

# SHINDENGEN

## HVX-2 Series Power MOSFET

### **N-Channel Enhancement type**

**2SK2671  
( F5F90HVX2 )**

900V 5A

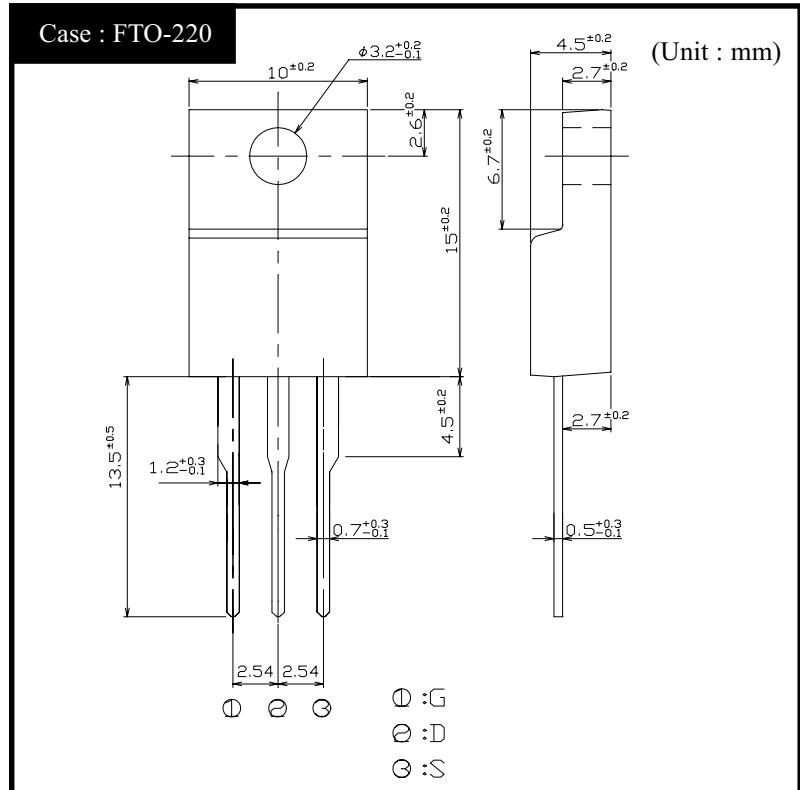
FEATURES

- Input capacitance ( $C_{iss}$ ) is small.  
Especially, input capacitance at 0 bias is small.
  - The static  $R_{ds(on)}$  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 ( $T_c = 25^\circ\text{C}$ )

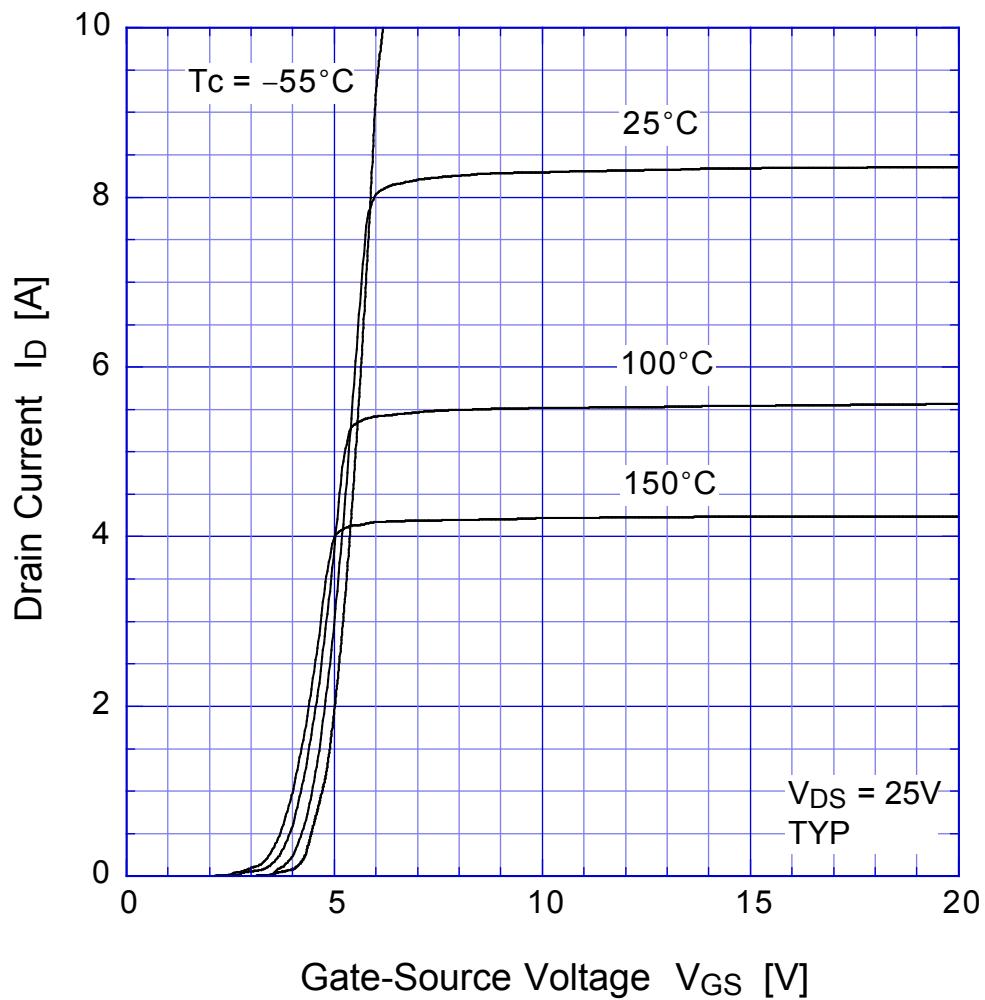
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T <sub>stg</sub>		-55~150	°C
Channel Temperature	T <sub>ch</sub>		150	
Drain-Source Voltage	V <sub>DSS</sub>		900	V
Gate-Source Voltage	V <sub>GSS</sub>		±30	
Continuous Drain Current(DC)	I <sub>D</sub>		5	A
Continuous Drain Current(Peak)	I <sub>DP</sub>	Pulse width≤10 μ s, Duty cycle≤1/100	10	
Continuous Source Current(DC)	I <sub>S</sub>		5	
Total Power Dissipation	P <sub>T</sub>		40	W
Repetitive Avalanche Current	I <sub>AR</sub>	T <sub>ch</sub> = 150°C	5	A
Single Avalanche Energy	E <sub>AS</sub>	T <sub>ch</sub> = 25°C	100	mJ
Repetitive Avalanche Energy	E <sub>AR</sub>	T <sub>ch</sub> = 25°C	10	
Dielectric Strength	V <sub>dis</sub>	Terminals to case, AC 1 minute	2	kV
Mounting Torque	T <sub>OR</sub>	( Recommended torque : 0.3 N·m )	0.5	N·m

