

KK600A-E



FAST TURN-OFF THYRISTOR

Features

- Interdigitated amplifying gate
- Fast switch and high di/dt
- Low switching loss

Application

- Converter
- Chopper
- Induction heating

| | |
|-------------------|----------------------|
| $I_{T(AV)}$ | 600 A |
| V_{DRM}/V_{RRM} | 800~1800V |
| t_q | 16~35 μ s |
| I_{TSM} | 7.5 KA |
| I^2T | 281KA ² S |

| Symb. | | parameter | Test Conditions | $T_{J(c)}$) | Value | Unit |
|--------------------|------------------------|--|---|-----------------|--------------------|-------------------|
| Current Ratings | $I_{T(AV)}$ | average on-state current | 180° half sine wave 50Hz Double side cooled $T_{hs}=74^{\circ}C$ | 115 | 600 | A |
| | I_{TSM} | Surge on-state current | 10ms half sine wave $VR=0.6V_{RRM}$ | 115 | 7.5 | KA |
| | I^2t | I^2t for fusing coordination | | 115 | 281 | KA ² S |
| Characteristics | V_{DRM} V_{RRM} | Repetitive peak off-state voltage Repetitive peak reverse voltage | $V_{DRM}\&V_{RRM}$ tp=10ms $V_{DSM}\&V_{RSM}=V_{DRM}\&V_{RRM}+100V$ | 115 | 800-1800 | V |
| | I_{DRM} I_{RRM} | Repetitive peak current | $V_{DM}=V_{DRM}$ $V_{RM}=V_{RRM}$ | 115 | Max.50 | mA |
| | V_{TO} | Threshold voltage | | 115 | Max.1.42 | V |
| | V_{TM} | Peak on-state voltage | $I_{TM}=1800A, F=18KN$ | 25 | Max.3.15 | V |
| | r_T | On-state slop resistance | | 115 | 0.50 | m Ω |
| | I_H | Holding current | $V_A=12V, I_A=1A$ | 25 | 20-400 | ma |
| Dynamic Parameters | dv/dt | Critical rate of rise of off-state voltage | $V_{DM}=67\%V_{DRM}$ | 115 | Max.500 | V/ μ s |
| | di/dt | Critical rate of rise of on-state current | $V_{DM}=67\%V_{DRM}$ to 800A, Gate pulse $tr \leq 0.5\mu s, I_{GM}=1.5A$ | 115 | Max.300 | A/ μ s |
| | t_q | Circuit commutated turn-off time | $I_{TM}=600A, tp=1000\mu s, dv/dt=30V/\mu s$ $di/dt=-20A/\mu s, V_R=50V$ | 115 | 16-35 | mA |
| | I_{rm} | Reserse recovery current | $I_{TM}=600A, tp=1000\mu s$ $di/dt=-20A/\mu s, VR=50V$ | 115 | Typ.70 | A |
| | t_{rr} | Reverse recovery time | | 115 | Typ.4.4 | μ s |
| | Q_{rr} | Recovery charge | | 115 | Typ.155 Max.180 | μ c |
| Gate Parameters | I_{GT} | Gate trigger current | $V_A=12V, I_A=1A$ | 25 | 40-300 | mA |
| | V_{GT} | Gate trigger voltage | | 25 | 0.9-3.0 | V |
| | V_{GD} | Non-trigger gate voltage | $V_{DM}=67\%V_{DRM}$ | 115 | Min.0.3 | V |

Thermal & Mechanical Data

| Symb. | parameter | Test Conditions | $T_J(^{\circ}\text{C})$ | Value | Unit |
|---------------|---|--|-------------------------|----------|-----------------------------|
| $R_{th(j-h)}$ | Thermal re sistance J unction to he at sink | Double side cooled, clamping force 18N | | 0.032 | $^{\circ}\text{C}/\text{W}$ |
| F_m | Mounting force | | | 15-20 | KN |
| T_{stg} | Stored temperature | | | -40-+140 | $^{\circ}\text{C}$ |
| W_t | Weight | | | 360 | g |

