

SuperTSS –Thyristor Surge Suppressor

1. Features

- Excellent capability of absorbing transient surge
- Quick response to surge voltage (ns Level)
- Non degenerative
- Eliminates overvoltage caused by fast rising transients
- Bi-directional
- Rating Surge Voltage:4KV (10/700μs)

2. Application Information

- RS485/232/422

3. Ordering Information

| Part Number | Package | Material | Packing | Quantity per reel | Flammability Rating | Reel Size |
|---------------------|---------|--------------|-------------|-------------------|---------------------|-----------|
| ES0080SBS-ES4200SBS | SMB | Halogen free | Tape & Reel | 3,000 PCS | UL 94V-0 | 13 inches |

Table-1 Ordering Information

4. Package and marking information



| Circuit Diagram | Outline | Marking instructions |
|---|---|--|
|  |  | ES = Manufacturer log |
| | | XXXXX= Product type marking code (Refer to Table-3) |
| | | ABBC = Date code marking |

Table-2 Package and marking information

5. Part Number and Electrical Parameter

Absolute maximum ratings measured at $T_A = 25^\circ\text{C}$ RH = 45%-75% (unless otherwise noted).

| Part Number | Marking Code | $I_{\text{DRM}} @ V_{\text{DRM}}$ | | $V_s^{①} @ I_s$ | | $V_T @ I_T$ | | I_H | | $C_o^{②}$ |
|-------------|--------------|-----------------------------------|-----|-----------------|-----|-------------|-----|-------|-----|-----------|
| | | μA | V | V | mA | V | A | mA | | pF |
| | | MAX | | MAX | | MAX | | MIN | MAX | TYP |
| ES0080SBS | 08SBS | 5 | 6 | 25 | 800 | 4 | 2.2 | 10 | 150 | 60 |
| ES0300SBS | 30SBS | 5 | 25 | 40 | 800 | 4 | 2.2 | 50 | 150 | 55 |
| ES0640SBS | 64SBS | 5 | 58 | 77 | 800 | 4 | 2.2 | 125 | 350 | 55 |
| ES3100SBS | 31SBS | 5 | 275 | 350 | 800 | 4 | 2.2 | 120 | 350 | 45 |
| ES3500SBS | 35SBS | 5 | 320 | 400 | 800 | 4 | 2.2 | 120 | 350 | 35 |
| ES4200SBS | 42SBS | 5 | 408 | 480 | 800 | 4 | 2.2 | 0 | 50 | 35 |

Table-3 Part Number and Electrical Parameter

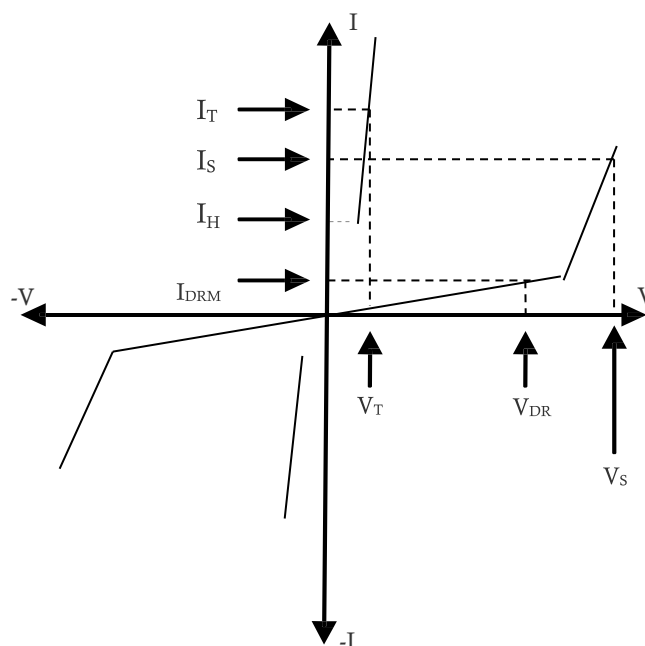
NOT:

① V_s is measured at 100KV/S

② Off-state Capacitance is measured at $V_{\text{DC}}=2\text{V}$, $V_{\text{RMS}}=1\text{V}$, $f=1\text{MHz}$