●Electrical Characteristics T<sub>c</sub> = 25°C

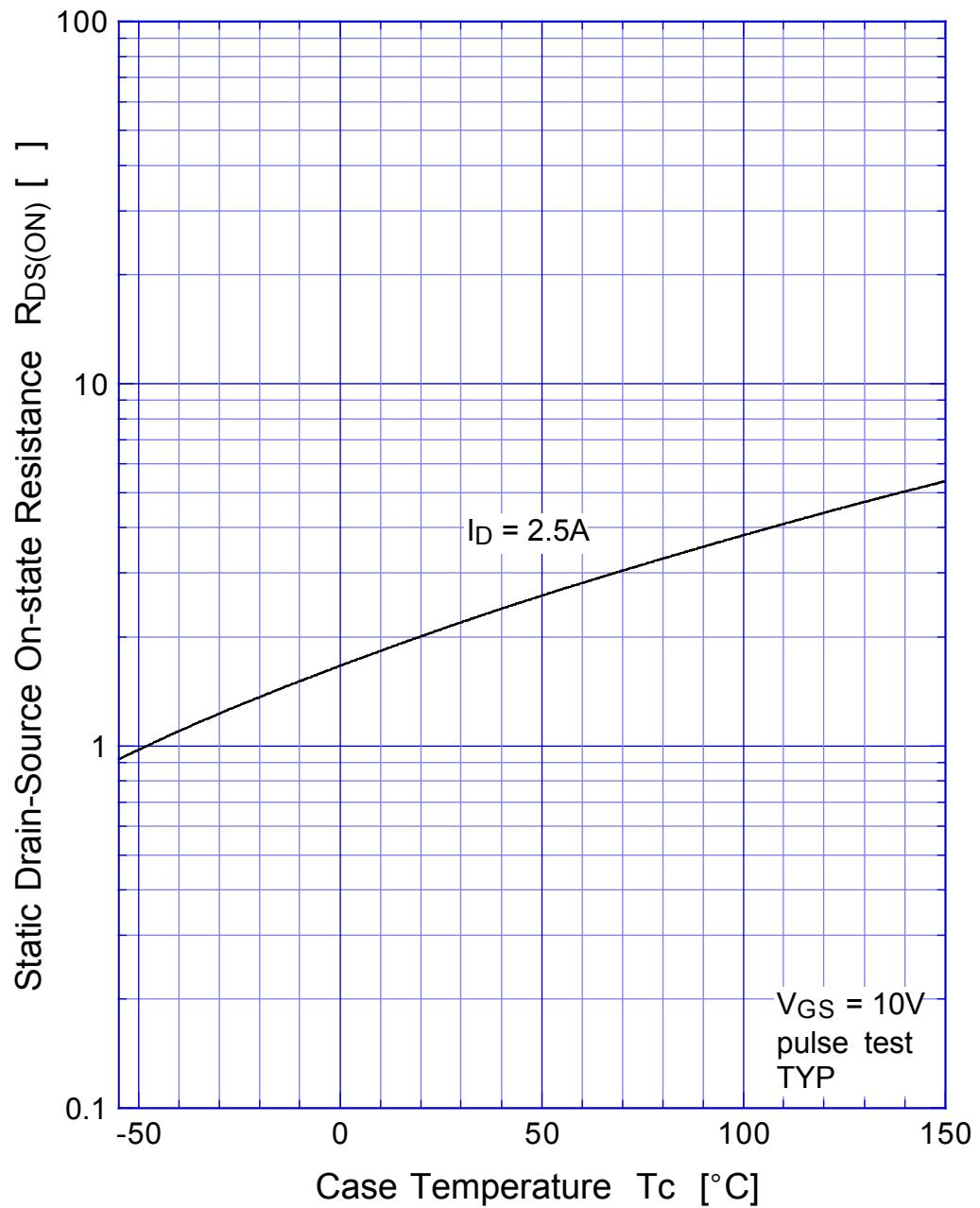
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	ID = 1mA, V <sub>GS</sub> = 0V	900			V	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 900V, V <sub>GS</sub> = 0V			250	μA	
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±30V, V <sub>DS</sub> = 0V			±0.1		
Forward Transconductance	g <sub>fs</sub>	ID = 2.5A, V <sub>DS</sub> = 10V	2.4	4.0		S	
Static Drain-Source On-state Resistance	R <sub>DSON</sub>	ID = 2.5A, V <sub>GS</sub> = 10V		2.1	2.8	Ω	
Gate Threshold Voltage	V <sub>TH</sub>	ID = 1mA, V <sub>DS</sub> = 10V	2.5	3.0	3.5	V	
Source-Drain Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = 2.5A, V <sub>GS</sub> = 0V			1.5		
Thermal Resistance	θ <sub>jc</sub>	junction to case			3.12	°C/W	
Total Gate Charge	Q <sub>g</sub>	V <sub>DD</sub> = 400V, V <sub>GS</sub> = 10V, ID = 5A		45		nC	
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V, f = 1MHz		1140		pF	
Reverse Transfer Capacitance	C <sub>rss</sub>			23			
Output Capacitance	C <sub>oss</sub>			105			
Turn-On Time	t <sub>on</sub>	ID = 2.5A, R <sub>L</sub> = 60Ω, V <sub>GS</sub> = 10V		55	100	ns	
Turn-Off Time	t <sub>off</sub>				210	350	

