

2SK2675  
(FP7W90HVX2)

900V 7A

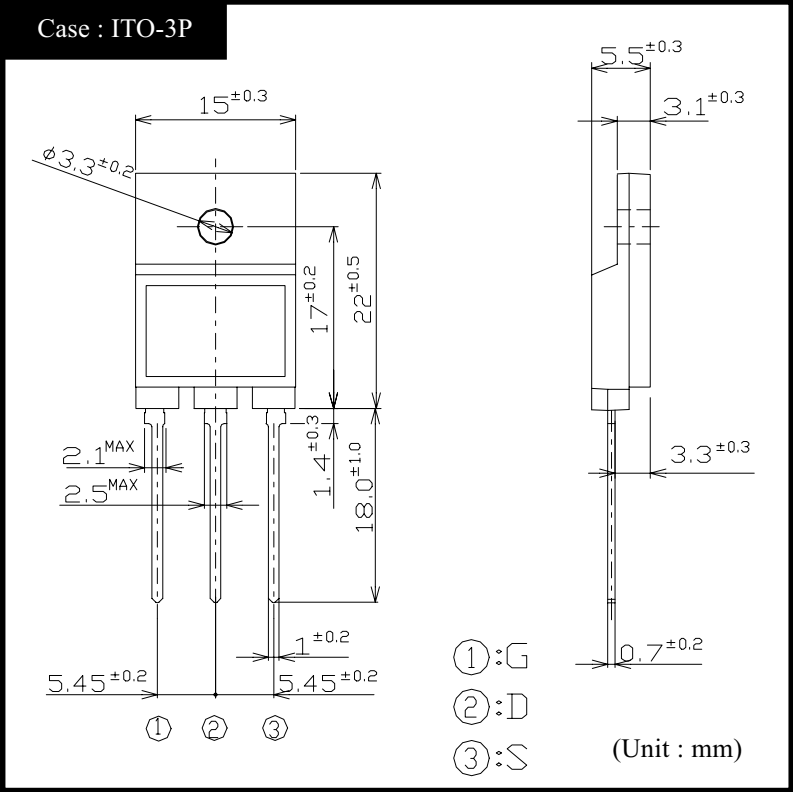
FEATURES

- Input capacitance (Ciss) is small.  
Especially, input capacitance at 0 bias is small.
- The static Rds(on) is small.
- The switching time is fast.
- Avalanche resistance guaranteed.

APPLICATION

- Switching power supply of AC 240V input
- High voltage power supply
- Inverter

OUTLINE DIMENSIONS



RATINGS

●Absolute Maximum Ratings (Tc = 25°C)

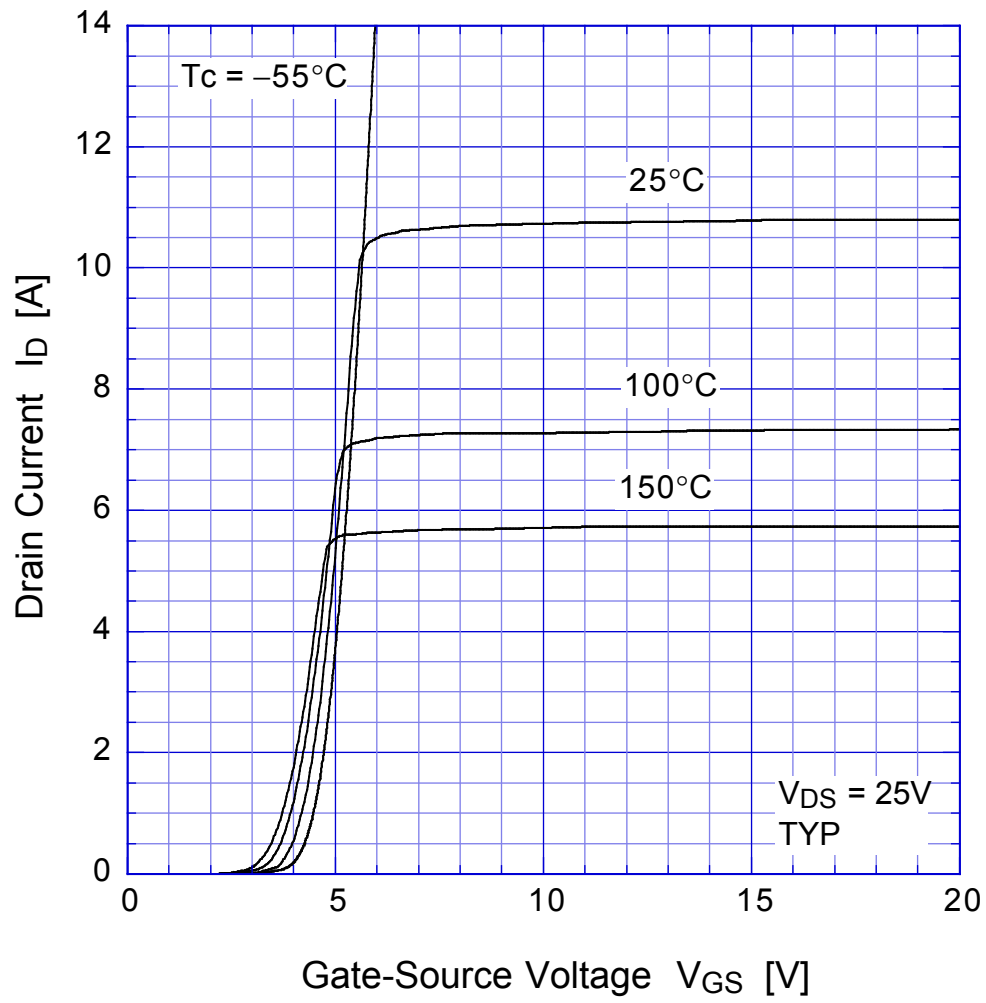
| Item                            | Symbol           | Conditions                              | Ratings | Unit |
|---------------------------------|------------------|-----------------------------------------|---------|------|
| Storage Temperature             | T <sub>stg</sub> |                                         | -55~150 | °C   |
| Channel Temperature             | T <sub>ch</sub>  |                                         | 150     |      |
| Drain-Source Voltage            | V <sub>DSS</sub> |                                         | 900     | V    |
| Gate-Source Voltage             | V <sub>GSS</sub> |                                         | ±30     |      |
| Continuous Drain Current (DC)   | I <sub>D</sub>   |                                         | 7       | A    |
| Continuous Drain Current (Peak) | I <sub>DP</sub>  | Pulse width ≤ 10 μs, Duty cycle ≤ 1/100 | 14      |      |
| Continuous Source Current (DC)  | I <sub>S</sub>   |                                         | 7       |      |
| Total Power Dissipation         | P <sub>T</sub>   |                                         | 55      | W    |
| Repetitive Avalanche Current    | I <sub>AR</sub>  | T <sub>ch</sub> = 150°C                 | 7       | A    |
| Single Avalanche Energy         | E <sub>AS</sub>  | T <sub>ch</sub> = 25°C                  | 160     | mJ   |
| Repetitive Avalanche Energy     | E <sub>AR</sub>  | T <sub>ch</sub> = 25°C                  | 16      |      |
| Dielectric Strength             | V <sub>dis</sub> | Terminals to case, AC 1 minute          | 2       | kV   |
| Mounting Torque                 | TOR              | ( Recommended torque : 0.5 N·m )        | 0.8     | N·m  |

