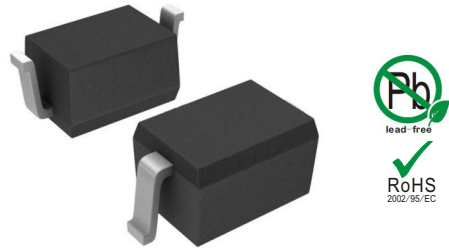


Features

- 350W peak pulse power (8/20us)
- Protects one data or power line
- Low leakage: nA level
- Stand-off Voltage: 3.3 V ~ 36 V
- Low clamping voltage
- RoHS Compliant



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 $\pm 30\text{kV}$ (contact) $\pm 30\text{kV}$ (air)
- IEC61000-4-4 (EFT) 40A (5/50ns)

SOD-323

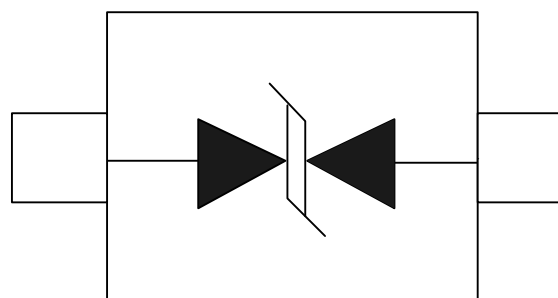
Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports.
- Peripherals

Mechanical Data

- Package: SOD-323
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

Schematic & PIN Configuration



SOD-323

Absolute Maximum Rating

| PTD322H450S3B35 | | | |
|-----------------------------------|---------------|--------------|--------------|
| Parameter | Symbol | Value | Unit |
| Peak Pulse Power (8/20 μ s) | Ppk | 350 | W |
| Peak Pulse Current (8/20 μ s) | Ipp | 20 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | \pm 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | \pm 30 | |
| Operating Temperature Range | TJ | -55 to +125 | $^{\circ}$ C |
| Storage Temperature Range | Tstg | -55 to +150 | $^{\circ}$ C |
| PTD322H200S5B35 | | | |
| Parameter | Symbol | Value | Unit |
| Peak Pulse Power (8/20 μ s) | Ppk | 350 | W |
| Peak Pulse Current (8/20 μ s) | Ipp | 17 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | \pm 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | \pm 30 | |
| Operating Temperature Range | TJ | -55 to +125 | $^{\circ}$ C |
| Storage Temperature Range | Tstg | -55 to +150 | $^{\circ}$ C |
| PTD322H75S12B35 | | | |
| Parameter | Symbol | Value | Unit |
| Peak Pulse Power (8/20 μ s) | Ppk | 350 | W |
| Peak Pulse Current (8/20 μ s) | Ipp | 11 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | \pm 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | \pm 30 | |
| Operating Temperature Range | TJ | -55 to +125 | $^{\circ}$ C |
| Storage Temperature Range | Tstg | -55 to +150 | $^{\circ}$ C |

Absolute Maximum Rating

| PTD322H68S15B35 | | | |
|-----------------------------------|---------------|--------------|--------------|
| Parameter | Symbol | Value | Unit |
| Peak Pulse Power (8/20 μ s) | Ppk | 350 | W |
| Peak Pulse Current (8/20 μ s) | Ipp | 10 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | ± 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 30 | |
| Operating Temperature Range | TJ | -55 to +125 | $^{\circ}$ C |
| Storage Temperature Range | Tstg | -55 to +150 | $^{\circ}$ C |
| PTD322H57S24B35 | | | |
| Parameter | Symbol | Value | Unit |
| Peak Pulse Power (8/20 μ s) | Ppk | 350 | W |
| Peak Pulse Current (8/20 μ s) | Ipp | 7 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | ± 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 30 | |
| Operating Temperature Range | TJ | -55 to +125 | $^{\circ}$ C |
| Storage Temperature Range | Tstg | -55 to +150 | $^{\circ}$ C |
| PTD322H35S36B35 | | | |
| Parameter | Symbol | Value | Unit |
| Peak Pulse Power (8/20 μ s) | Ppk | 350 | W |
| Peak Pulse Current (8/20 μ s) | Ipp | 5 | A |
| ESD per IEC 61000-4-2 (Air) | VESD | ± 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 30 | |
| Operating Temperature Range | TJ | -55 to +125 | $^{\circ}$ C |
| Storage Temperature Range | Tstg | -55 to +150 | $^{\circ}$ C |