# 2SK2671

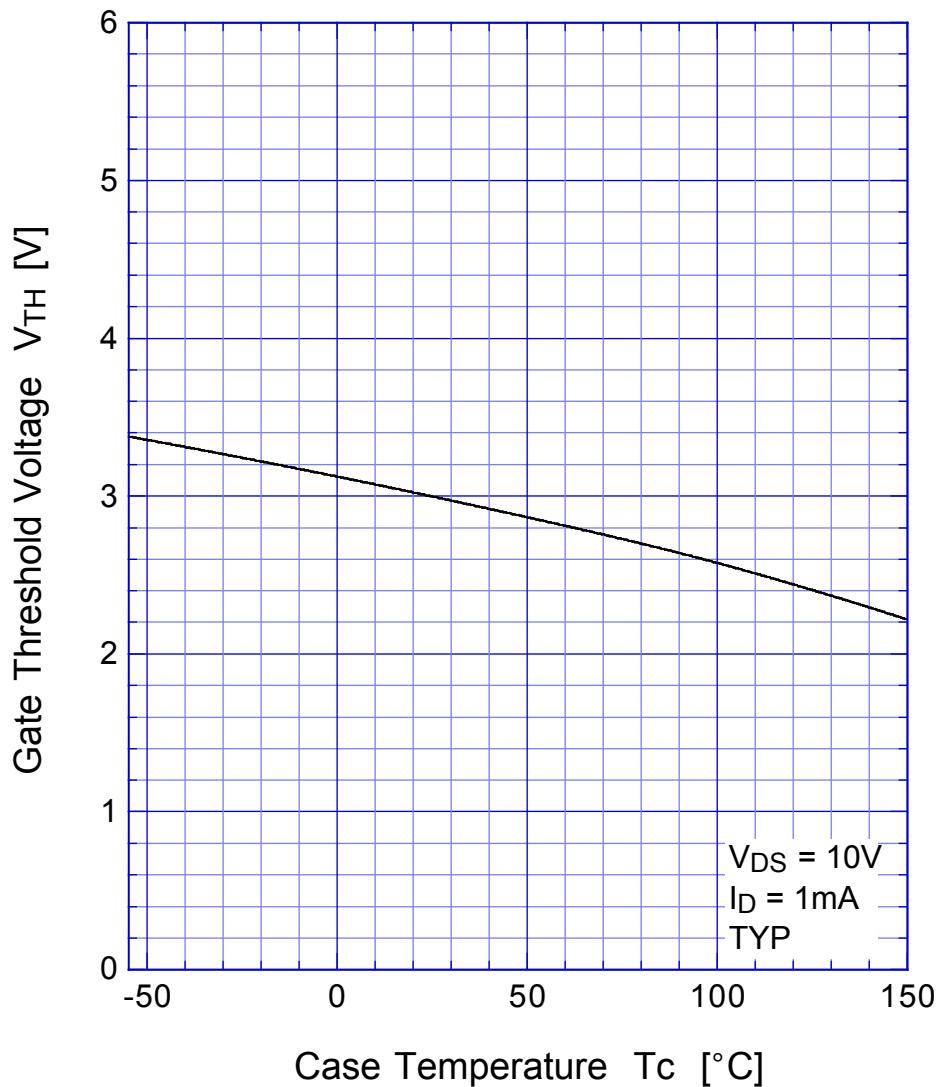
## Transfer Characteristics



