





|                                                                      |          |   |    |
|----------------------------------------------------------------------|----------|---|----|
| Peak pulse voltage<br>( $T_j=25$ ; non-repetitive, off-state; FIG.7) | $V_{pp}$ | 1 | kV |
|----------------------------------------------------------------------|----------|---|----|

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

| Symbol      | Test Condition                              | Quadrant | Value |     | Unit       |
|-------------|---------------------------------------------|----------|-------|-----|------------|
| $I_{GT}$    | $V_D=12V$ $R_L=33\Omega$                    | - -      | MAX.  | 25  | mA         |
|             |                                             |          |       | 70  |            |
| $V_{GT}$    |                                             | ALL      | MAX.  | 1   | V          |
| $V_{GD}$    | $V_D=V_{DRM}$ $T_j=125$<br>$R_L=3.3k\Omega$ | ALL      | MIN.  | 0.2 | V          |
| $I_L$       | $I_G=1.2I_{GT}$                             | - -      | MAX.  | 40  | mA         |
|             |                                             |          |       | 90  |            |
| $I_H$       | $I_T=500mA$                                 |          | MAX.  | 40  | mA         |
| $dV/dt$     | $V_D=540V$ Gate Open $T_j=125$              |          | MIN.  | 200 | V/ $\mu s$ |
| $(dV/dt)_c$ | $(dI/dt)_c=5A/ms$ , $T_j=110$               |          | MIN.  | 8   | V/ $\mu s$ |
| $t_{on}$    | $I_G=80mA$ $I_A=400mA$ $I_R=40mA$           |          | TYP.  | 5   | $\mu s$    |
| $t_{off}$   | $T_j=25$                                    |          |       | 30  |            |

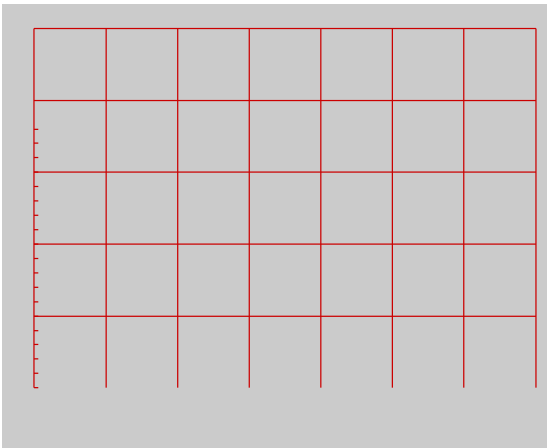
**STATIC CHARACTERISTICS**

| Symbol   | Parameter                   |                   | Value(MAX.) | Unit |
|----------|-----------------------------|-------------------|-------------|------|
| $V_{TM}$ | $I_{TM}=15A$ $t_p=380\mu s$ | $T_j=25$          | 1.6         | V    |
| $V_{TO}$ | Threshold voltage           | $T_j=125$ ńD F€ Đ | 0.8         | V    |



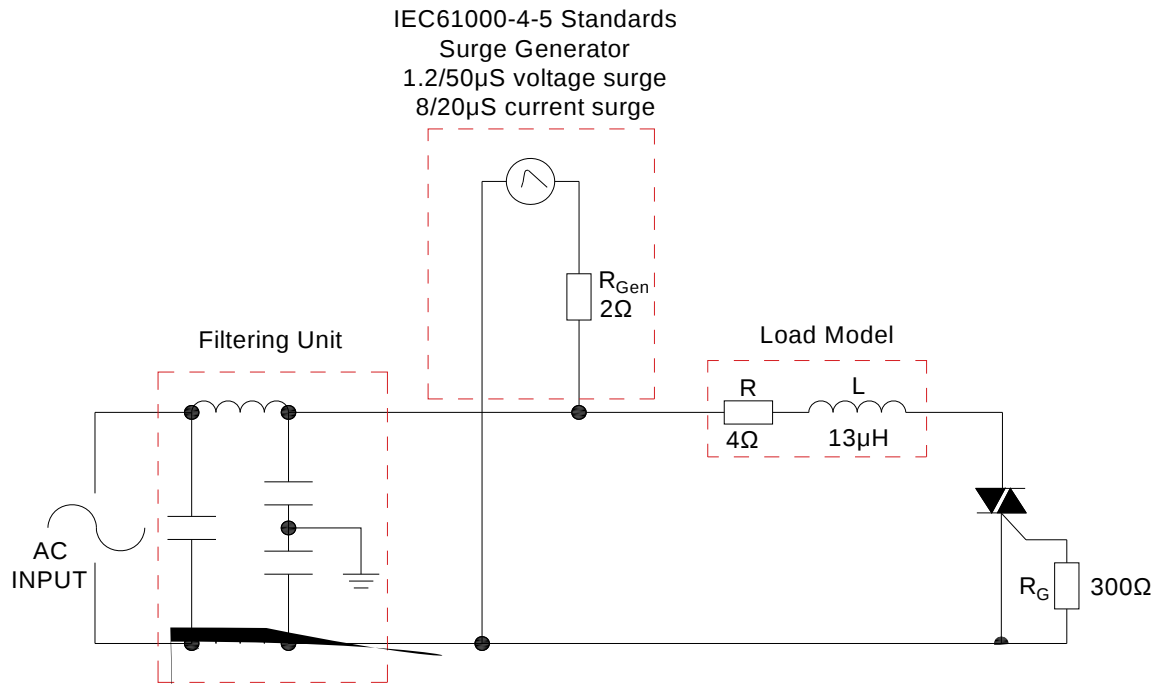


**FIG.1:** Maximum power dissipation versus RMS on-state current



**FIG.2:** RMS on-state current versus case temperature

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





## ORDERING INFORMATION

| Order code   | Voltage<br>$V_{\text{DRM}}/V_{\text{RRM}}$ (V) | IGT(mA)  |    | Package      | Base qty.<br>(pcs) | Delivery mode |
|--------------|------------------------------------------------|----------|----|--------------|--------------------|---------------|
|              |                                                | [ - ] -- |    |              |                    |               |
| JST138F-800F | 800                                            | 25       | 70 | TO-220F(Ins) | 50                 | Tube          |

## Document Revision History

| Date         | Revision | Changes                        |
|--------------|----------|--------------------------------|
| Apr.14, 2023 | A.1.0    | Last updated                   |
| Oct.15, 2025 | A.1.1    | Revise PACKAGE MECHANICAL DATA |





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