

KD12SF60

TRIACs

600V, 12A

Feature

- Full molded
- High voltage
- Tj=150°C
- Stable surge-on current capability
- Pb free terminal
- RoHS:Yes

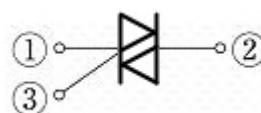
OUTLINE

Package (House Name): FTO-220AG

Package (JEITA Code): SC-91



Equivalent circuit



Absolute Maximum Ratings (unless otherwise specified : Tc=25°C)

| Item | Symbol | Conditions | Ratings | Unit |
|---|---------------------|--|------------|------------------|
| Storage temperature | T _{stg} | | -55 to 150 | °C |
| Junction temperature | T _j | | -40 to 150 | °C |
| Repetitive peak off-state voltage | V _{DRM} | | 600 | V |
| Non-repetitive peak off-state voltage | V _{DSM} | ※ | 720 | V |
| R.M.S. on-state current | I _{T(RMS)} | T _c =112°C, commercial frequency, sine wave, $\theta=360^\circ\text{C}$ | 12 | A |
| Surge on-state current | I _{TSM} | T _j =25°C, 60Hz sine wave, Non-repetive 1 cycle peak | 120 | A |
| Current squared time | I ² t | T _j =25°C, t=8.33ms, Non-repetitive | 60 | A ² S |
| Critical rate of rise of on-state current | di/dt | | 50 | A/μs |
| Peak gate dissipation | P _{GM} | f=60Hz, Duty≤10% | 5 | W |
| Average gate dissipation | P _{G(AV)} | | 0.5 | W |
| Peak gate current | I _{GM} | f=60Hz, Duty≤10% | 2 | A |
| Peak gate voltage | V _{GM} | | 10 | V |
| Dielectric strength | V _{dis} | Terminals to case, AC 1 minute | 2 | kV |
| Mounting Torque | TOR | (Recommended torque:0.3N·m) | 0.5 | N·m |

