | Molded Epoxy |
| Flammability | UL 94 V-0 |

Notes :

1. All dimensions are in millimeters
2. Dimensions include solder plating.
3. Dimensions are exclusive of mold flash & metal burr.
4. Blo is facing up for mold and facing down for trim/form, i.e. reverse trim/form.
5. Package surface matte finish VDI 11-13.

Soldering Parameters

| | | |
|--|------------------------------------|-------------------------|
| Reflow Condition | | Pb – Free assembly |
| Pre Heat | - Temperature Min ($T_{s(min)}$) | 150°C |
| | - Temperature Max ($T_{s(max)}$) | 200°C |
| | - Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus) Temp (T_L) to peak | | 3°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | - Temperature (T_L) (Liquidus) | 217°C |
| | - Temperature (t_l) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260 ^{+0/-5} °C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes Max. |
| Do not exceed | | 260°C |



Ordering Information

| Part Number | Package | Marking | Min. Order Qty. |
|-------------|---------|--------------------|-----------------|
| SRDA05-4BTG | SOIC-8 | LF SRDA05 SYYWW | 2500 |

单击下面可查看定价，库存，交付和生命周期等信息

[>>Littelfuse\(美国力特\)](#)