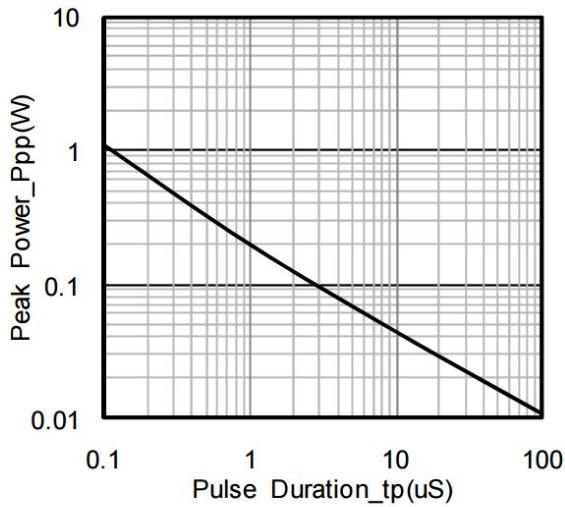
Absolute Maximum Rating

| PTD322H450S3B35 | | | | | | |
|-------------------------|-----------|------|-----|-----|---------------|--|
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
| Reverse Working Voltage | V_{RWM} | | | 3.3 | V | |
| Breakdown Voltage | V_{BR} | 4.0 | | | V | $I_T = 1\text{mA}$ |
| Reverse Leakage Current | I_R | | | 40 | μA | $V_{RWM} = 3.3\text{V}$ |
| Clamping Voltage | V_C | | 7 | | V | $I_{PP} = 1\text{A}$ (8 x 20 μs pulse) |
| Clamping Voltage | V_C | | | 19 | V | $I_{PP} = 20\text{A}$ (8 x 20 μs pulse) |
| Junction Capacitance | C_J | | 450 | | pF | $V_R = 0\text{V}$, $f = 1\text{MHz}$ |
| PTD322H200S5B35 | | | | | | |
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
| Reverse Working Voltage | V_{RWM} | | | 5 | V | |
| Breakdown Voltage | V_{BR} | 6.2 | | | V | $I_T = 1\text{mA}$ |
| Reverse Leakage Current | I_R | | | 10 | μA | $V_{RWM} = 5\text{V}$ |
| Clamping Voltage | V_C | | 9.8 | | V | $I_{PP} = 1\text{A}$ (8 x 20 μs pulse) |
| Clamping Voltage | V_C | | | 21 | V | $I_{PP} = 17\text{A}$ (8 x 20 μs pulse) |
| Junction Capacitance | C_J | | 200 | | pF | $V_R = 0\text{V}$, $f = 1\text{MHz}$ |
| PTD322H75S12B35 | | | | | | |
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
| Reverse Working Voltage | V_{RWM} | | | 12 | V | |
| Breakdown Voltage | V_{BR} | 13.3 | | | V | $I_T = 1\text{mA}$ |
| Reverse Leakage Current | I_R | | | 1 | μA | $V_{RWM} = 12\text{V}$ |
| Clamping Voltage | V_C | | 19 | | V | $I_{PP} = 1\text{A}$ (8 x 20 μs pulse) |
| Clamping Voltage | V_C | | | 32 | V | $I_{PP} = 11\text{A}$ (8 x 20 μs pulse) |
| Junction Capacitance | C_J | | 75 | | pF | $V_R = 0\text{V}$, $f = 1\text{MHz}$ |

