

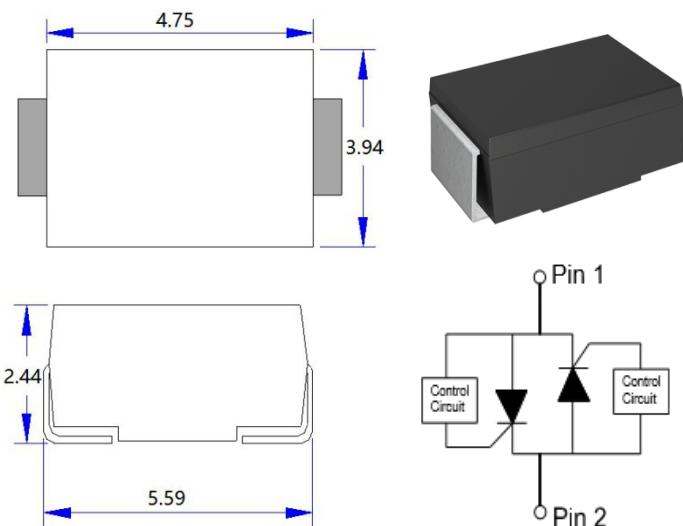
Description

This device has been especially designed to protect 1 low voltage or signal line, as well as classical RS-485 interface, against transient over-voltages. ESD-voltages are clamped by 2 TVS diodes. Surges are suppressed by 2 thyristors, their breakdown voltage close to 25V, then their leakage current as low as 1uA. This devices are not subject to ageing and provide a fail safe mode in short circuit for a better protection. WPM are used to help equipment to meet various standards such as IEC950 / CSA C22.2 and FCC part68.

Features

- Integrated the two TVS diodes and two thyristor
- Accurate voltage of protection
- Low switching voltages: V_{BR}
- Low leakage current: $I_R = 2 \mu A$ max
- High Peak pulse current
- Solid-state silicon technology
- Meets MSL 1 Requirements
- ROHS compliant

Dimensions & Symbol (Unit: mm Max)



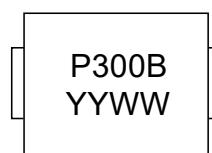
Mechanical Characteristics

- Package: SMB/DO-214AA
- Case Material: "Green" Molding Compound.
- Standard Packaging: 12mm tape (EIA STD RS-481)
- Weight: 0.10g
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- RS-485 interface
- Telecommunications infrastructure
- PBX's and other switches
- FCC Part 68 Customer Premise Equipment
- Set-top box ,CATV lines
- Ammeter

Marking Information



P300B = Device Marking Code
YYWW = Date Code

Ordering Information

| Out line | Reel (pcs) | Reel diameters (mm) |
|----------|------------|---------------------|
| Taping | 3K | 330 |

Absolute Maximum ratings ($T_A=25^\circ\text{C}$, RH=45%-75%, unless otherwise noted)

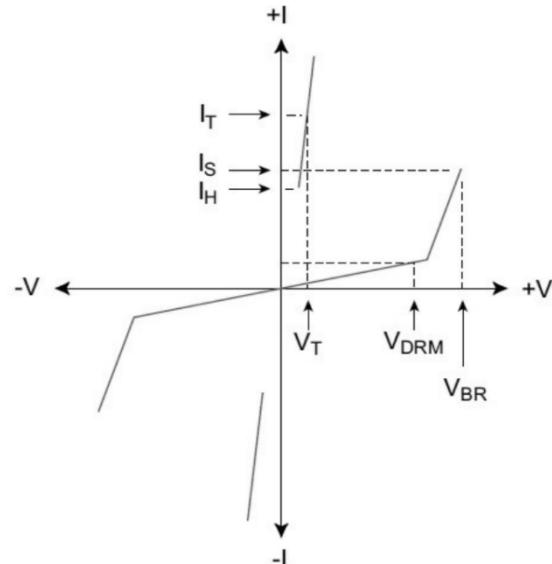
| Parameter | Symbol | Value | Unit |
|--------------------------------------|------------------|-------------|------|
| Storage temperature range | T_{stg} | -40 to +150 | °C |
| Operating junction temperature range | T_j | -40 to +150 | °C |
| Repetitive peak pulse current | I_{PP} | 100 | A |

Electrical Characteristics ($T_A=25^\circ\text{C}$)

| Part Number | V_{RM} | I_{RM} | V_{BO} | I_{BO} | V_T | I_T | C_O | I_H |
|-------------|-----------------|-----------------|-----------------|-----------------|-------|-------|-------|-------|
| | Min. | Max. | Max. | | Max. | | Max. | Typ. |
| | V | uA | V | mA | V | A | pF | mA |
| WP61300B | 25 | 5 | 40 | 800 | 4 | 2.2 | 75 | 50 |