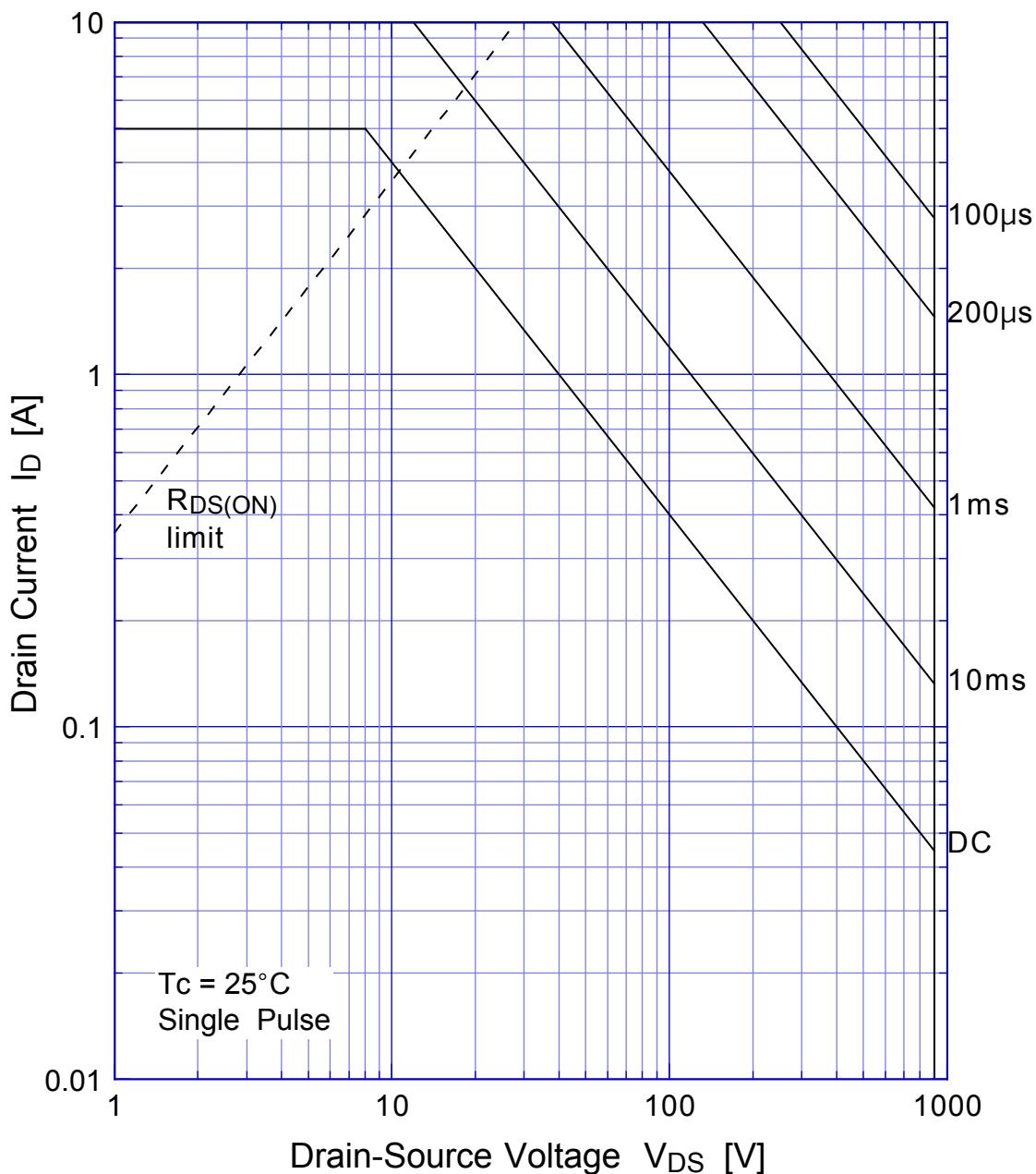
## 2SK2671 Static Drain-Source On-state Resistance



