

SOD-323 Plastic-Encapsulate ESD Protection Diodes

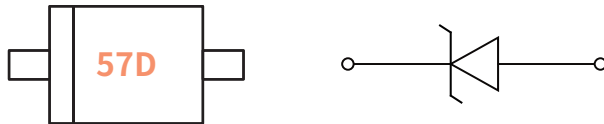
● Features

- Low leakage current
- SOD-323 surface mount package
- IEC 61000-4-2 (ESD Air): $\pm 30\text{kV}$
- IEC 61000-4-2 (ESD Contact): $\pm 30\text{kV}$
- IEC 61000-4-5 (Lightning 8/20 μs): 120A

● Applications

- Mobile Phones and Accessories
- Battery Protection
- Power Supply Protection
- Hand Held Portable Applications
- Peripherals

● Function Diagram



Reverse Working Voltage
15 V Max.
High capacitance
300 pF(Typ.)

SOD-323

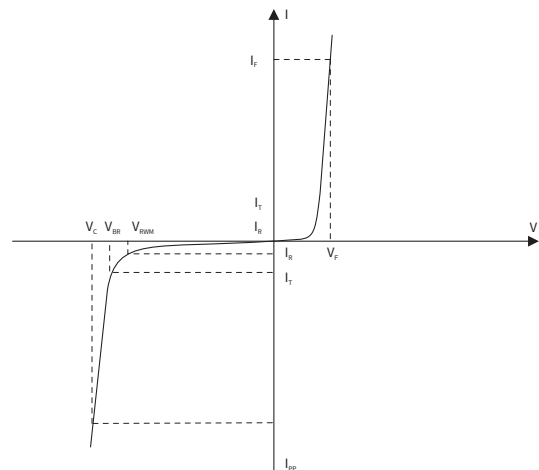


● Maximum Ratings (Ta=25°C Unless otherwise specified)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-------------------------------------|---------------------------------|-------------|------|
| V _{ESD} | Electrostatic Discharge Voltage | ESD per IEC 61000-4-2(Air) | ± 30 | KV |
| | | ESD per IEC 61000-4-2(Contact) | ± 30 | KV |
| P _{PP} | Peak Pulse Power | tp = 8/20 μs | 4320 | W |
| I _{PP} | Rated Peak Pulse Current | tp = 8/20 μs | 120 | A |
| T _J | Operating JunctionTemperature Range | — | -55 to +125 | °C |
| T _{STG} | Operating JunctionTemperature Range | — | -55 to +150 | °C |