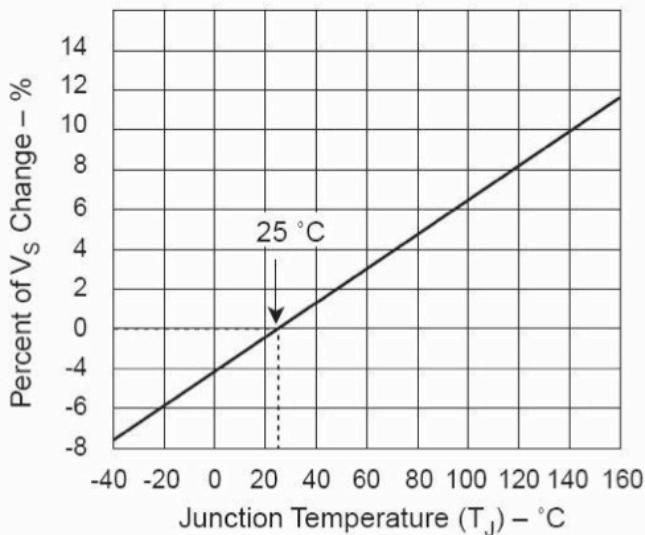
Electrical Parameters & V-I Curve

| Symbol | Parameter |
|------------------|------------------------|
| V_{DRM} | Peak off-state voltage |
| I_{DRM} | Off-state current |
| V_s | Switching voltage |
| I_s | Switching current |
| V_T | On-state voltage |
| I_T | On-state current |
| I_H | Holding current |
| C_O | Off-state capacitance |

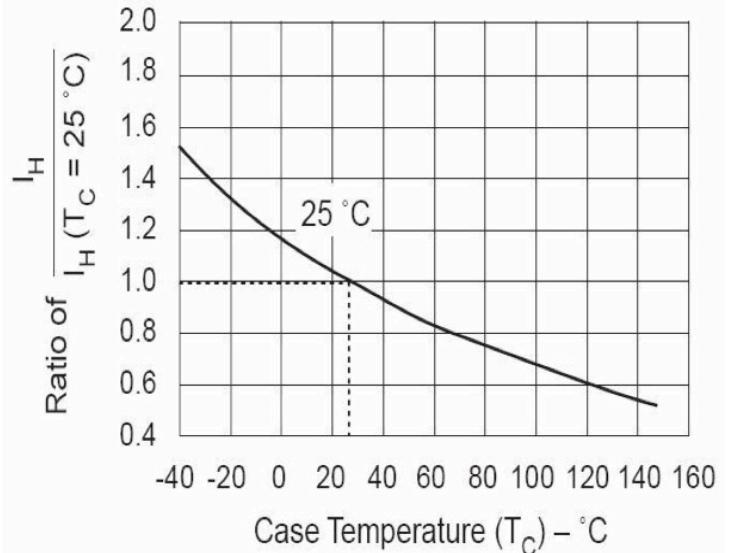

Surge Ratings

| Series | I_{PP} (A) min | | | |
|--------|-------------------------|--------|---------|-----------|
| | 2×10us | 8×20us | 5×320us | 10×1000us |
| B | 250 | 250 | 100 | 80 |