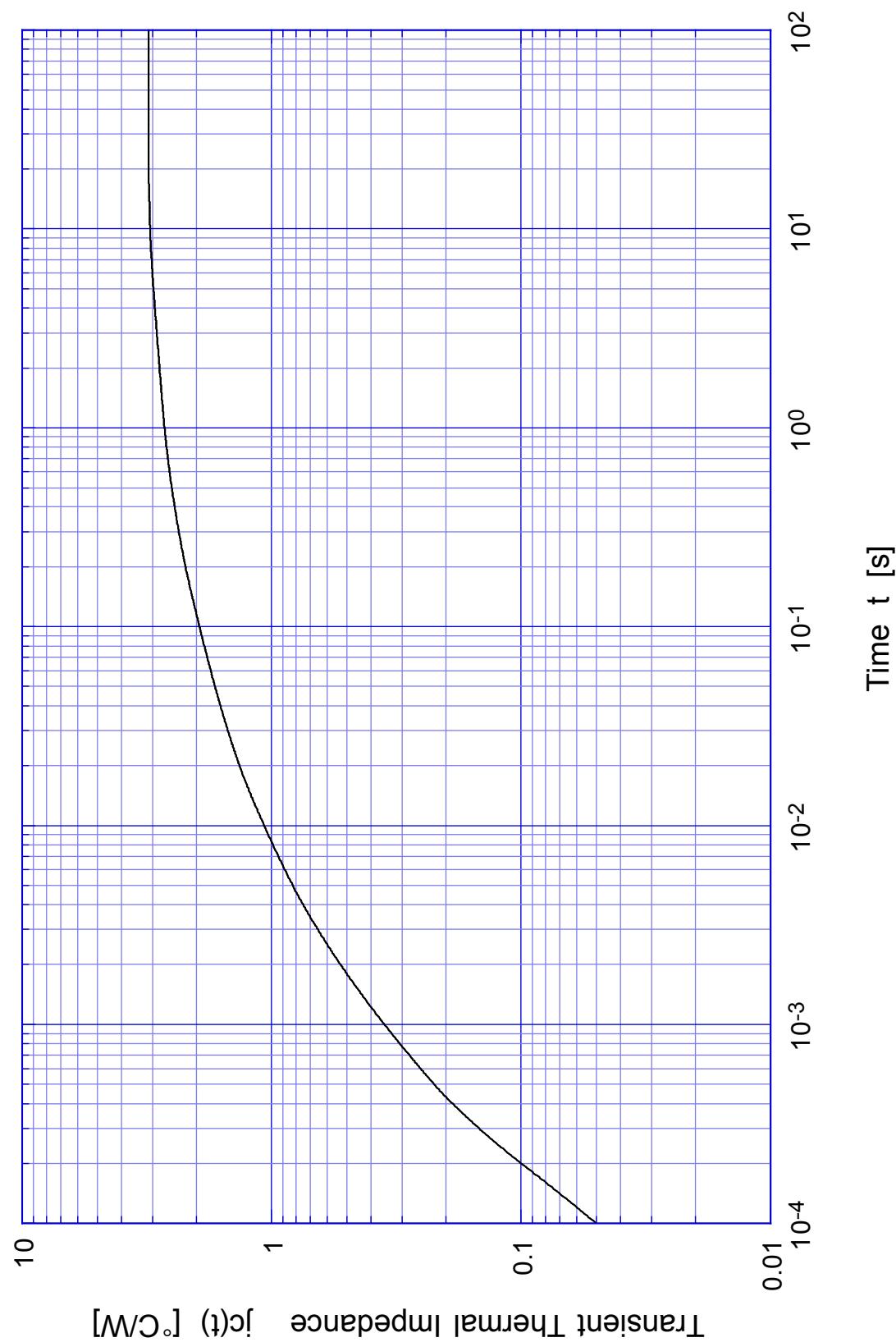
## 2SK2671 Gate Threshold Voltage



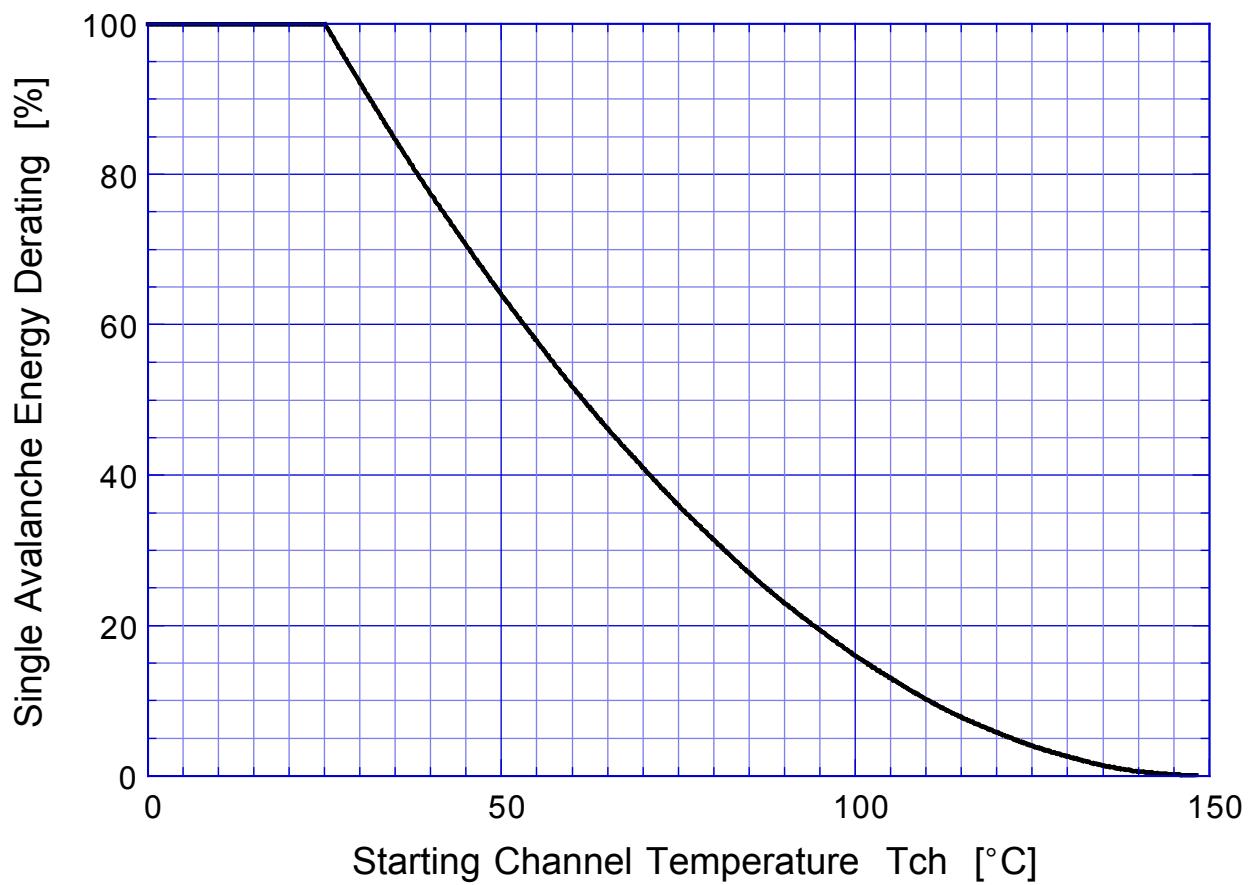