6. V-I Curve

| Parameters | Definition |
|------------|------------------------|
| V_{DRM} | Peak Off-state Voltage |
| I_{DRM} | Off-state Current |
| V_S | Switching Voltage |
| I_S | Switching Current |
| I_H | Holding Current |
| V_T | On-state Voltage |
| I_T | On-state Current |
| C_O | Off-state Capacitance |



7. Surge Ratings

| | | |
|------------------|----------------|-----------------|
| Current Waveform | 8/20 μ s | 5/320 μ s* |
| Voltage Waveform | 1.2/50 μ s | 10/700 μ s* |
| I_{pp} | 250A | 100A |

Table-4 Surge Ratings

-Peak pulse current rating (IPP) is repetitive and guaranteed for the life of the product;

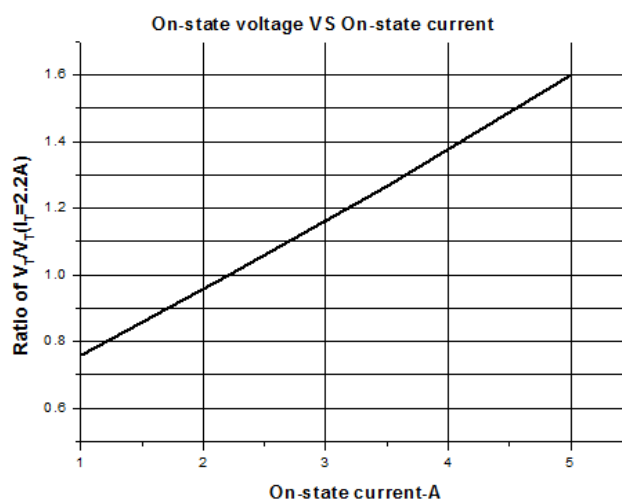
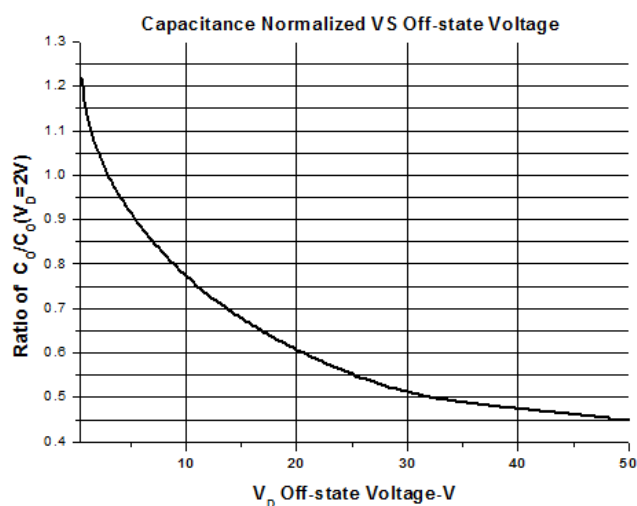
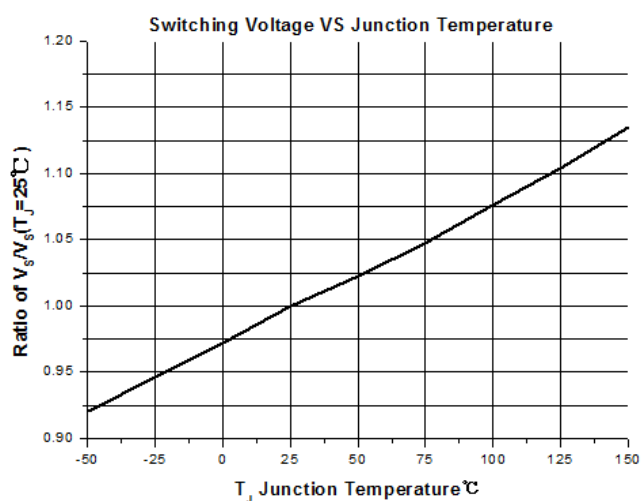
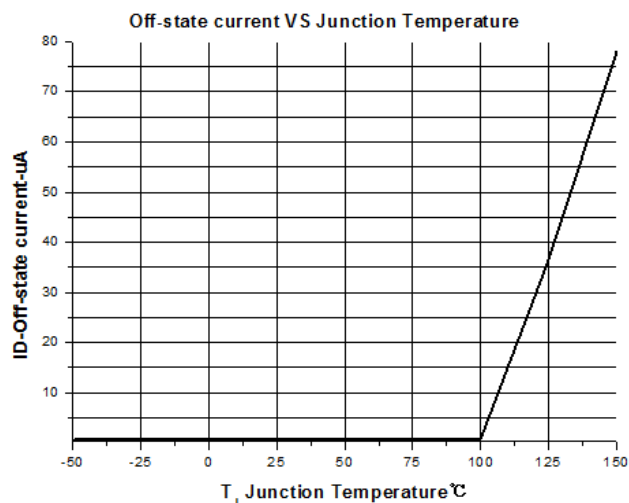
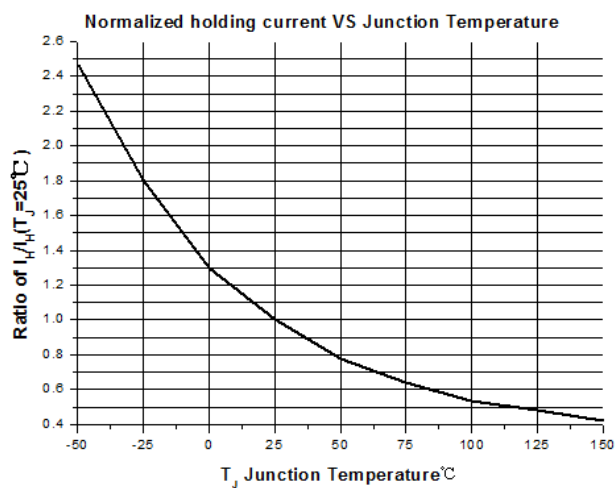
-Elecsuper only makes the test for 5/320 μ s@100A* (10/700 μ s@4KV), but for other IPP value derived from experience is just for reference only. Elecsuper will not take any obligation for these parameters, so before applying our parts, please make sure to verify the parameters listed in the above table.