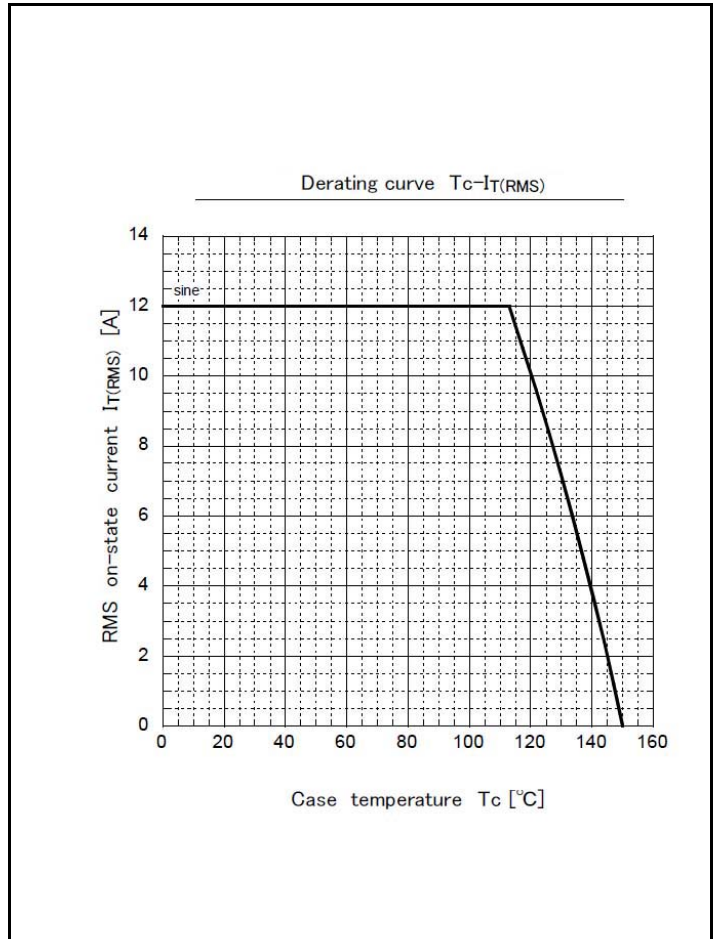
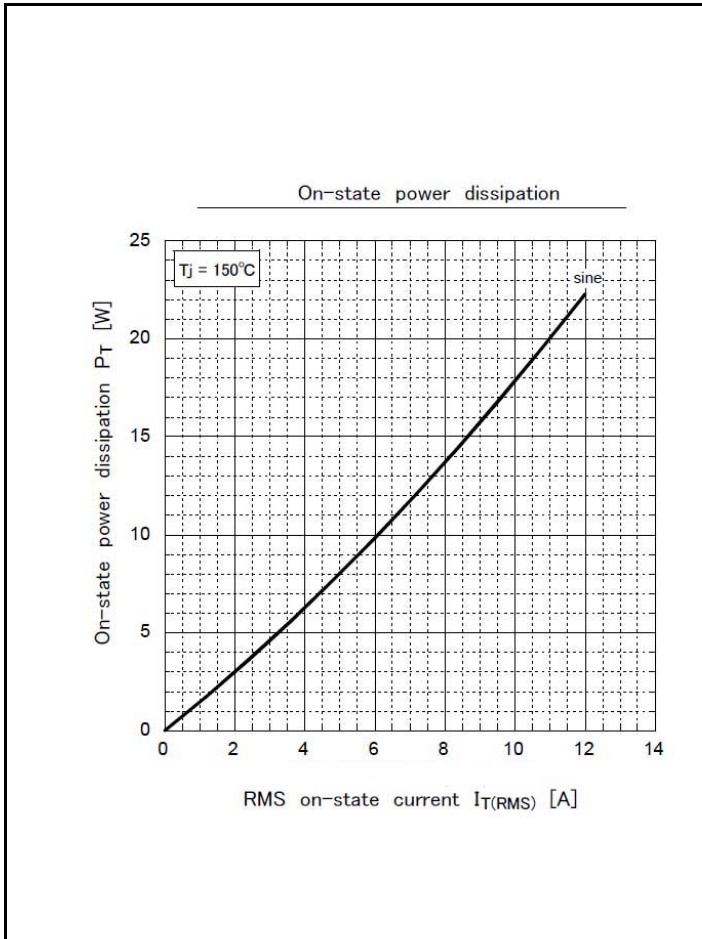