●Electrical Characteristics  $T_c = 25^{\circ}\text{C}$

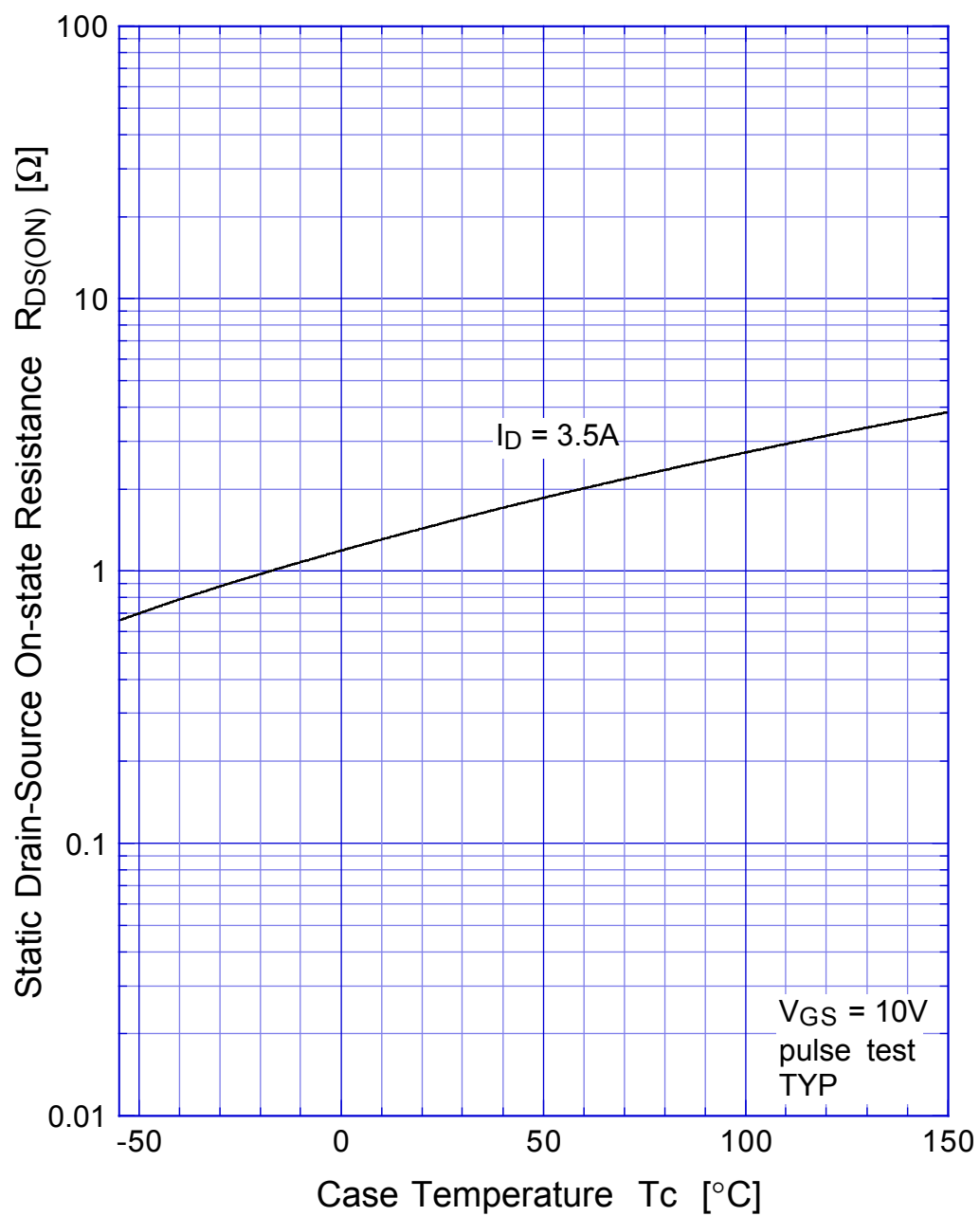
| Item                                    | Symbol        | Conditions                                                         | Min. | Typ. | Max.      | Unit                        |
|-----------------------------------------|---------------|--------------------------------------------------------------------|------|------|-----------|-----------------------------|
| Drain-Source Breakdown Voltage          | $V_{(BR)DSS}$ | $I_D = 1\text{mA}$ , $V_{GS} = 0\text{V}$                          | 900  |      |           | V                           |
| Zero Gate Voltage Drain Current         | $I_{DSS}$     | $V_{DS} = 900\text{V}$ , $V_{GS} = 0\text{V}$                      |      |      | 250       | $\mu\text{A}$               |
| Gate-Source Leakage Current             | $I_{GSS}$     | $V_{GS} = \pm 30\text{V}$ , $V_{DS} = 0\text{V}$                   |      |      | $\pm 0.1$ |                             |
| Forward Transconductance                | $g_{fs}$      | $I_D = 3.5\text{A}$ , $V_{DS} = 10\text{V}$                        | 3.6  | 6.0  |           | S                           |
| Static Drain-Source On-state Resistance | $R_{DS(ON)}$  | $I_D = 3.5\text{A}$ , $V_{GS} = 10\text{V}$                        |      | 1.5  | 2.0       | $\Omega$                    |
| Gate Threshold Voltage                  | $V_{TH}$      | $I_D = 1\text{mA}$ , $V_{DS} = 10\text{V}$                         | 2.5  | 3.0  | 3.5       | V                           |
| Source-Drain Diode Forward Voltage      | $V_{SD}$      | $I_S = 3.5\text{A}$ , $V_{GS} = 0\text{V}$                         |      |      | 1.5       |                             |
| Thermal Resistance                      | $\theta_{jc}$ | junction to case                                                   |      |      | 2.27      | $^{\circ}\text{C}/\text{W}$ |
| Total Gate Charge                       | $Q_g$         | $V_{DD} = 400\text{V}$ , $V_{GS} = 10\text{V}$ , $I_D = 7\text{A}$ |      | 63   |           | nC                          |
| Input Capacitance                       | $C_{iss}$     | $V_{DS} = 25\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{MHz}$   |      | 1450 |           | pF                          |
| Reverse Transfer Capacitance            | $C_{rss}$     |                                                                    |      | 37   |           |                             |
| Output Capacitance                      | $C_{oss}$     |                                                                    |      | 150  |           |                             |
| Turn-On Time                            | $t_{on}$      | $I_D = 3.5\text{A}$ , $R_L = 43\Omega$ , $V_{GS} = 10\text{V}$     |      | 95   | 170       | ns                          |
| Turn-Off Time                           | $t_{off}$     |                                                                    |      | 330  | 560       |                             |

