

TOSHIBA THYRISTOR SILICON PLANAR TYPE

SF5G42,SF5J42

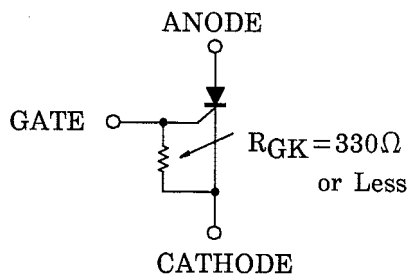
MEDIUM POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : $V_{DRM} = 400, 600V$
 Repetitive Peak Reverse Voltage : $V_{RRM} = 400, 600V$
- Average On-State Current : $I_{T(AV)} = 5A$
- JEDEC TO-220AB Package.

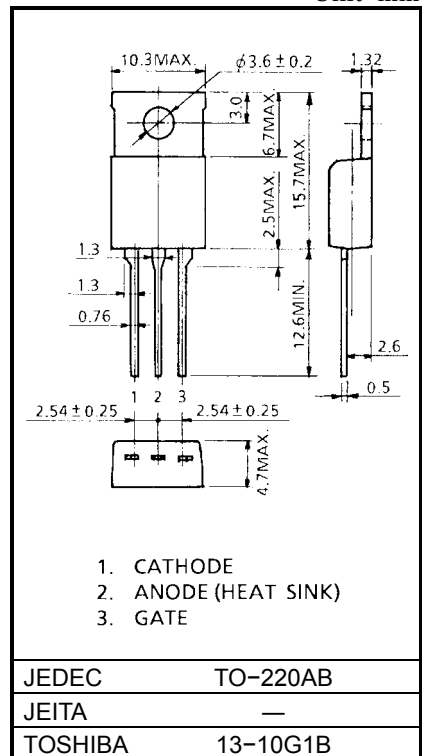
MAXIMUM RATINGS

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|--|--------------|-----------|------------|
| Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage (RGK = 330Ω) | SF5G42 | 400 | V |
| | SF5J42 | 600 | |
| Non-Repetitive Peak Reverse Voltage (Non-Repetitive<5ms, $T_j = 0\sim 125^\circ C$, RGK = 330Ω) | SF5G42 | 500 | V |
| | SF5J42 | 720 | |
| Average On-State Current (Half Sine Waveform $T_c = 91^\circ C$) | $I_{T(AV)}$ | 5 | A |
| R.M.S On-State Current | $I_{T(RMS)}$ | 7.8 | A |
| Peak One Cycle Surge On-State Current (Non-Repetitive) | I_{TSM} | 80 (50Hz) | A |
| | | 88 (60Hz) | |
| I^2t Limit Value | I^2t | 32 | A^2s |
| Peak Gate Power Dissipation | P_{GM} | 0.5 | W |
| Average Gate Power Dissipation | $P_{G(AV)}$ | 0.05 | W |
| Peak Forward Gate Voltage | V_{FGM} | 5 | V |
| Peak Reverse Gate Voltage | V_{RGM} | -5 | V |
| Peak Forward Gate Current | I_{GM} | 200 | mA |
| Junction Temperature | T_j | -40~125 | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -40~125 | $^\circ C$ |

Note: Should be used with gate resistance as follows.