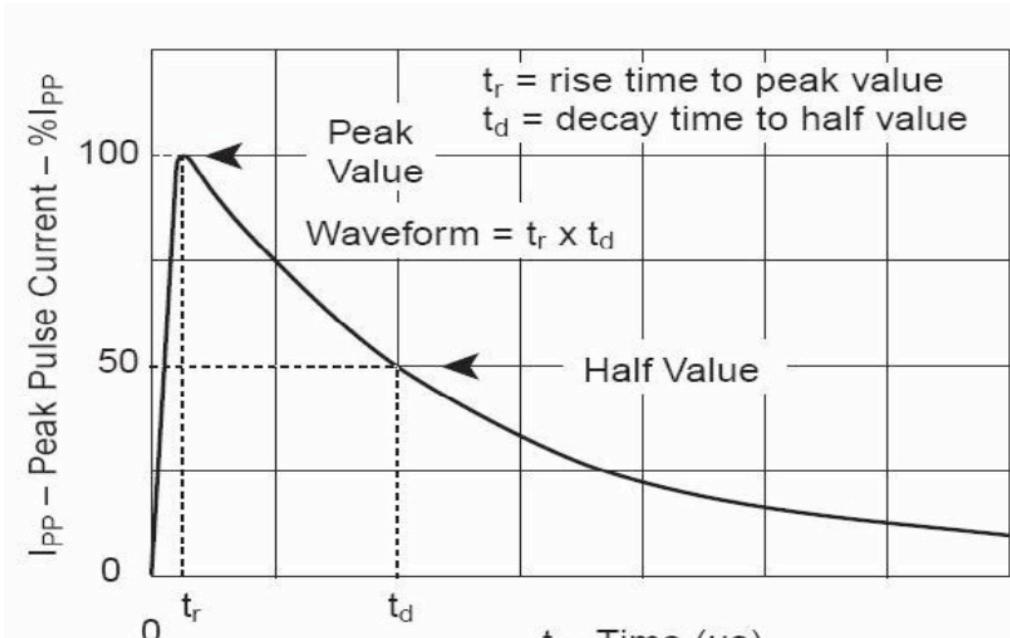
Electrical Characteristics Curves



Normalized V_s Change – Junction Temperature

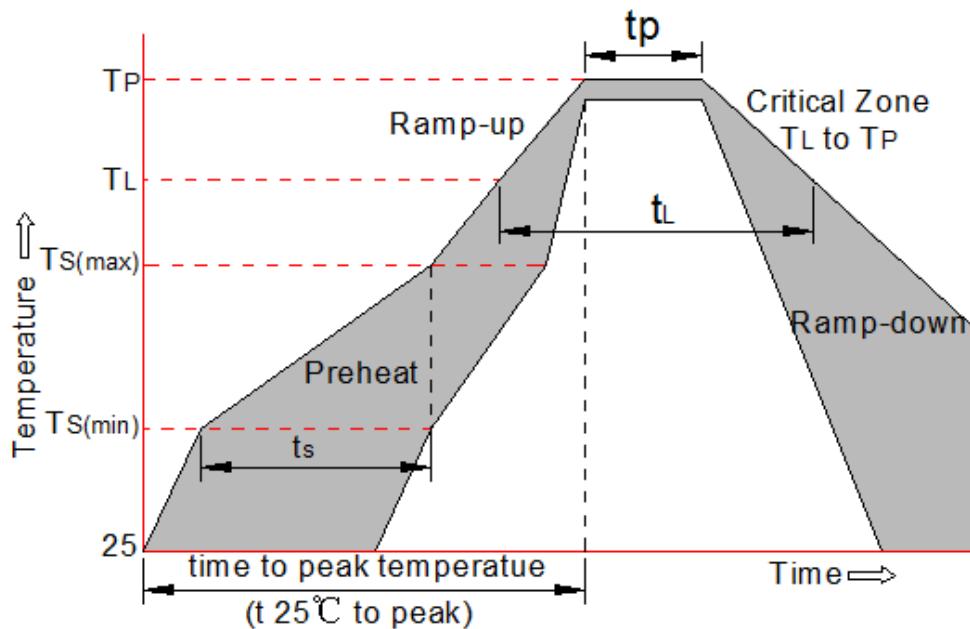


Normalized DC Holding Current



Tr -td Puls Wave-form

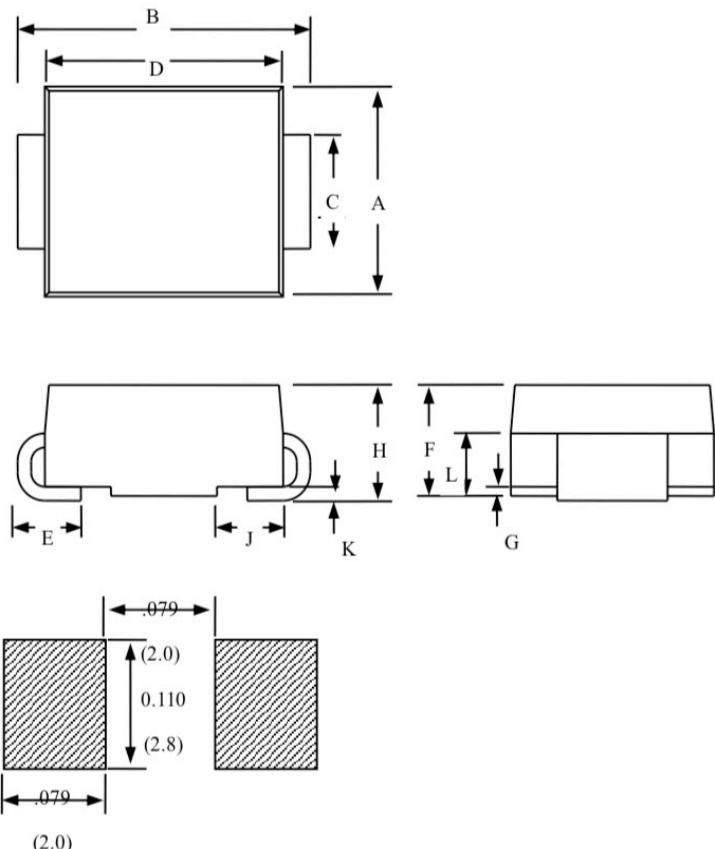
Soldering Parameters



| 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) (ts) | 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 _p) | 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 |

Package Mechanical Data (SMB)

| Dimension | Inches | | Millimeters | |
|-----------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.134 | 0.155 | 3.40 | 3.94 |
| B | 0.205 | 0.22 | 5.21 | 5.59 |
| C | 0.075 | 0.083 | 1.90 | 2.11 |
| D | 0.166 | 0.185 | 4.22 | 4.70 |
| E | 0.036 | 0.056 | 0.91 | 1.42 |
| F | 0.073 | 0.087 | 1.85 | 2.2 |
| G | 0.002 | 0.008 | 0.05 | 0.20 |
| H | 0.077 | 0.094 | 1.95 | 2.40 |
| J | 0.043 | 0.053 | 1.09 | 1.35 |
| K | 0.008 | 0.014 | 0.20 | 0.35 |
| L | 0.039 | 0.049 | 0.99 | 1.24 |



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