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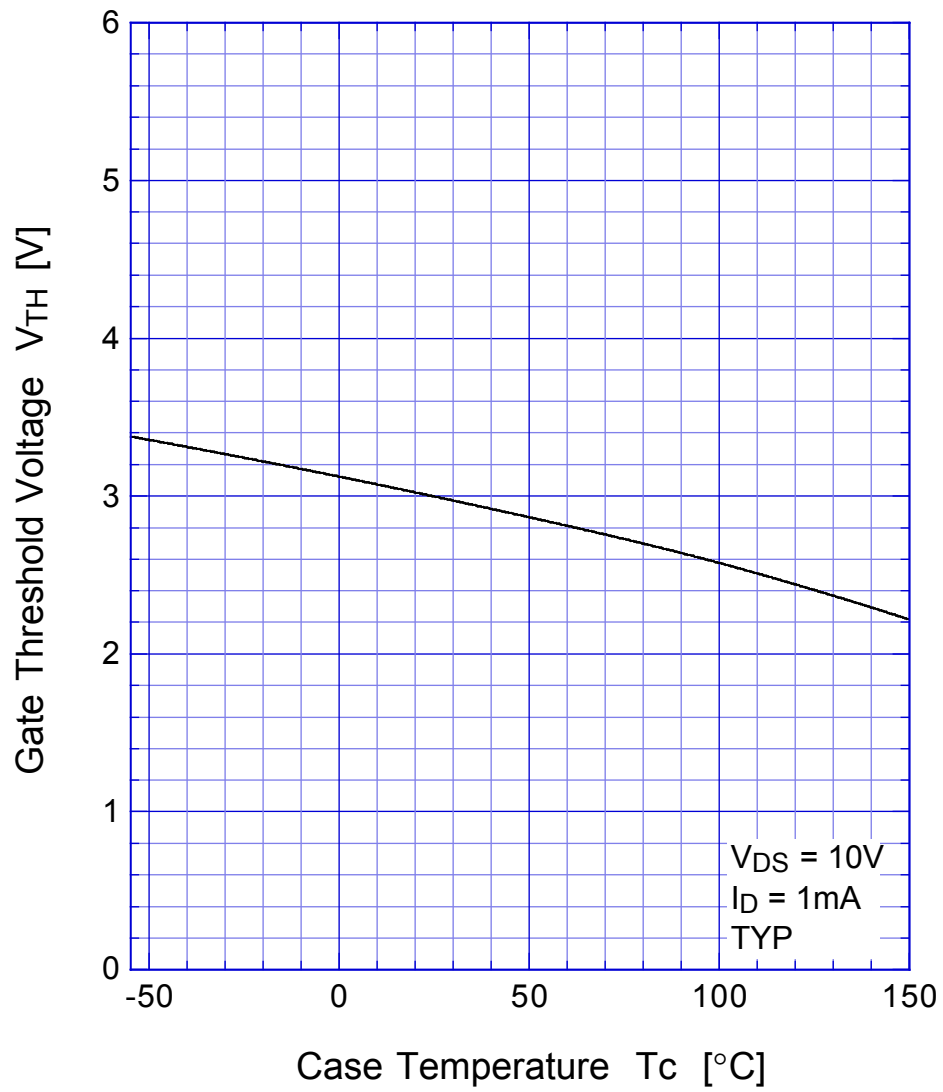
Transfer Characteristics



