

HVX-2 Series Power MOSFET

N-Channel Enhancement type

2SK2663

(F1E90HVX2)

900V 1A

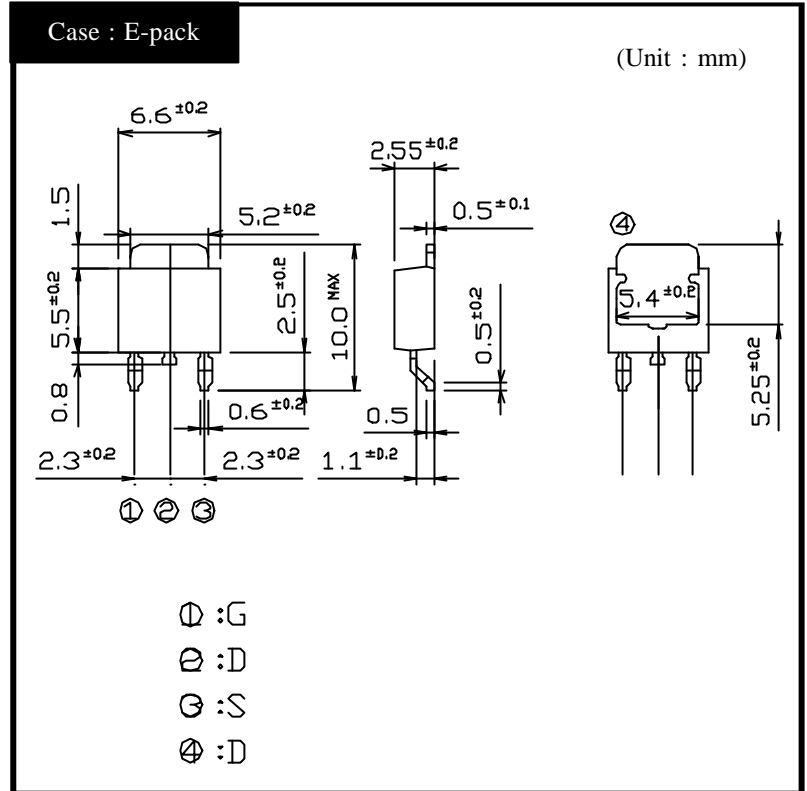
FEATURES

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

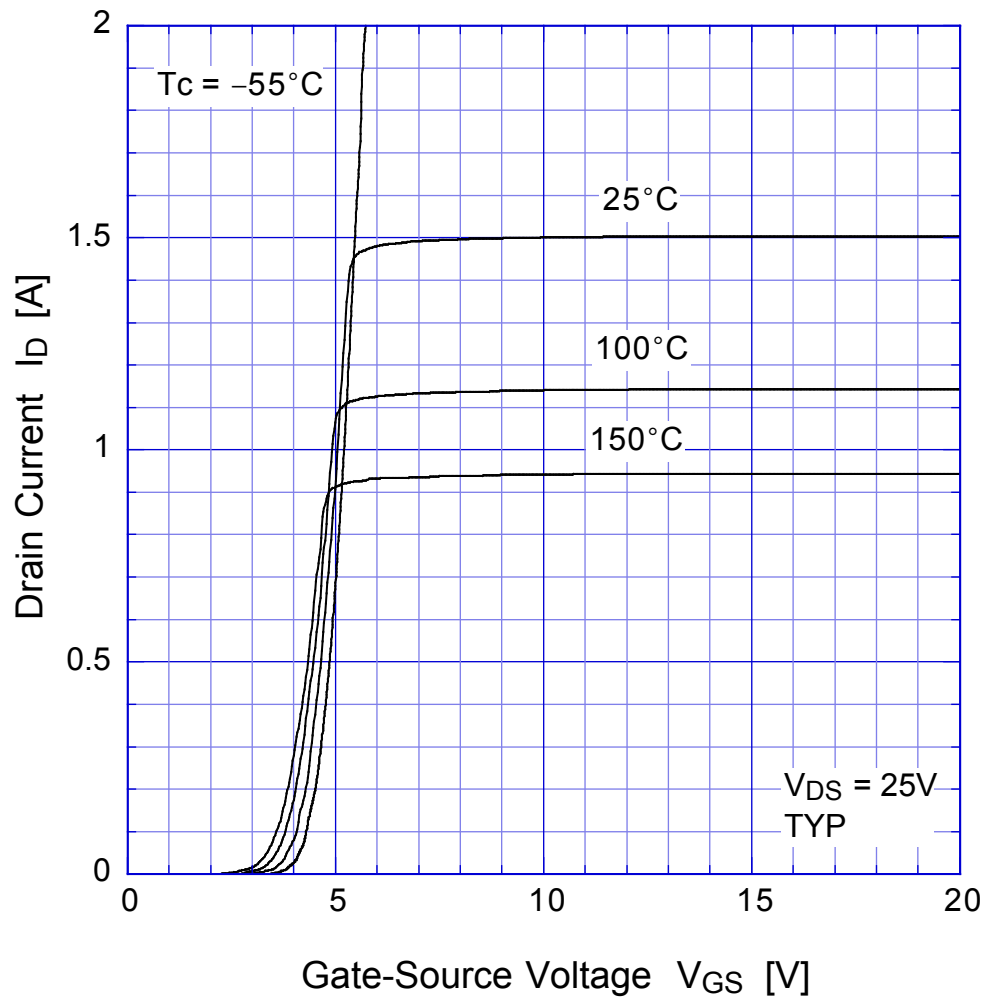
Absolute Maximum Ratings (Tc = 25)