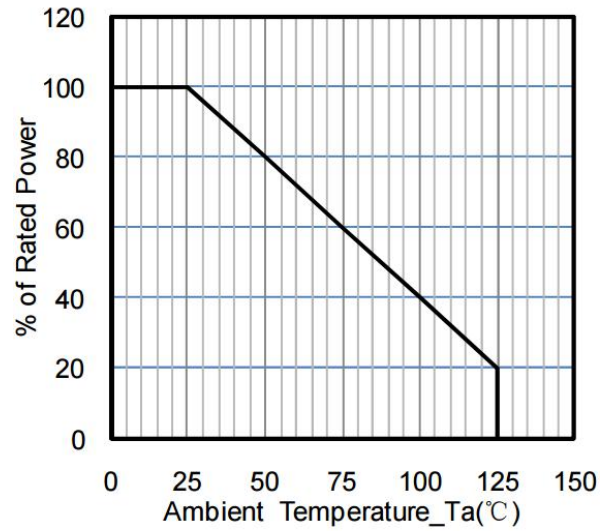
Absolute Maximum Rating

| PTD322H68S15B35 | | | | | | |
|-------------------------|-----------|------|-----|-----|---------------|--|
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
| Reverse Working Voltage | V_{RWM} | | | 15 | V | |
| Breakdown Voltage | V_{BR} | 16.7 | | | V | $I_T = 1\text{mA}$ |
| Reverse Leakage Current | I_R | | | 1 | μA | $V_{RWM} = 15\text{V}$ |
| Clamping Voltage | V_C | | 24 | | V | $I_{PP} = 1\text{A}$ (8 x 20 μs pulse) |
| Clamping Voltage | V_C | | | 38 | V | $I_{PP} = 10\text{A}$ (8 x 20 μs pulse) |
| Junction Capacitance | C_J | | 68 | | pF | $V_R = 0\text{V}$, $f = 1\text{MHz}$ |
| PTD322H57S24B35 | | | | | | |
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
| Reverse Working Voltage | V_{RWM} | | | 24 | V | |
| Breakdown Voltage | V_{BR} | 26.7 | | | V | $I_T = 1\text{mA}$ |
| Reverse Leakage Current | I_R | | | 1 | μA | $V_{RWM} = 24\text{V}$ |
| Clamping Voltage | V_C | | 43 | | V | $I_{PP} = 1\text{A}$ (8 x 20 μs pulse) |
| Clamping Voltage | V_C | | | 52 | V | $I_{PP} = 7\text{A}$ (8 x 20 μs pulse) |
| Junction Capacitance | C_J | | 57 | | pF | $V_R = 0\text{V}$, $f = 1\text{MHz}$ |
| PTD322H35S36B35 | | | | | | |
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
| Reverse Working Voltage | V_{RWM} | | | 36 | V | |
| Breakdown Voltage | V_{BR} | 40 | | | V | $I_T = 1\text{mA}$ |
| Reverse Leakage Current | I_R | | | 1 | μA | $V_{RWM} = 36\text{V}$ |
| Clamping Voltage | V_C | | 63 | | V | $I_{PP} = 1\text{A}$ (8 x 20 μs pulse) |
| Clamping Voltage | V_C | | | 80 | V | $I_{PP} = 5\text{A}$ (8 x 20 μs pulse) |
| Junction Capacitance | C_J | | 35 | | pF | $V_R = 0\text{V}$, $f = 1\text{MHz}$ |

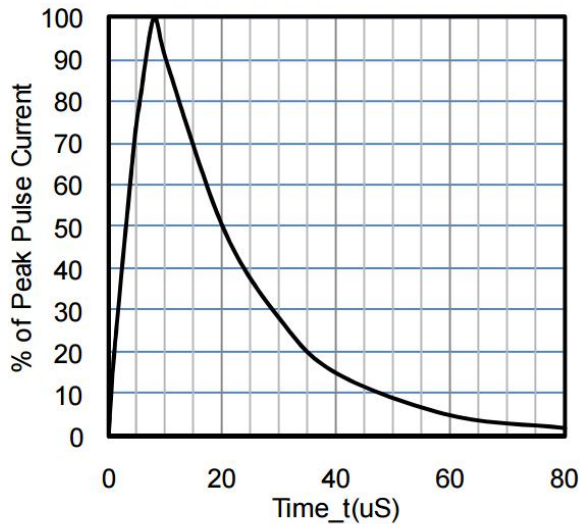
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