## 2SK2675 Static Drain-Source On-state Resistance

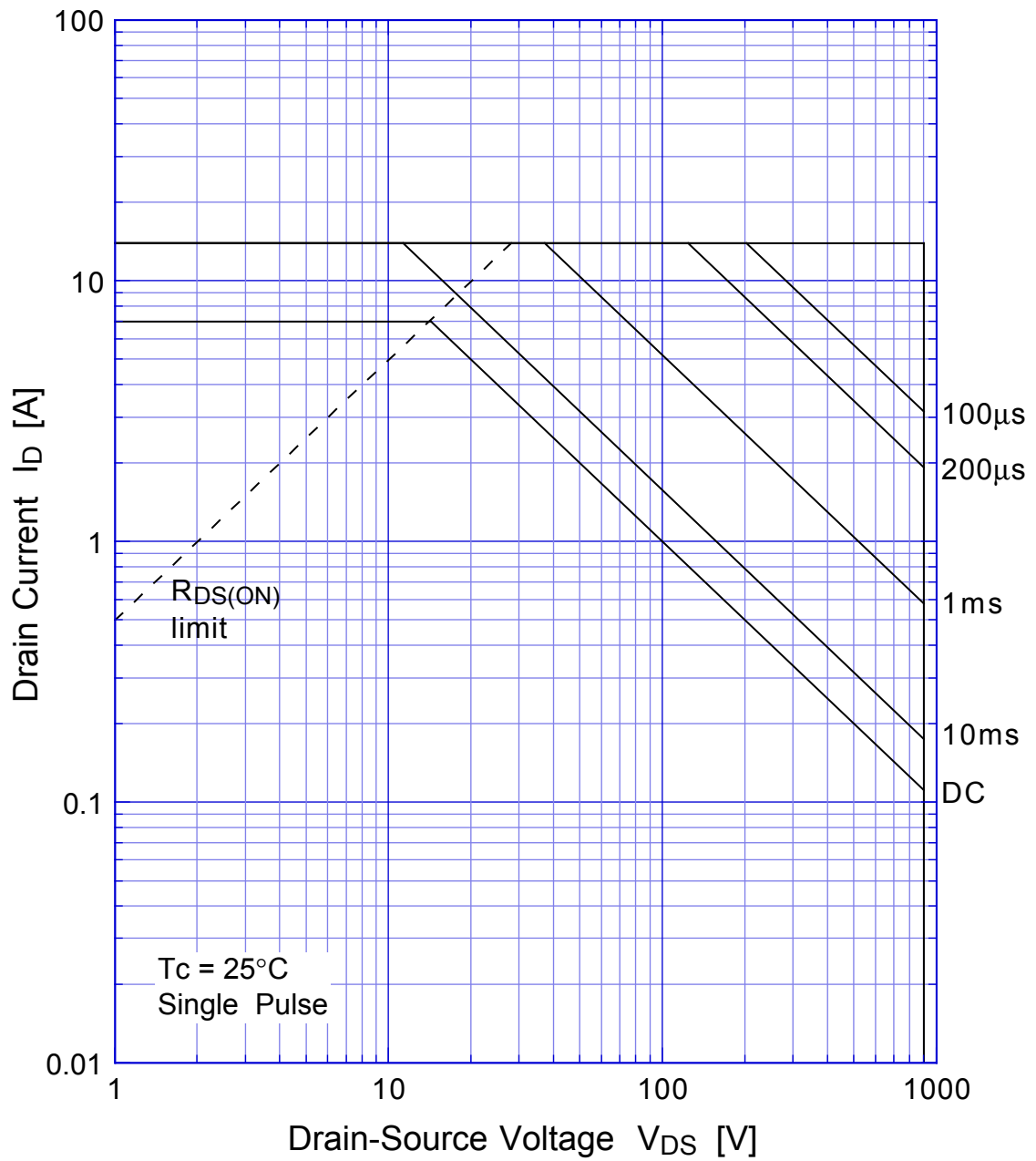


## 2SK2675 Gate Threshold