● Electrical Parameter

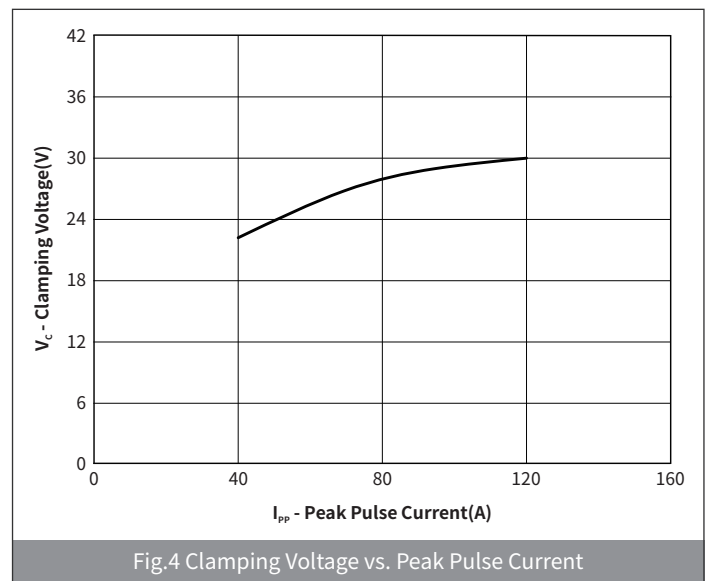
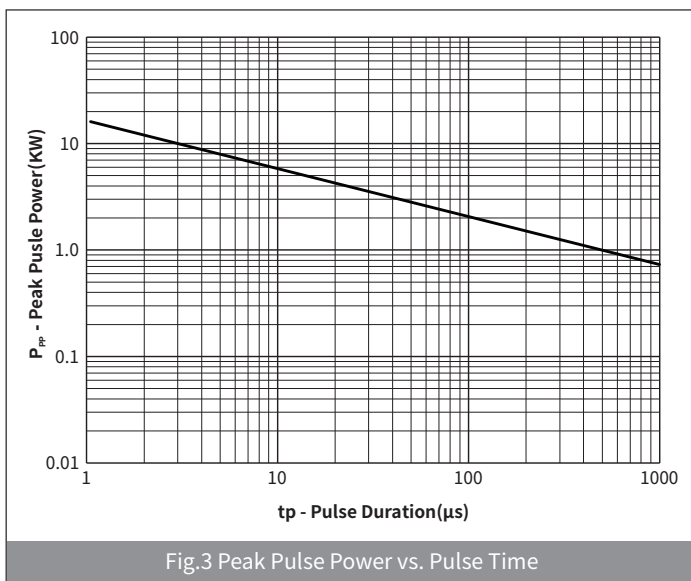
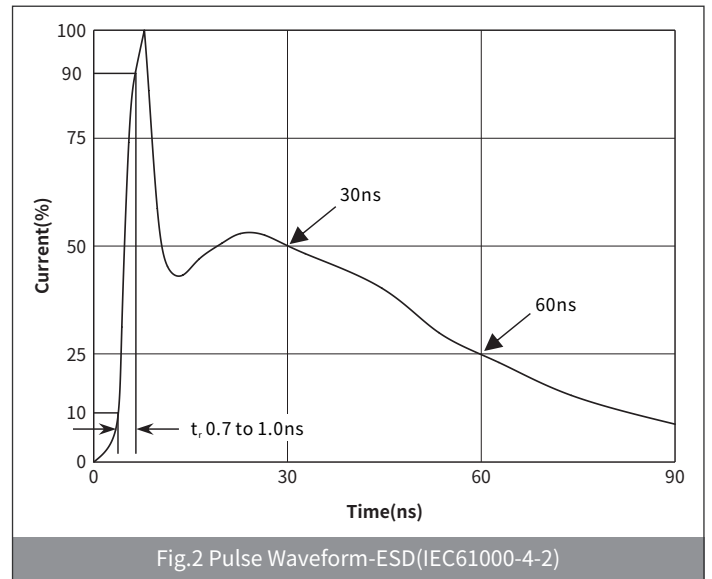
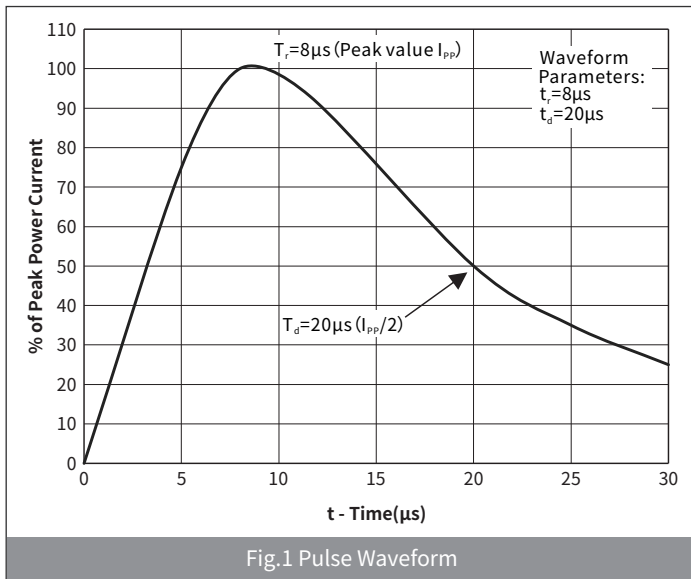
| SYMBOL | PARAMETER |
|------------------|--|
| V _C | Clamping Voltage @ I _{PP} |
| V _{BR} | Breakdown Voltage @ I _T |
| I _{PP} | Peak Pulse Current |
| I _T | Test Current |
| I _R | Reverse Leakage Current @ VRWM |
| V _{RWM} | Peak Reverse Working Voltage |
| P _{PP} | Peak Pulse Power Dissipation |
| C _J | Junction Capacitance @ V _R =0V,f=1MHz |
| I _F | Forward Current |
| V _F | Forward Voltage @I _F |



Electrical Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | CONDITION | Min | Typ | Max | UNIT |
|------------------------------|-----------|---|------|-----|------|---------------|
| Peak Reverse Working Voltage | V_{RWM} | $T_a=25^\circ\text{C}$ | — | — | 15 | V |
| Breakdown Voltage | V_{BR} | $I_R=1.0\text{mA}, T_a=25^\circ\text{C}$ | 16.7 | — | 19.3 | V |
| Reverse Leakage Current | I_R | $V_R=15\text{V}, T_a=25^\circ\text{C}$ | — | — | 1.0 | μA |
| Clamping Voltage | V_C | $I_{PP}=40\text{A}, t_p=8/20\mu\text{s}$ | — | 22 | 26 | V |
| | | $I_{PP}=120\text{A}, t_p=8/20\mu\text{s}$ | — | 30 | 36 | |
| Junction Capacitance | C_J | $V_R=0\text{V}, f=1\text{MHz}$ | — | 300 | 400 | pF |