Peak Pulse Power vs. Pulse Time

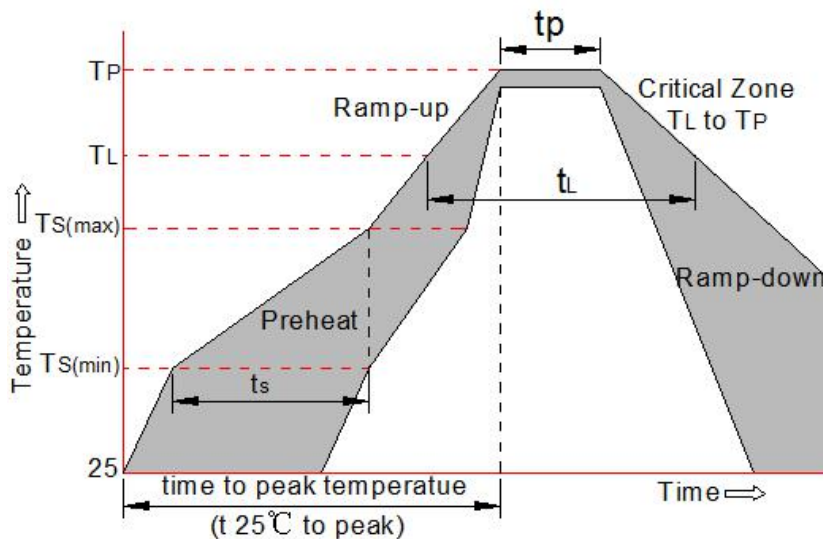


Power Derating Curve

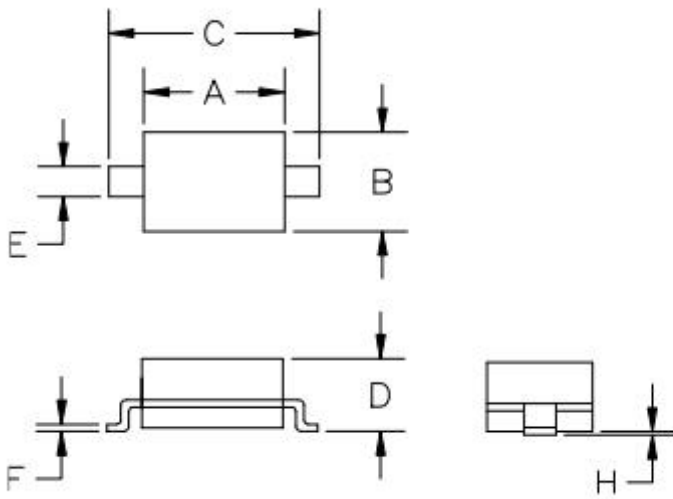


8 X 20uS Pulse Waveform

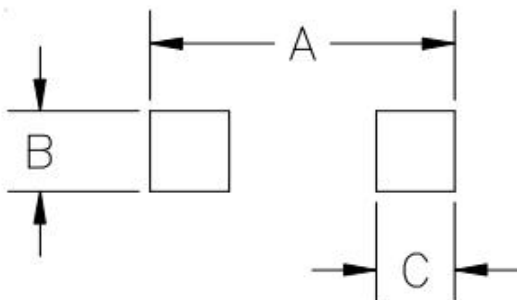
| Reflow Condition | | Pb-Free assembly (see as below) |
|---|-----------------------------------|------------------------------------|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150°C |
| | -Temperature Max($T_{s(max)}$) | +200°C |
| | -Time (Min to Max) (t_s) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3°C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/sec. Max |
| Reflow | -Temperature(T_L) (Liquid us) | +217°C |
| | -Temperature(t_L) | 60-150 secs. |
| Peak Temp (T_p) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6°C/sec. Max |
| Time 25°C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260°C |



Outline Drawing



| SYM | DIMENSIONS | | | |
|-----|-------------|------|--------|-------|
| | MILLIMETERS | | INCHES | |
| | MIN | MAX | MIN | MAX |
| A | 1.50 | 1.80 | 0.060 | 0.071 |
| B | 1.20 | 1.40 | 0.045 | 0.054 |
| C | 2.30 | 2.70 | 0.090 | 0.107 |
| D | - | 1.10 | - | 0.043 |
| E | 0.30 | 0.40 | 0.012 | 0.016 |
| F | 0.10 | 0.25 | 0.004 | 0.010 |
| H | - | 0.10 | - | 0.004 |



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| A | 3.15 | 0.120 |
| B | 0.80 | 0.031 |
| C | 0.80 | 0.031 |

Ordering information

| Order code | Package | Base qty | Delivery mode |
|--------------|---------|----------|---------------|
| PTD322HXXB35 | SOD323 | 3K | Tape and reel |