8. Thermal Considerations

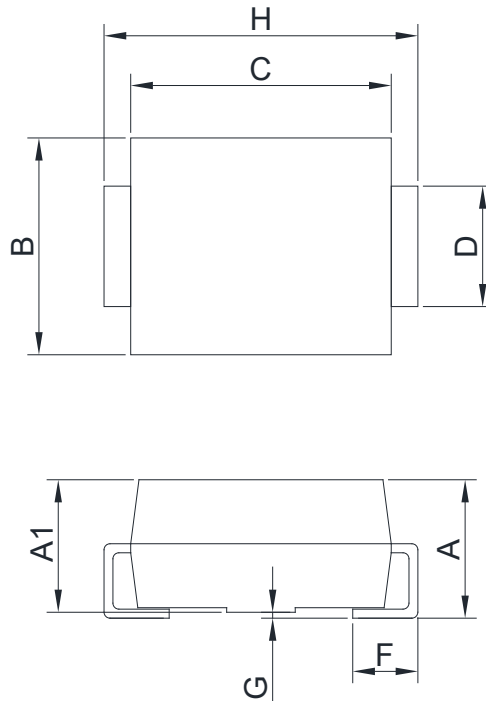
| Symbol | Parameter | Value | Unit |
|--------|--------------------------------------|-------------|--------------------|
| T_J | Operating Junction Temperature Range | -40 to +150 | $^{\circ}\text{C}$ |
| T_S | Storage Temperature Range | -55 to +150 | $^{\circ}\text{C}$ |

Table-5 Thermal Considerations

9. Typical Characteristics



10. Dimension (SMB)



| REF | Millimeters | | REF | Millimeters | |
|-----|-------------|------|-----|-------------|------|
| | MIN | MAX | | MIN | MAX |
| A | 2.15 | 2.45 | D | 1.90 | 2.10 |
| A1 | 2.10 | 2.30 | F | 0.90 | 1.30 |
| B | 3.40 | 3.80 | G | 0.00 | 0.20 |
| C | 4.25 | 4.65 | H | 5.10 | 5.50 |

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