Voltage



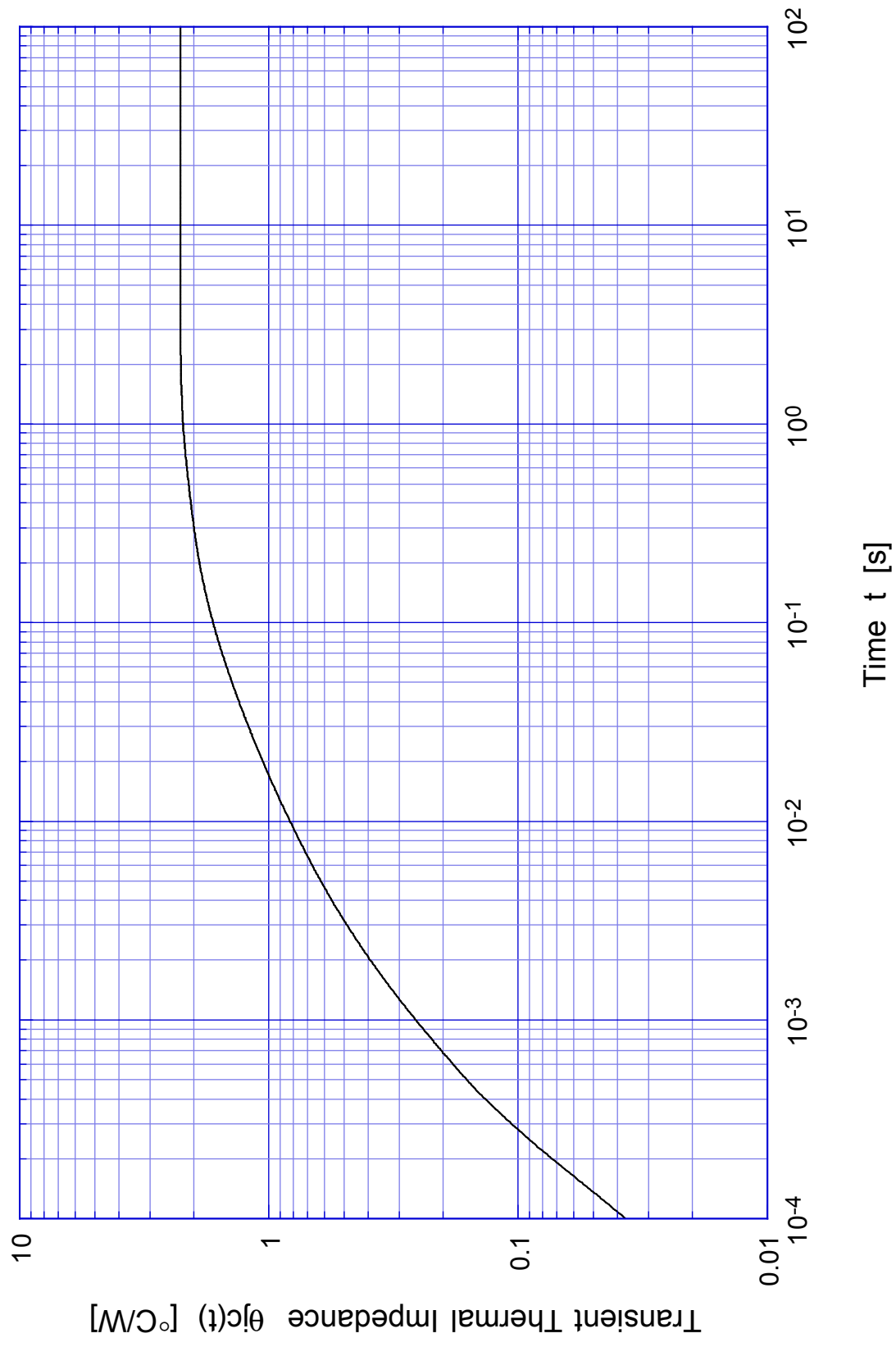
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Safe Operating Area