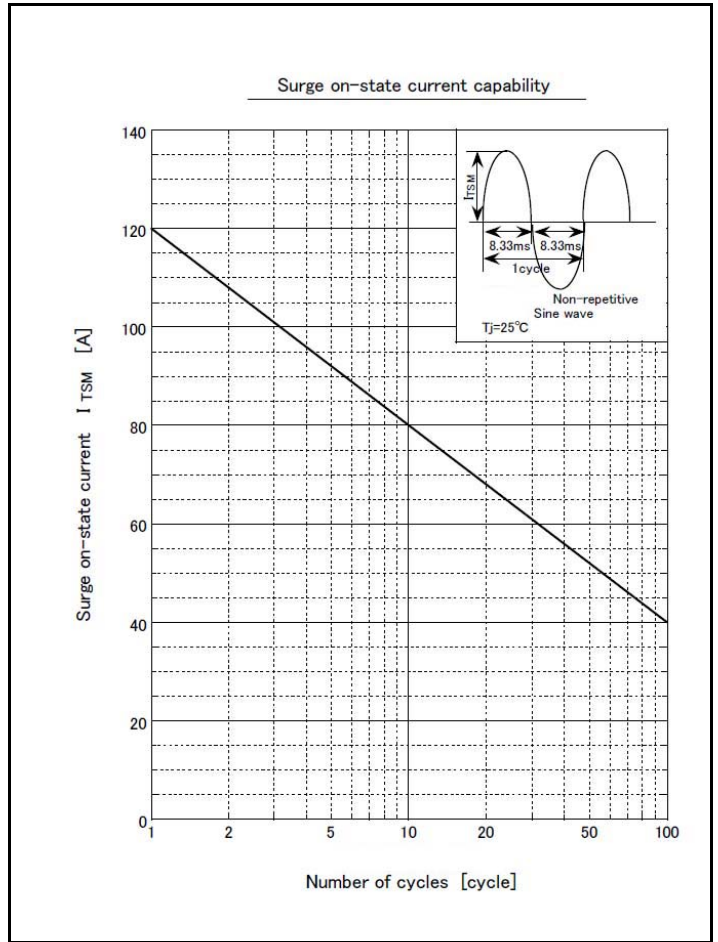
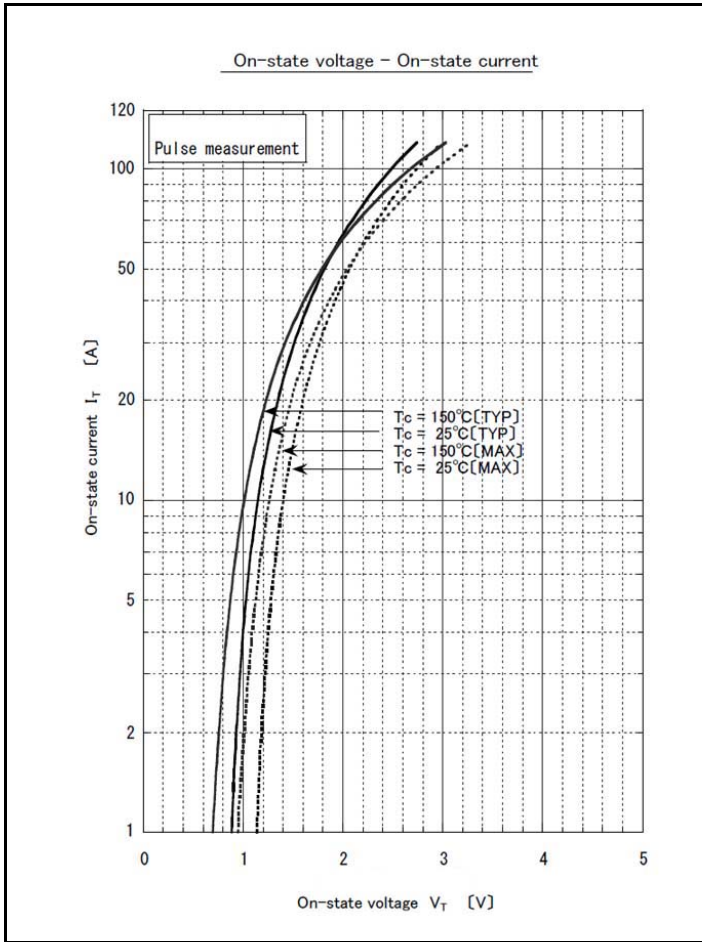
※ :See the original Specifications