## 2SK2671 Safe Operating Area



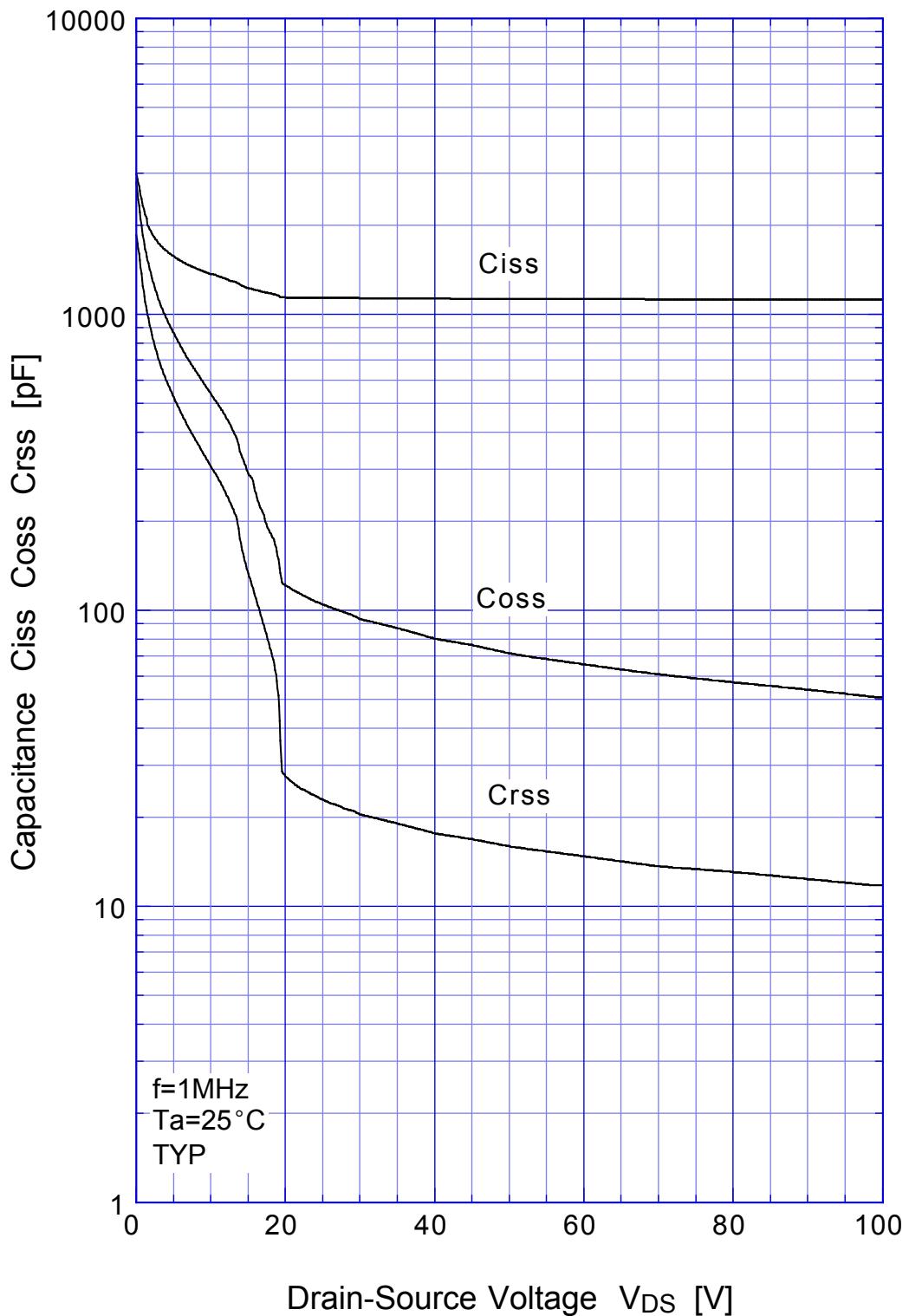
## 2SK2671 Transient