Unit: mm

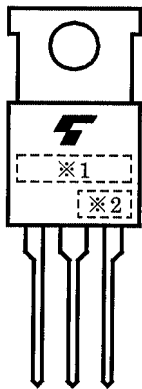


Weight: 2g

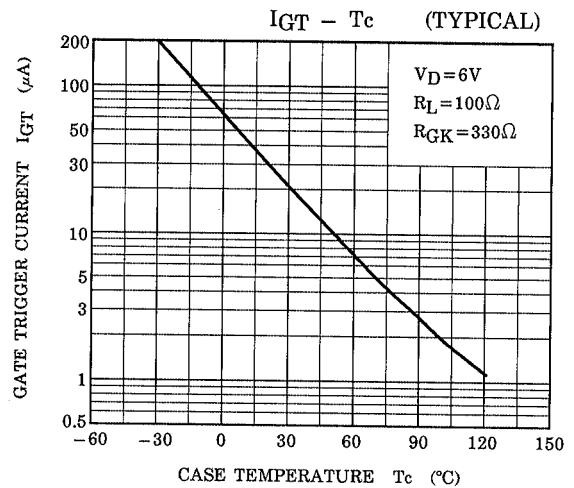
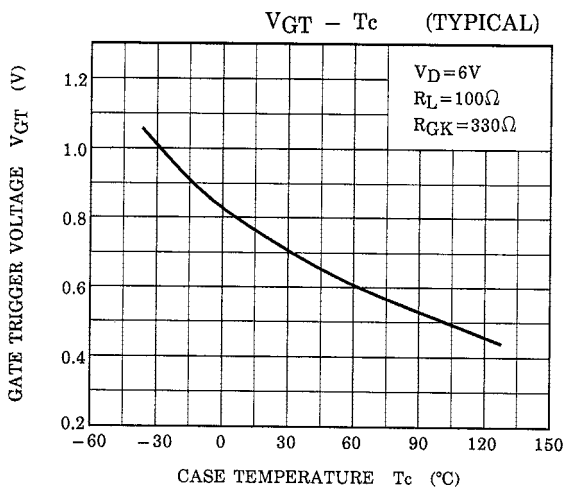
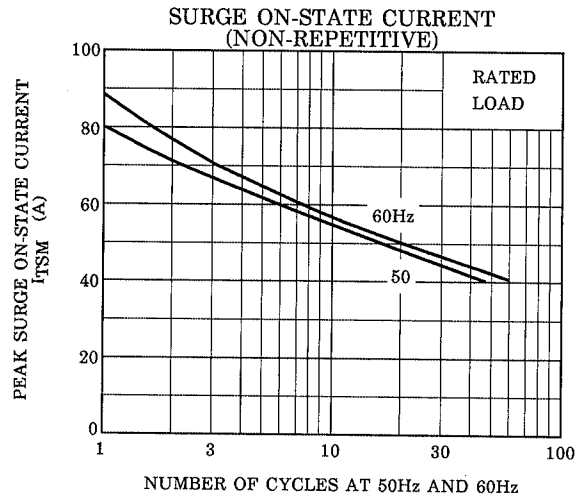
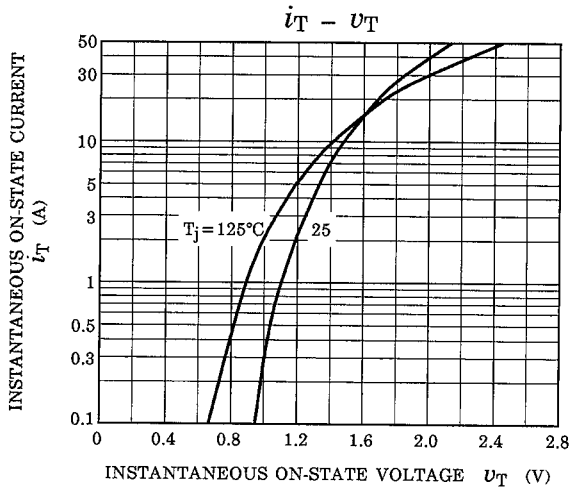
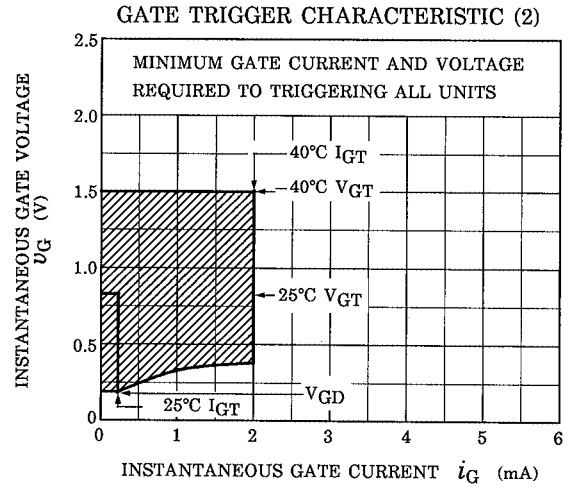
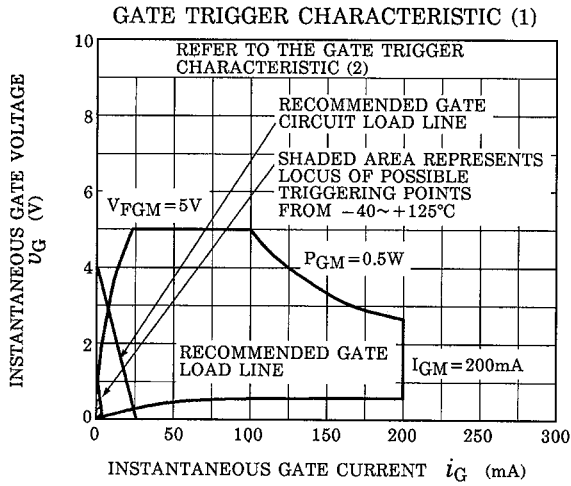
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