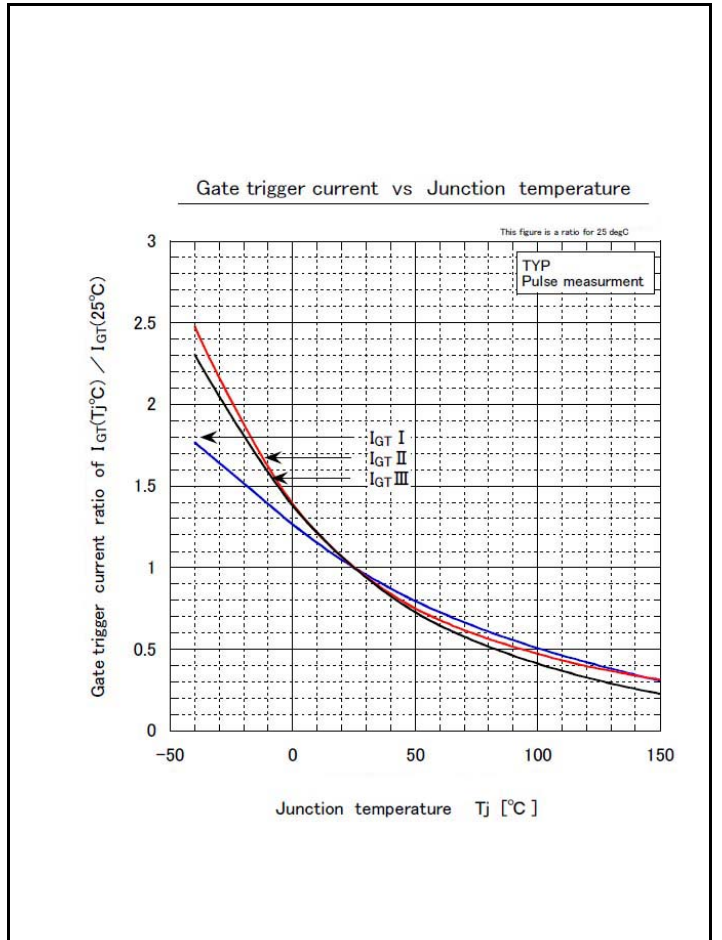
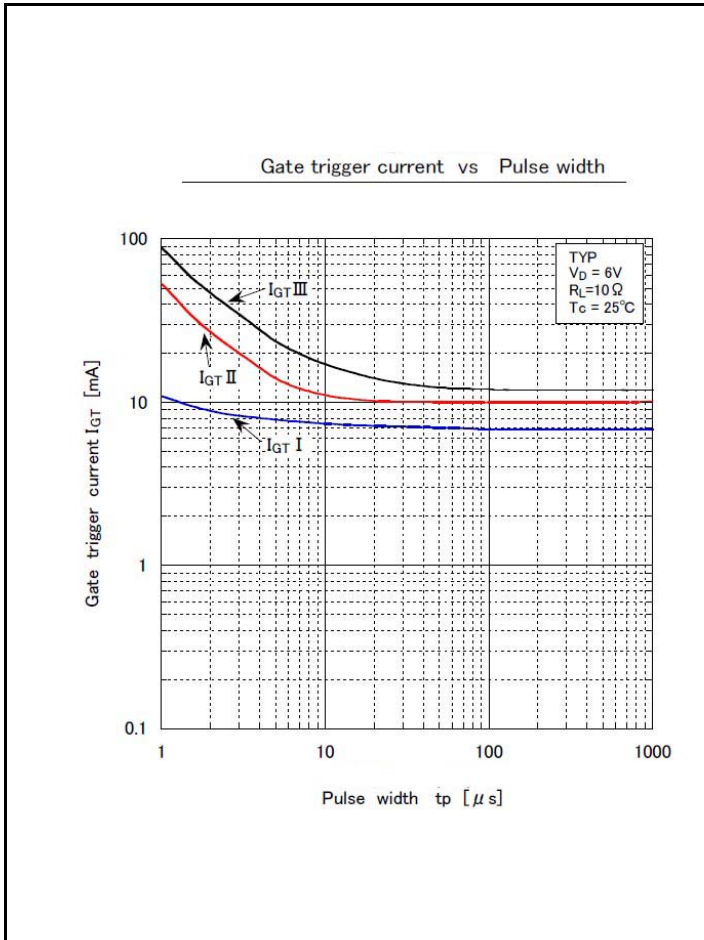
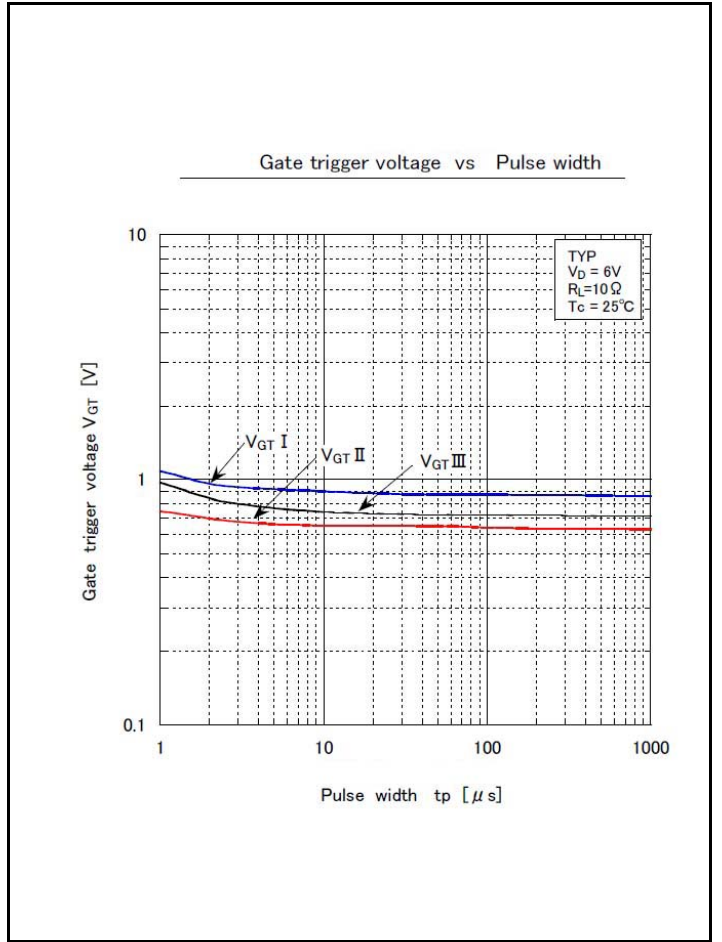