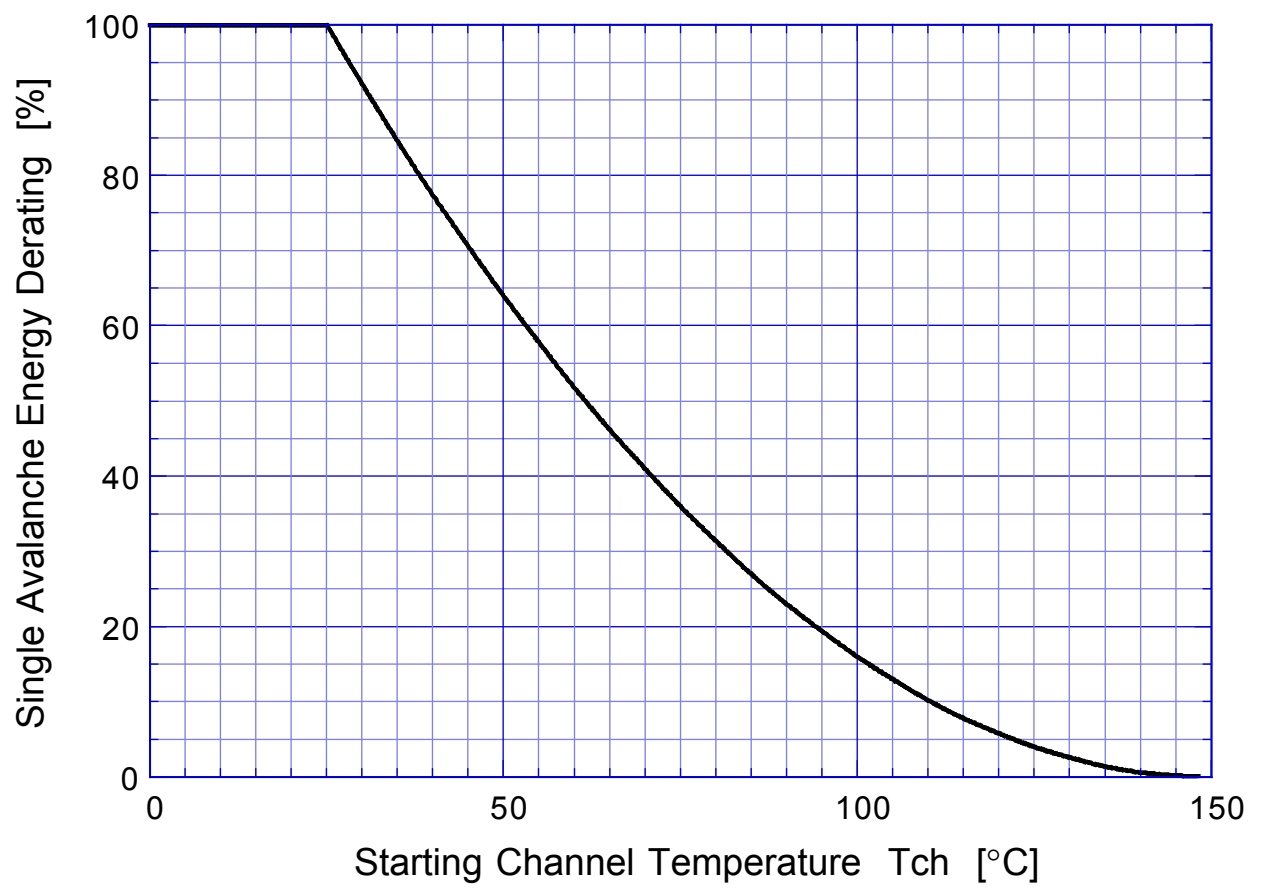


2SK2675      Transient Thermal Impedance

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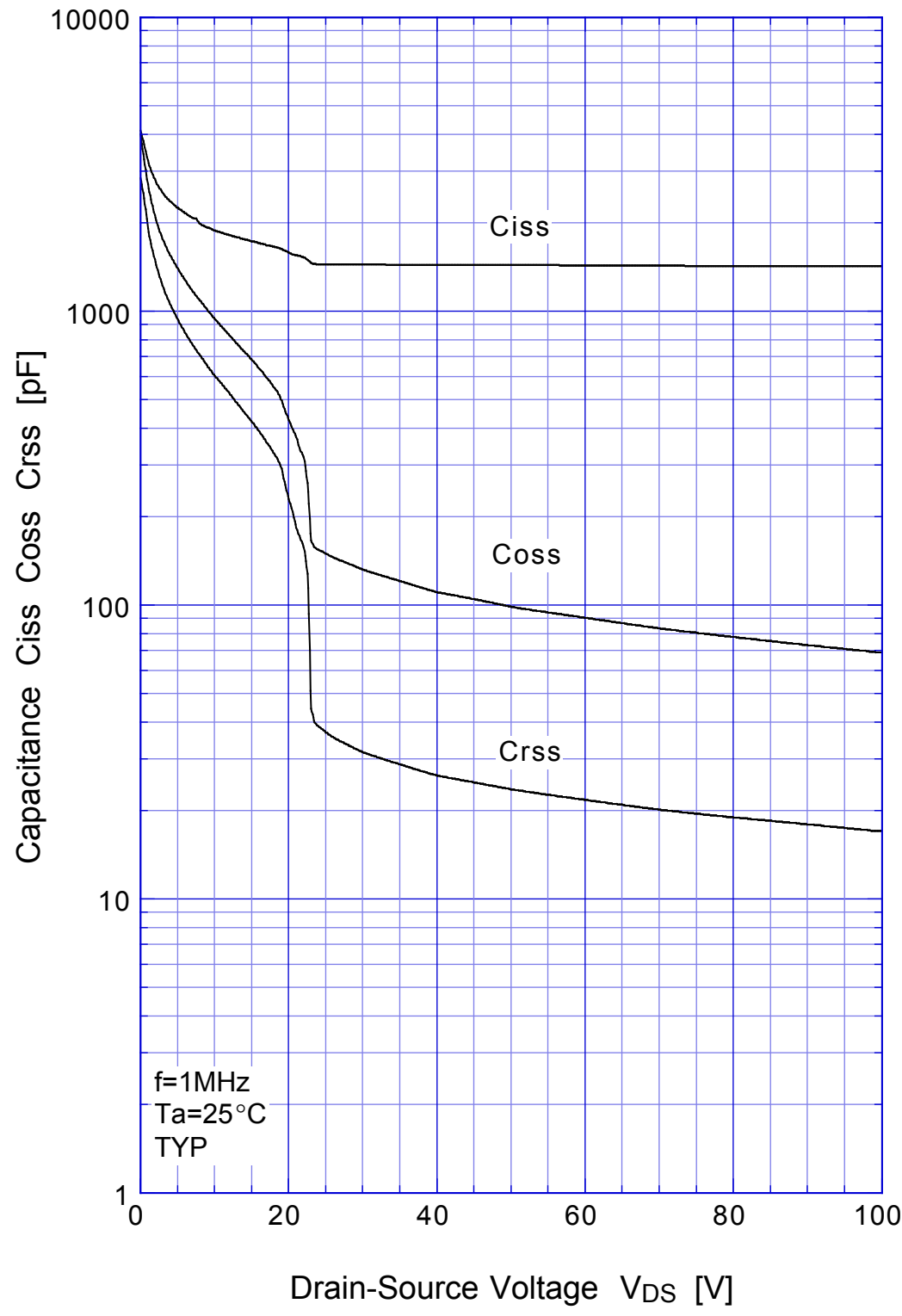