Thermal Impedance



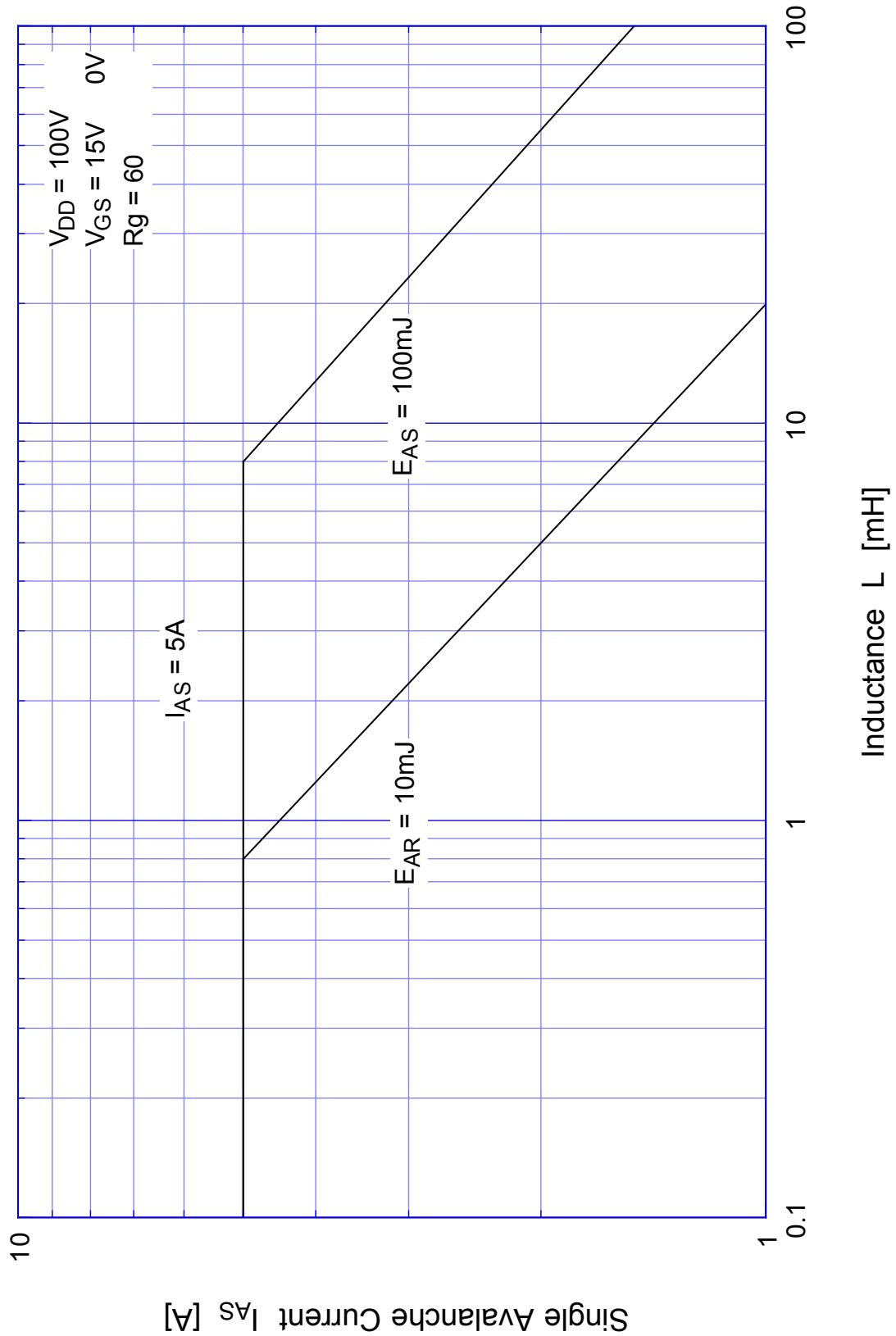
## 2SK2671 Single Avalanche Energy Derating