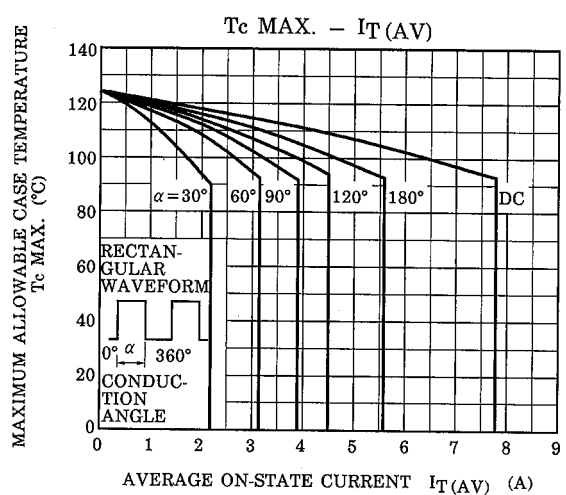
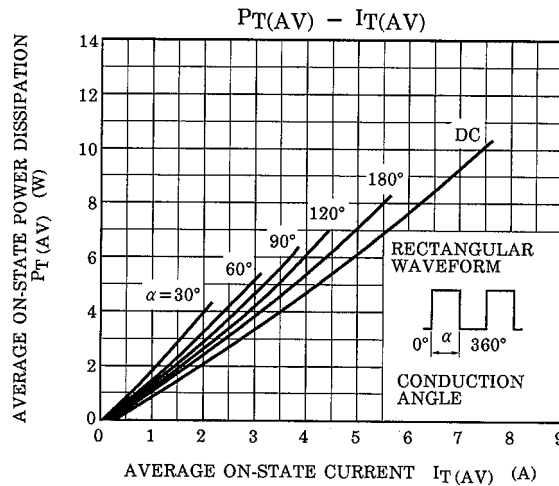
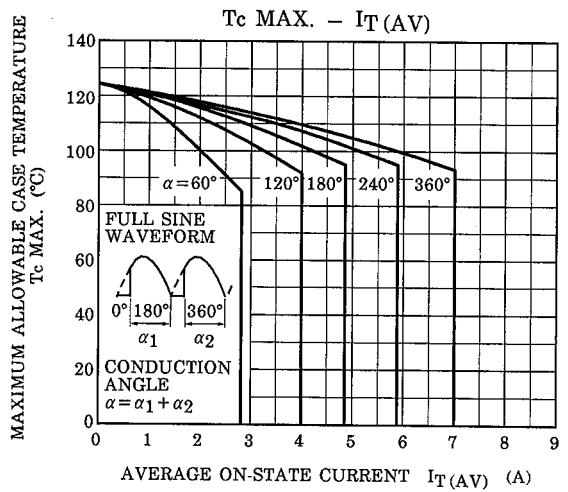
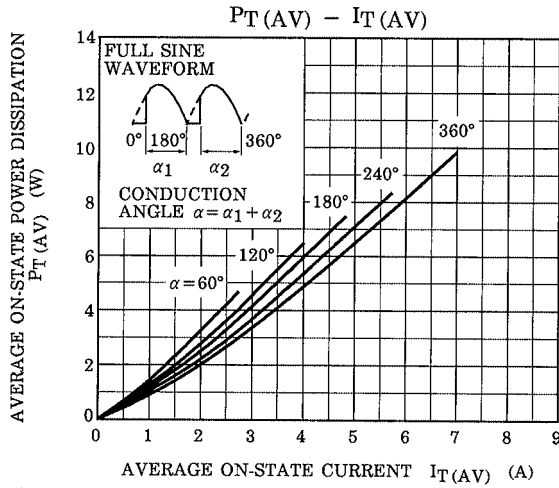
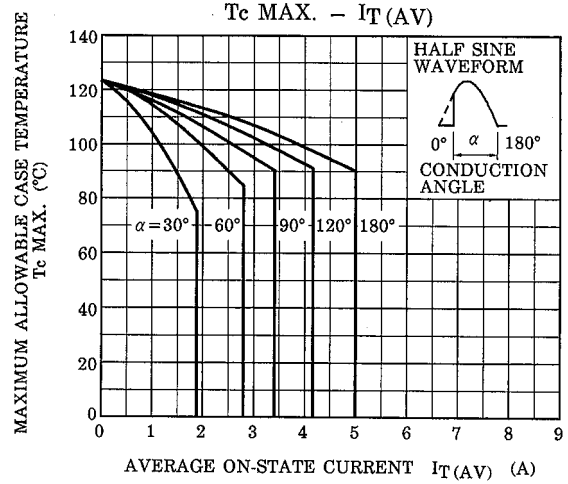
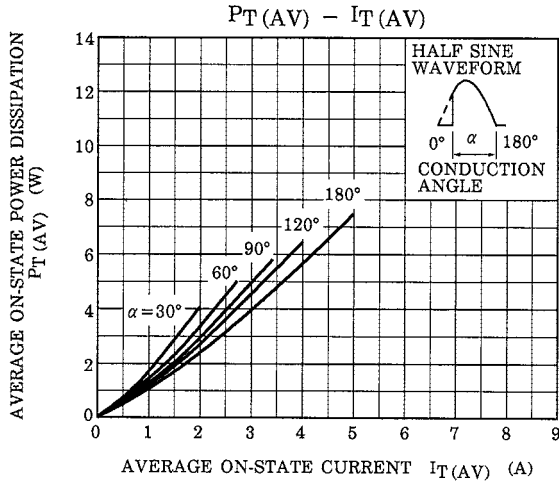
| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN | TYP. | MAX | UNIT |
|---|------------------------|--|-----|------|-----|-----------------------------|
| Repetitive Peak Off-State Current and Repetitive Peak Reverse Current | I_{DRM} I_{RRM} | $V_{DRM} = V_{RRM} = \text{Rated}$ $T_j = 125^\circ\text{C}, R_{GK} = 330\Omega$ | — | — | 2 | mA |
| Peak On-State Voltage | V_{TM} | $I_{TM} = 15\text{A}$ | — | — | 1.6 | V |
| Gate Trigger Voltage | V_{GT} | $V_D = 6\text{V}, R_L = 100\Omega$ $R_{GK} = 330\Omega$ | — | — | 0.8 | V |
| Gate Trigger Current | I_{GT} | | — | — | 200 | μA |
| Gate Non-Trigger Voltage | V_{GD} | $V_D = \text{Rated} \times 2 / 3, T_c = 125^\circ\text{C}$ | 0.2 | — | — | V |
| Critical Rate of Rise of Off-State Voltage | dv / dt | $V_{DRM} = \text{Rated} \times 2 / 3, T_c = 75^\circ\text{C}$ $R_{GK} = 330\Omega, \text{Exponential Rise}$ | — | 50 | — | $\text{V} / \mu\text{s}$ |
| Holding Current | I_H | $R_L = 100\Omega, R_{GK} = 330\Omega$ | — | 4 | — | mA |
| Thermal Resistance | $R_{th(j-c)}$ | Junction to Case | — | — | 3 | $^\circ\text{C} / \text{W}$ |