## 2SK2675 Single Avalanche Energy Derating

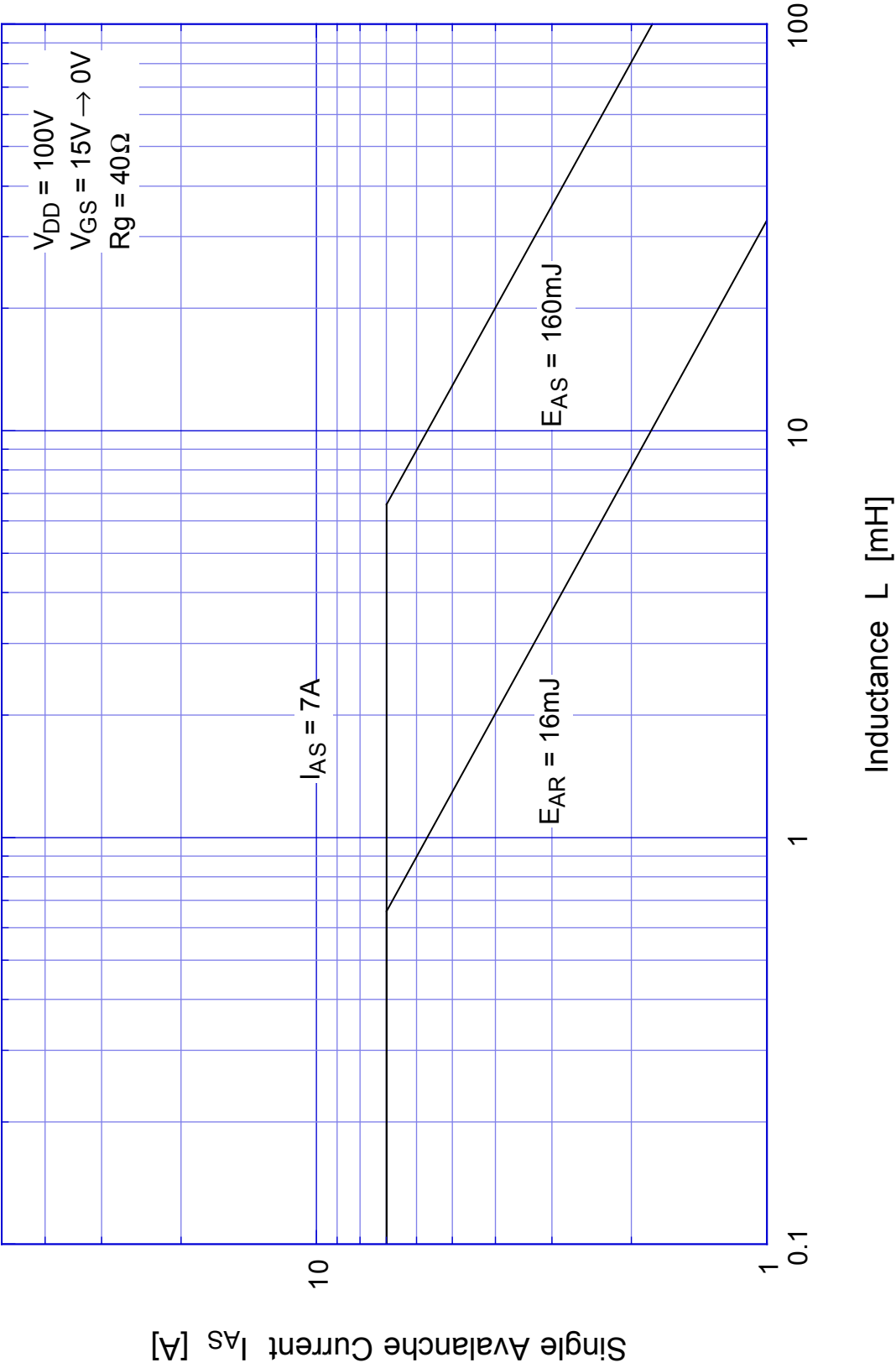




2SK2675 Capacitance

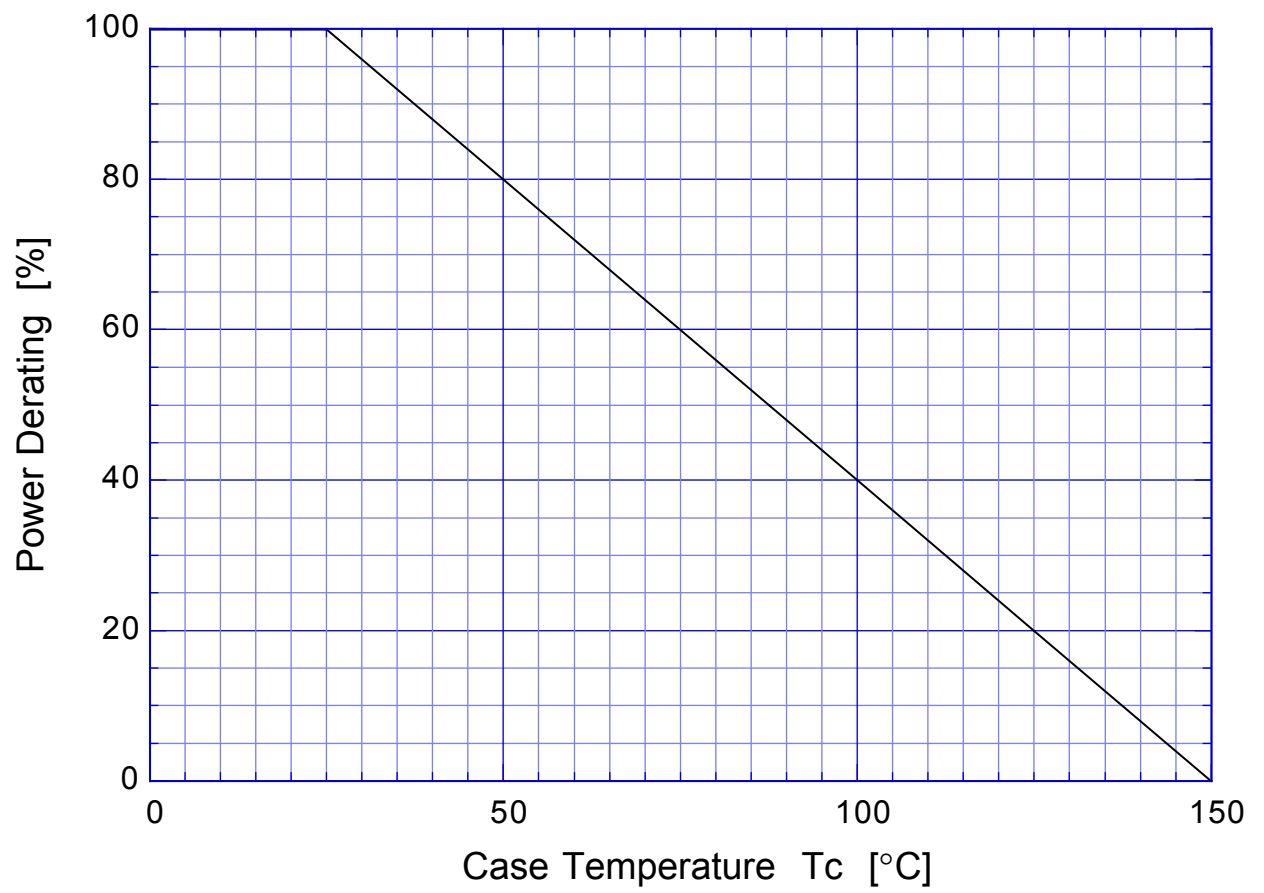


2SK2675      Single Avalanche Current - Inductive Load



2SK2675

Power Derating



## 2SK2675

## Gate Charge Characteristics

