

TOSHIBA Thyristor Silicon Planar Type

S 6 9 9 2

Condenser Discharge Control Applications

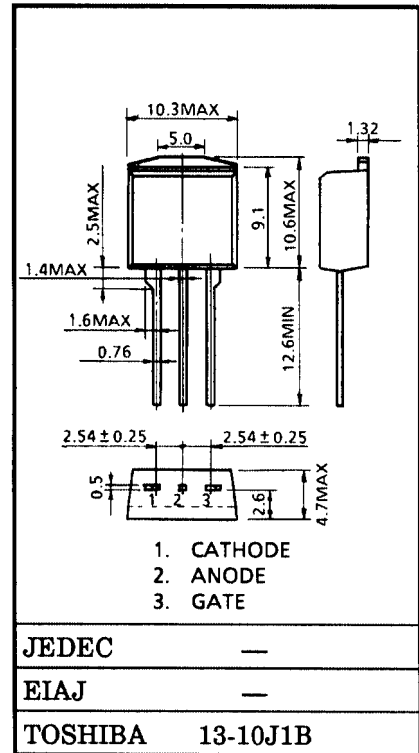
- Critical rate of rise of ON-state current: $di/dt = 750 \text{ A}/\mu\text{s}$
- Repetitive surge ON-state current: $I_{TRM} = 500 \text{ A}$ ($t_w = 2 \mu\text{s}$)
- Repetitive peak OFF-state voltage: $V_{DRM} = 800 \text{ V}$
- Gate trigger current: $I_{GT} = 20 \text{ mA max.}$

Maximum Ratings

| Characteristics | Symbol | Rating | Unit |
|-----------------------------------------------------|------------|---------|------------------------|
| Repetitive peak OFF-state voltage | V_{DRM} | 800 | V |
| Repetitive peak surge ON-state current (Note) | I_{TRM} | 500 | A |
| Critical rate of rise of ON-state current (Note) | di/dt | 750 | $\text{A}/\mu\text{s}$ |
| Peak gate power dissipation | P_{GM} | 5 | W |
| Average gate power dissipation | $P_G (AV)$ | 0.5 | W |
| Peak forward gate voltage | V_{FGM} | 10 | V |
| Peak reverse gate voltage | V_{RGM} | -5 | V |
| Peak forward gate current | I_{GM} | 2 | A |
| Junction temperature | T_j | -40~125 | $^{\circ}\text{C}$ |
| Storage temperature range | T_{stg} | -40~150 | $^{\circ}\text{C}$ |

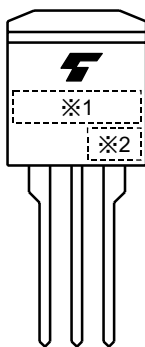
Note: $V_D \leq 0.8 \times \text{rated}$, $T_c = 85^{\circ}\text{C}$, $i_{gp} \geq 40 \text{ mA}$, $t_{gw} \geq 10 \mu\text{s}$, $t_{gr} \leq 150 \text{ ns}$

Unit in mm



Weight : 1.5g (Typ.)

Marking



| ⊛1 | TYPE NAME | S6992 | MARK | S6992 |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------|-------|
| ⊛2 | Lot Number <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; margin-right: 5px;"></div> <div style="margin-left: 5px;"> Month (starting from alphabet A) Year (last decimal digit of the current year) </div> </div> | | Example 8A: January 1998 8B: February 1998 8L: December 1998 | |

*: There is no reverse-blocking (reverse voltage) ability.

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Electrical Characteristics (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------------|---------------|-----------------------------------------------------------------------|-----|------|-----|---------------------------|
| Repetitive peak OFF-state current | I_{DRM} | $V_{DRM} = \text{rated}$ | — | — | 10 | μA |
| Peak ON-state voltage | V_{TM} | $I_{TM} = 25 \text{ A}$ | — | — | 1.5 | V |
| Gate trigger voltage | V_{GT} | $V_D = 6 \text{ V}, R_L = 10 \Omega$ | — | — | 1.0 | V |
| Gate trigger current | I_{GT} | | — | — | 20 | mA |
| Gate non-trigger voltage | V_{GD} | $V_D = \text{rated}, T_c = 125^\circ\text{C}$ | 0.2 | — | — | V |
| Critical rate of rise of OFF-state voltage | dv/dt | $V_{DRM} = \text{rated}, T_c = 125^\circ\text{C}$ Exponential rise | — | 50 | — | $\text{V}/\mu\text{s}$ |
| Holding current | I_H | $V_D = 6 \text{ V}, I_{TM} = 1 \text{ A}$ | — | — | 40 | mA |
| Thermal resistance | $R_{th(j-a)}$ | Junction to ambient | — | — | 70 | $^\circ\text{C}/\text{W}$ |

Test Circuit Examples