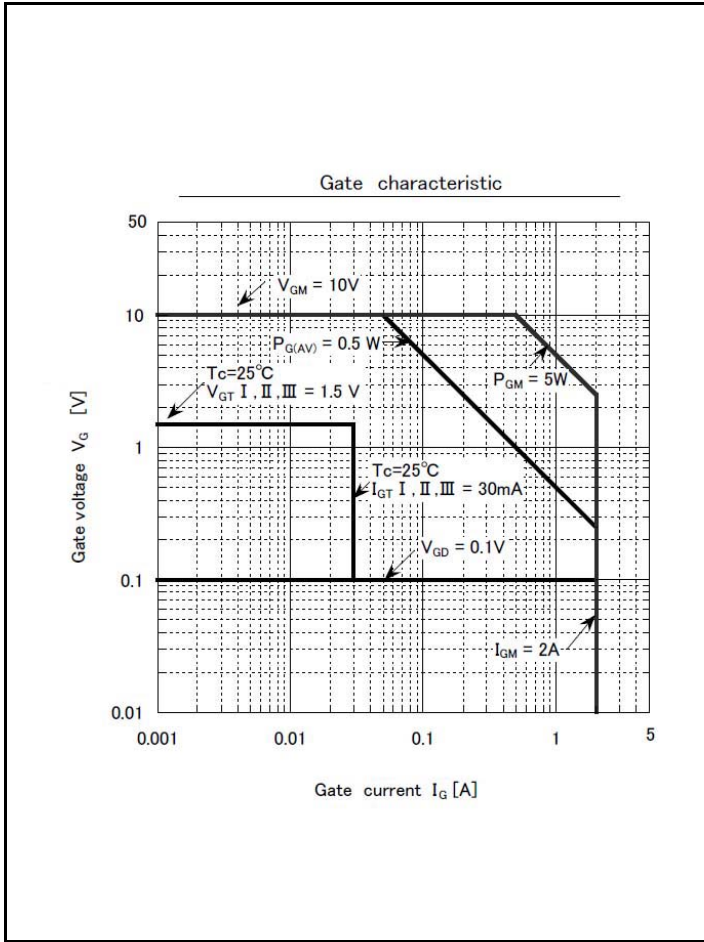
Electrical Characteristics (unless otherwise specified : T_c=25°C)