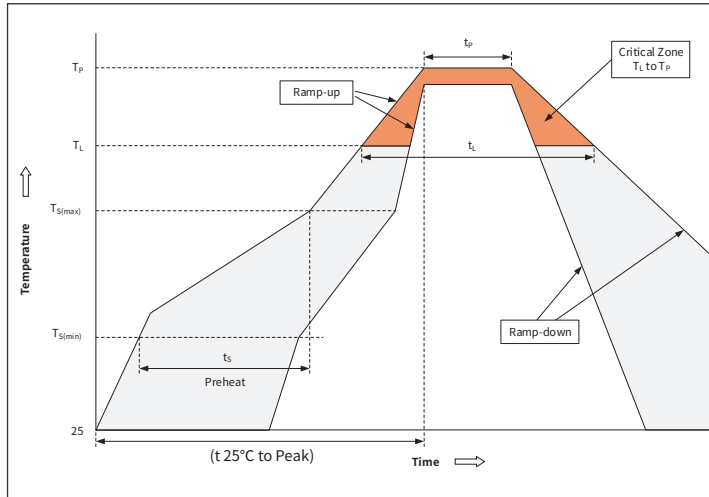
Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



Ordering Information

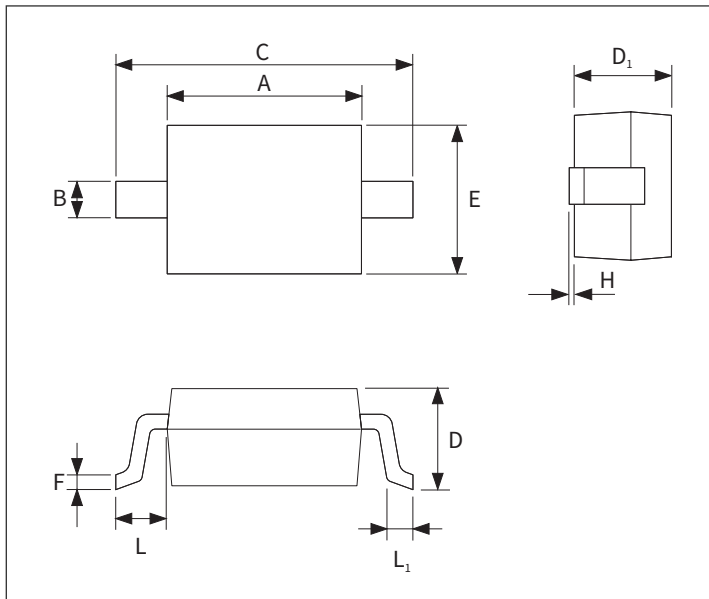
| PREFERED P/N | PACKAGE | SIZE(mm) | DELIVERY MODE | MPQ(PCS) |
|--------------|---------|----------------|---------------|----------|
| H15VHD3U | SOD-323 | 2.55×1.30×0.95 | 7" REEL | 3000 |

Recommended Soldering Conditions



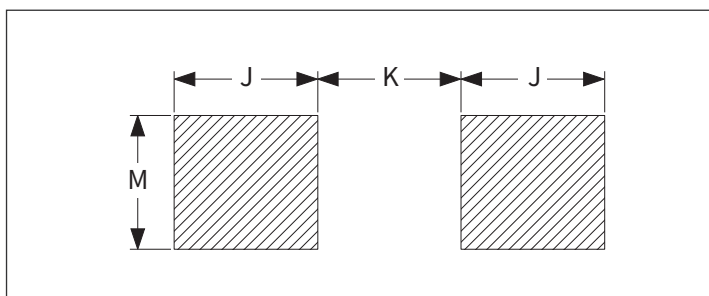
| Profile Feature | | Pb-Free Assembly |
|---|-----------------------------------|------------------|
| Pre-heat | Temperature Min ($T_{S(min)}$) | +150°C |
| | Temperature Max ($T_{S(max)}$) | +200°C |
| | Time (Min to Max) (t_s) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 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) | | 20-40secs |
| Ramp-down Rate | | 6°C/sec. Max |
| Time 25°C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260°C |

Package Outline Dimensions (SOD-323)



| Symbol | Dimensions | | | |
|----------------|-------------|------|----------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 1.60 | 1.80 | 0.063 | 0.071 |
| B | 0.25 | 0.40 | 0.010 | 0.016 |
| C | 2.30 | 2.80 | 0.091 | 0.110 |
| D | 0.80 | 1.10 | 0.031 | 0.043 |
| D ₁ | 0.80 | 0.90 | 0.031 | 0.035 |
| E | 1.20 | 1.40 | 0.047 | 0.055 |
| F | 0.08 | 0.18 | 0.003 | 0.007 |
| L | 0.475REF | | 0.019REF | |
| L ₁ | 0.25 | 0.40 | 0.010 | 0.016 |
| H | - | 0.14 | - | 0.006 |

Suggested Pad Layout



| Symbol | Dimensions | | | |
|--------|-------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| J | 0.80 | - | 0.031 | - |
| K | - | 1.40 | - | 0.055 |
| M | 0.80 | - | 0.031 | - |