| | | | |
|---|---|---|---|
| Peak pulse voltage ($T_j$=25 ; non-repetitive,off-state;FIG.7) | $V_{pp}$ | 4.5 | kV |

## ELECTRICAL CHARACTERISTICS ($T_j$=25 unless otherwise specified)

| Symbol | Test Condition | Quadrant | Value | | Unit |
|---|---|---|---|---|---|
| $I_{GT}$ | $V_D$=12V $R_L$=33Ω | - - | MAX. | 5 | mA |
| | | | | 10 | |
| $V_{GT}$ | | ALL | MAX. | 1 | V |
| $V_{GD}$ | $V_D$=$V_{DRM}$ $T_j$=125 $R_L$=3.3kΩ | ALL | MIN. | 0.2 | V |
| $I_L$ | $I_G$=1.2$I_{GT}$ | - - | MAX. | 15 | mA |
| | | | | 20 | |
| $I_H$ | $I_T$=500mA | | MAX. | 10 | mA |
| dV/dt | $V_D$=540V Gate Open $T_j$=125 | | MIN. | 40 | V/μs |
| (dV/dt)c | (dI/dt)c=7.2A/ms, $T_j$=110 | | MIN. | 2 | V/μs |
| $t_{on}$ | $I_G$=20mA $I_A$=200mA $I_R$=20mA $T_j$=25 | | TYP. | 3 | μs |
| $t_{off}$ | | | | 50 | |

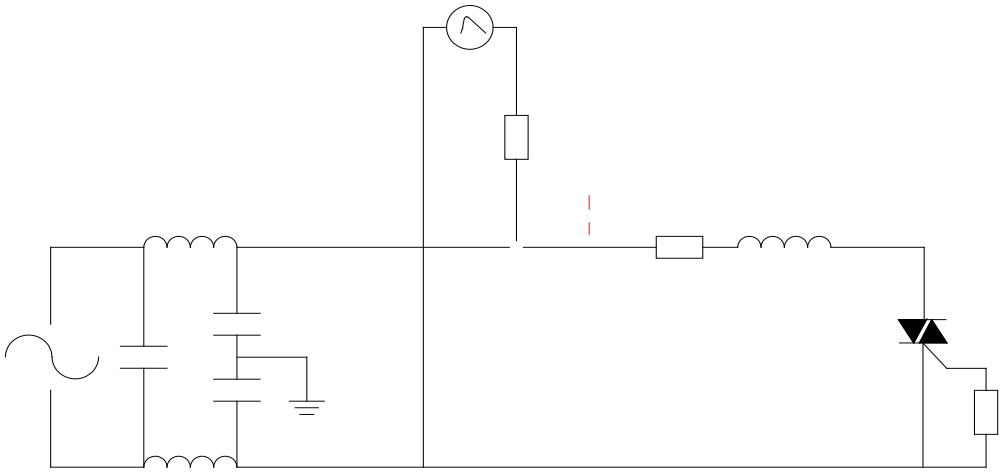
## STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX.) | Unit |
|---|---|---|---|---|
| $V_{TM}$ | $I_{TM}$=20A $t_p$=380μs | $T_j$=25 | 1.5 | V |
| $V_{TO}$ | Threshold voltage | $T_j$=125 | 0.75 | V |
| $R_D$ | Dynamic resistance | $T_j$=125 | 27 | mΩ |
| $I_{DRM}$ | $V_D$=$V_{DRM}$ $V_R$=$V_{RRM}$ | $T_j$=25 | 5 | μA |
| $I_{RRM}$ | | $T_j$=125 | 0.5 | mA |

## THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $R_{th(j-c)}$ | junction to case (AC) | 2.3 | /W |
| $R_{th(j-a)}$ | junction to ambient (AC) | 60 | /W |

FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standard



## ORDERING INFORMATION

| Order code | Voltage $V_{DRM}/V_{RRM}$ (V) | IGT(mA) | | Package | Base qty. (pcs) | Delivery mode |
|---|---|---|---|---|---|---|
| | | - - | | | | |
| JST139A-800D | 800 | 5 | 10 | TO-220A(Ins) | 50 | Tube |

### Document Revision History

| Date | Revision | Changes |
|---|---|---|
| Apr.14, 2023 | A.1.0 | Last updated |
| Oct.14, 2025 | A.1.1 | Revise PACKAGE MECHANICAL DATA |

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