| Item | Symbol | Conditions | Ratings | | | Unit |
|--|----------------------|--|---------|-----|------|------|
| | | | MIN | TYP | MAX | |
| Off-state current | I _{DRM} | VD=600V, Pulse measurement | | | 10 | μA |
| On-state voltage | V _{TM} | ITM=20A, Pulse measurement | | | 1.6 | V |
| Gate trigger voltage | V _{GTI} | VD=6V, RL=10Ω, T1-, T2+, G+ | | | 1.5 | V |
| Gate trigger voltage | V _{GTH} | VD=6V, RL=10Ω, T1-, T2+, G- | | | 1.5 | V |
| Gate trigger voltage | V _{GTH} | VD=6V, RL=10Ω, T1+, T2-, G- | | | 1.5 | V |
| Gate trigger voltage | V _{GTV} | VD=6V, RL=10Ω, T1+, T2-, G+ | | | - ※ | V |
| Gate non-trigger voltage | V _{GD} | T _j =150°C, VD=1/2V _{DRM} | 0.1 | | | V |
| Gate trigger current | I _{GTI} | VD=6V, RL=10Ω, T1-, T2+, G+ | | | 30 | mA |
| Gate trigger current | I _{GTH} | VD=6V, RL=10Ω, T1-, T2+, G- | | | 30 | mA |
| Gate trigger current | I _{GTH} | VD=6V, RL=10Ω, T1+, T2-, G- | | | 30 | mA |
| Gate trigger current | I _{GTV} | VD=6V, RL=10Ω, T1+, T2-, G+ | | | - ※ | mA |
| Latching current | I _{LI} | IG=0.1A, T1-, T2+, G+ | | | 100 | mA |
| Latching current | I _{LII} | IG=0.1A, T1-, T2+, G- | | | 100 | mA |
| Latching current | I _{LIII} | IG=0.1A, T1+, T2-, G- | | | 100 | mA |
| Latching current | I _{LIV} | IG=0.1A, T1+, T2-, G+ | | | - ※ | mA |
| Holding current | I _H | IT=1A | | | 100 | mA |
| Critical rate of rise of off-state voltage | dv/dt | T _j =150°C, VD=2/3V _{DRM} | 100 | | | V/μs |
| Critical rate of rise of commutating voltage | (dv/dt) _c | T _j =150°C, VD=2/3V _{DRM} , (di/dt) _c =-6A/ms | 1 | | | V/μs |
| Thermal resistance | R _{th(j-c)} | Junction to case with heatsink | | | 1.66 | °C/W |