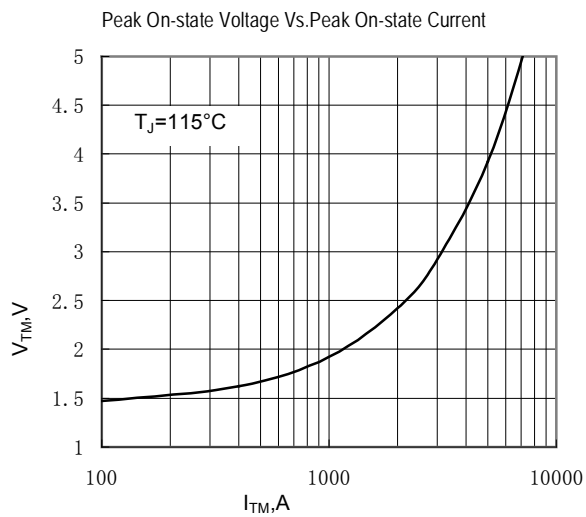


Fig.1

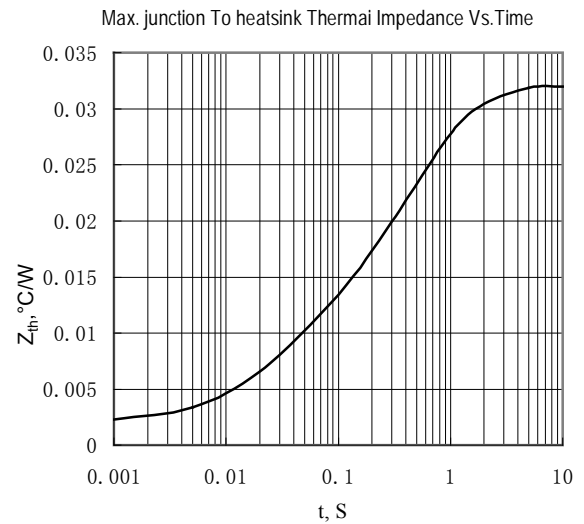


Fig.2

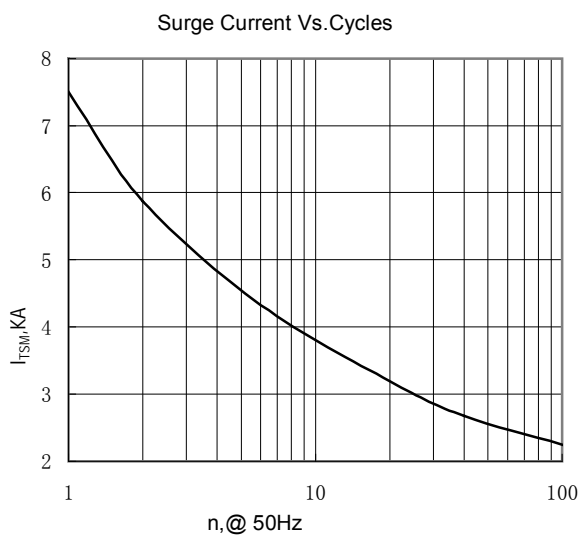


Fig.3

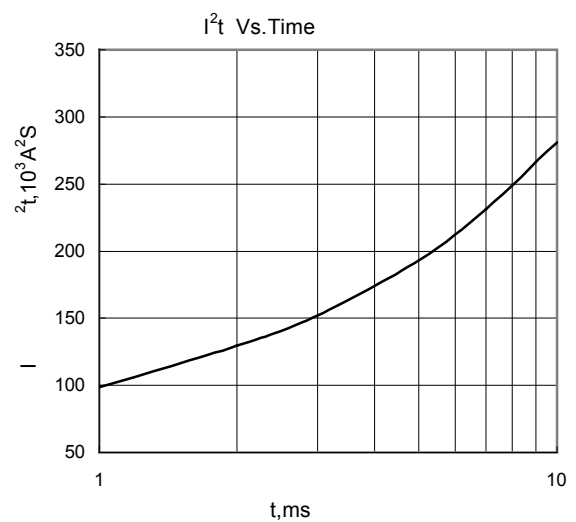
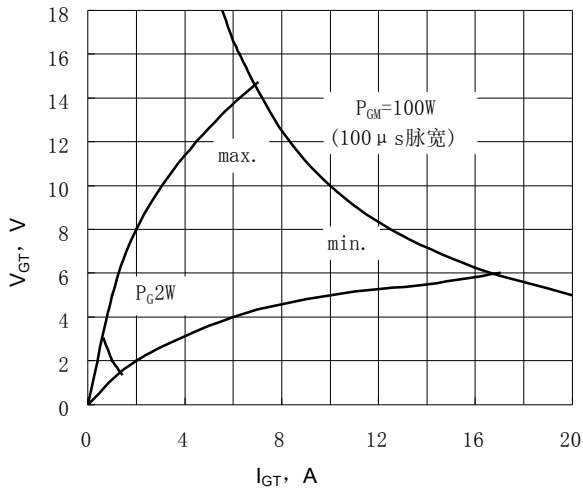
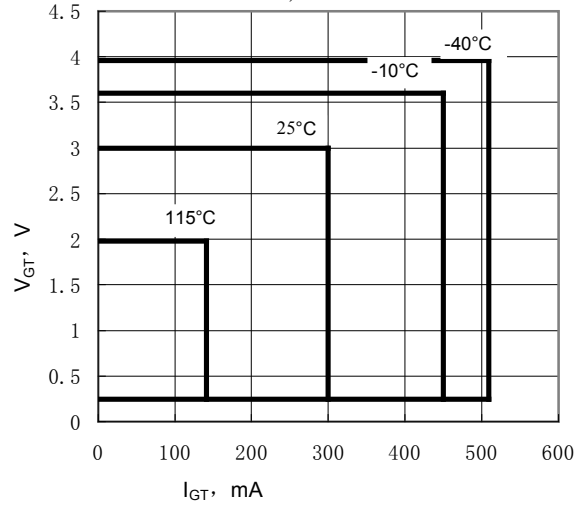


Fig.4

Gate characteristic at 25°C junction temperature

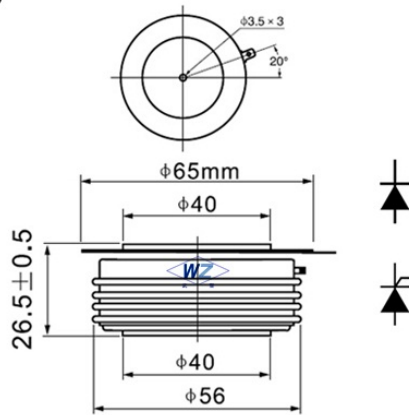


Gate Trigger Zone at varies temperature



Dimensions:

C18



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