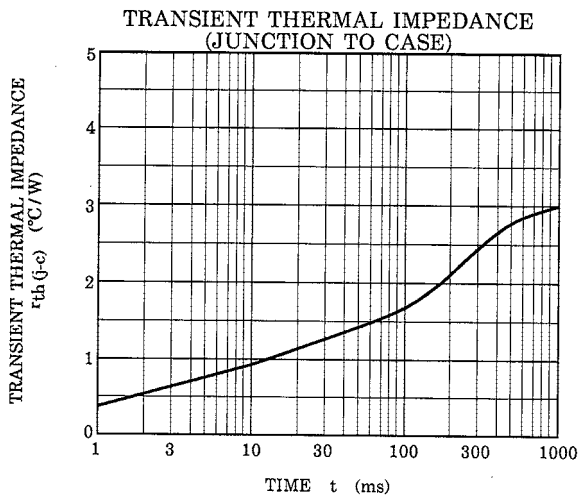
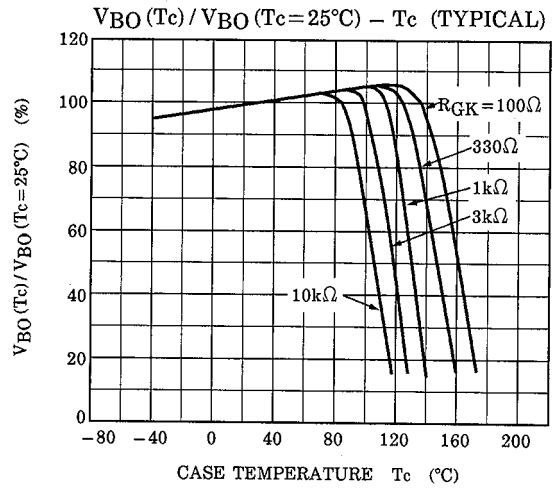
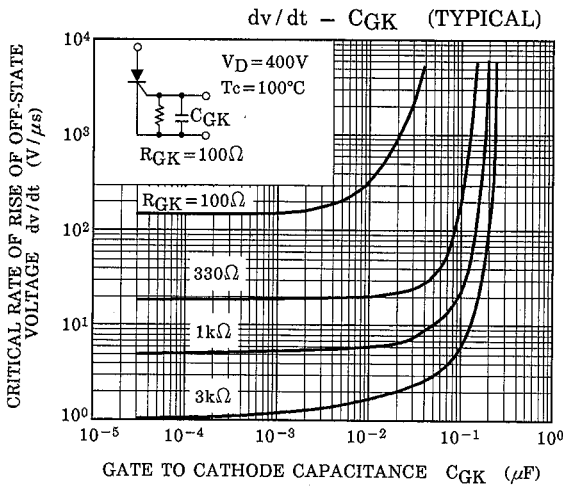
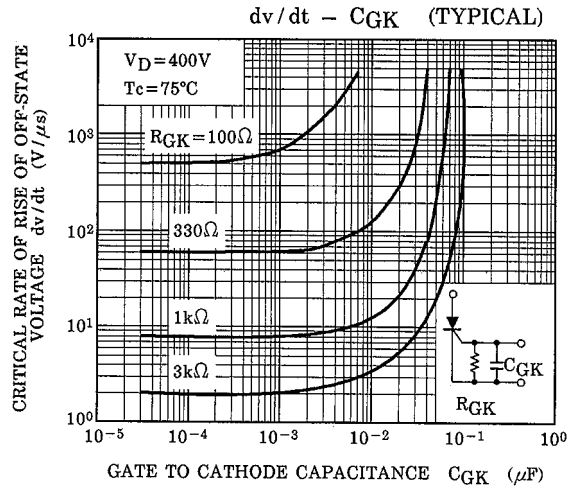
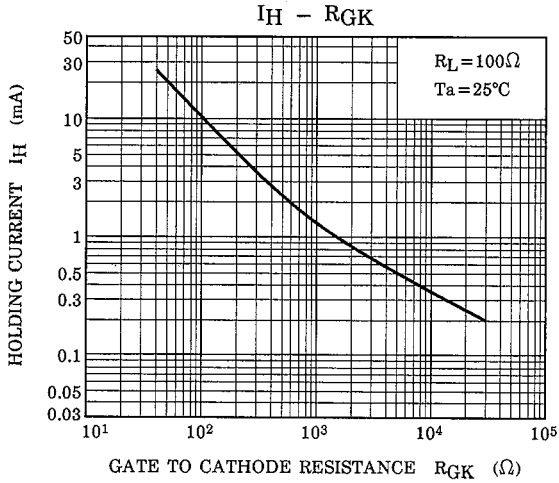
MARKING



| NUMBER | SYMBOL | MARK |
|--------|---|---|
| *1 | TYPE | SF5G42 |
| | | SF5J42 |
| *2 | <p>Lot Number</p> <p> <input type="checkbox"/> <input type="checkbox"/> </p> <p> — Month (Starting from Alphabet A) </p> <p> — Year (Last Decimal Digit of the Current Year) </p> | <p>Example</p> <p>8A : January 1998</p> <p>8B : February 1998</p> <p>8L : December 1998</p> |







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