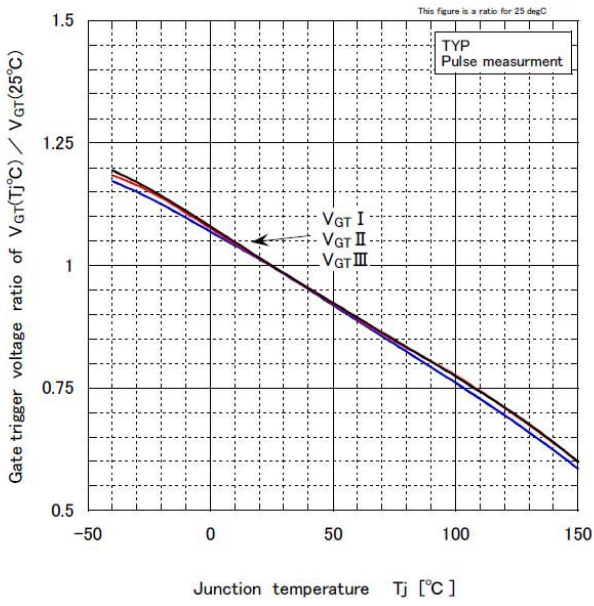
※ :See the original Specifications

CHARACTERISTIC DIAGRAMS

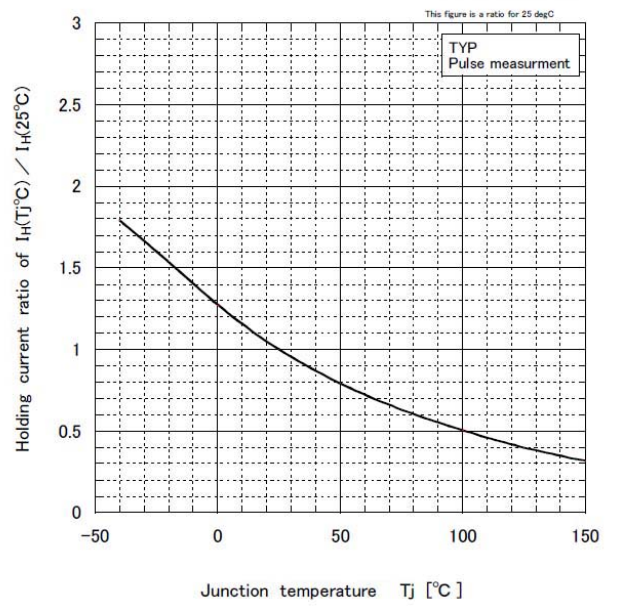




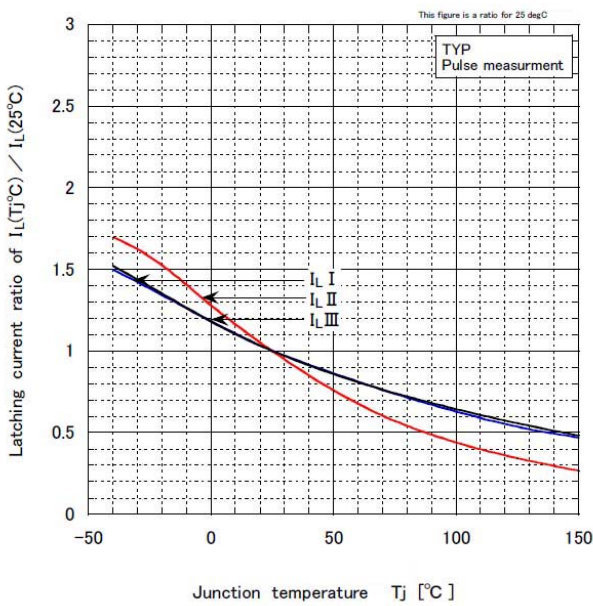
Gate trigger voltage vs Junction temperature



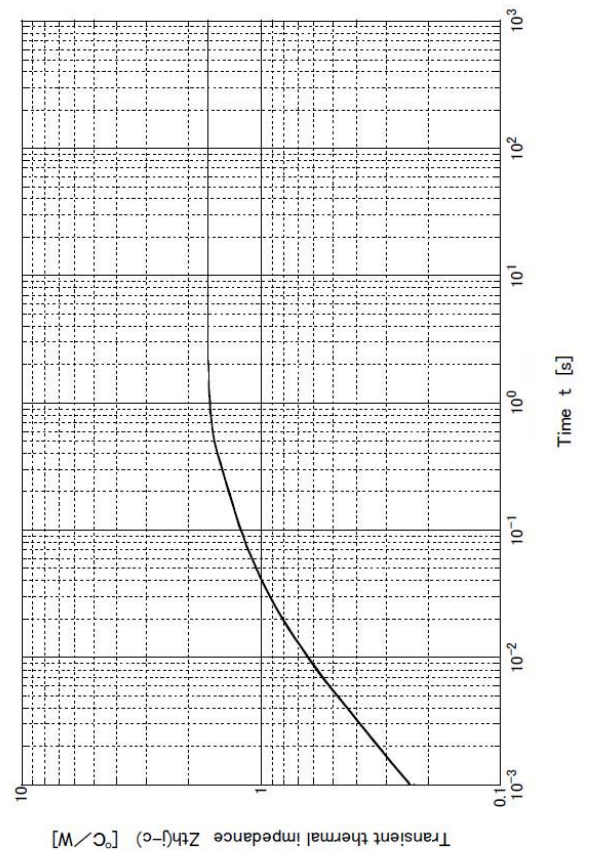
Holding current vs Junction temperature



Latching current vs Junction temperature



Transient thermal impedance



Notes

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