2SK2671 Capacitance

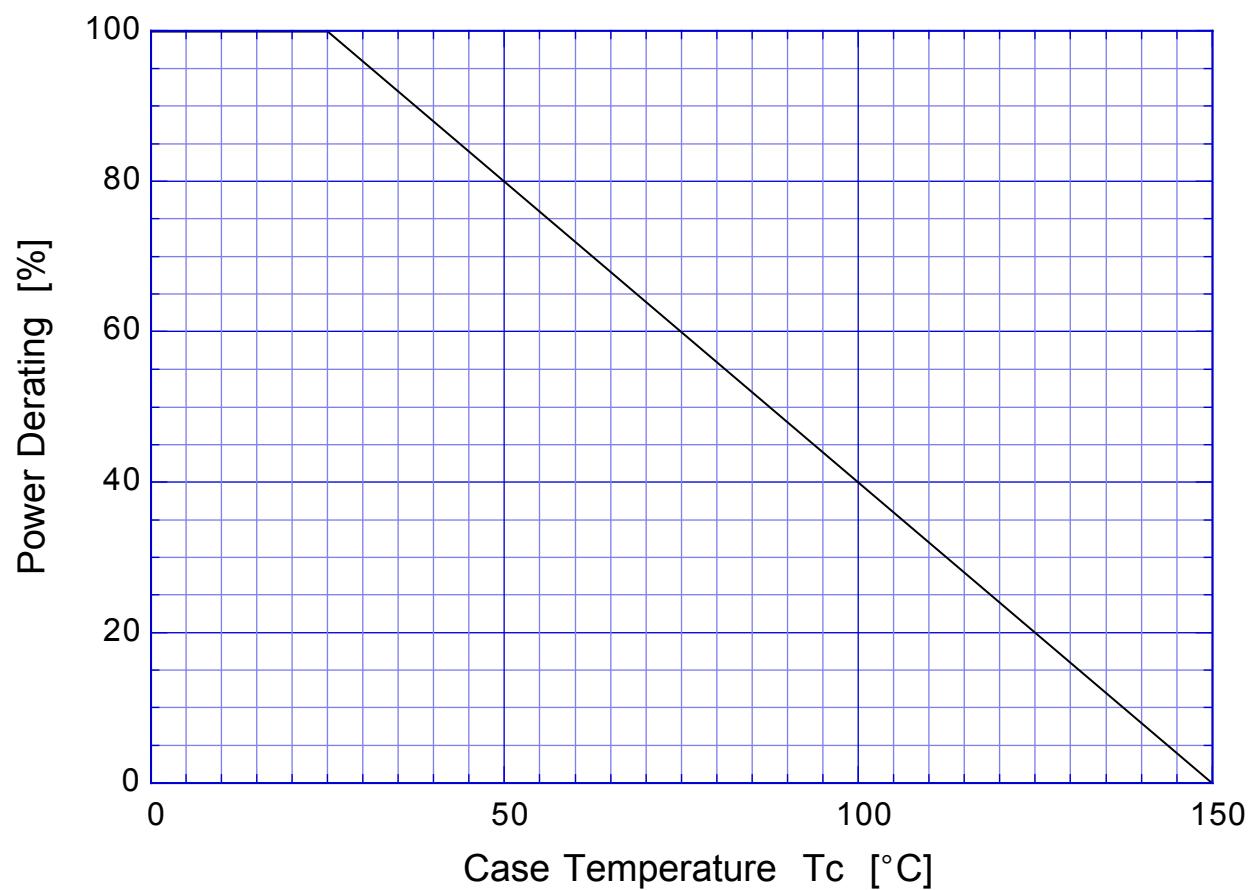


## 2SK2671 Single Avalanche Current - Inductive Load



**2SK2671**

Power Derating



## 2SK2671

### Gate Charge Characteristics