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T _{stg}		-55 ~ 150	
Channel Temperature	T _{ch}		150	
Drain-Source Voltage	V _{DSS}		900	V
Gate-Source Voltage	V _{GSS}		± 30	
Continuous Drain Current (DC)	I _D		1	A
Continuous Drain Current (Peak)	I _{DP}	Pulse width 10 μs, Duty cycle 1/100	2	A
Continuous Source Current (DC)	I _S		1	
Total Power Dissipation	P _T		10	W
Repetitive Avalanche Current	I _{AR}	T _{ch} = 150	1	A
Single Avalanche Energy	E _{AS}	T _{ch} = 25	10	mJ
Repetitive Avalanche Energy	E _{AR}	T _{ch} = 25	1	

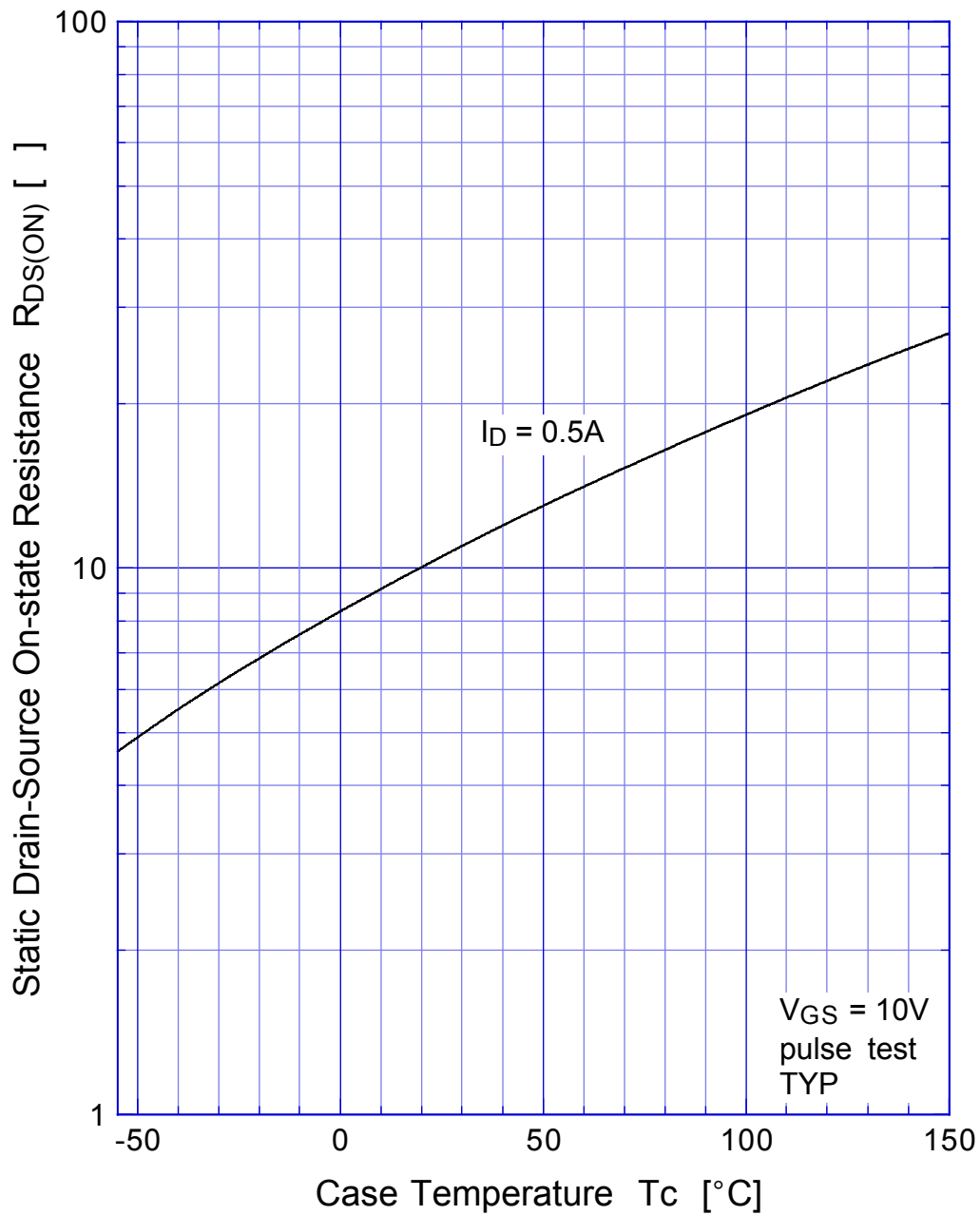
● Electrical Characteristics $T_c = 25^\circ\text{C}$

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	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30\text{V}, V_{DS} = 0\text{V}$			± 0.1	
Forward Transconductance	g_{fs}	$I_D = 0.5\text{A}, V_{DS} = 10\text{V}$	0.6	1.0		S
Static Drain-Source On-state Resistance	$R_{DS(ON)}$	$I_D = 0.5\text{A}, V_{GS} = 10\text{V}$		10.5	14	Ω
Gate Threshold Voltage	V_{TH}	$I_D = 0.2\text{mA}, V_{DS} = 10\text{V}$	2.5	3.0	3.5	V
Source-Drain Diode Forward Voltage	V_{SD}	$I_S = 0.5\text{A}, V_{GS} = 0\text{V}$			1.5	
Thermal Resistance	θ_{jc}	junction to case			12.5	$^\circ\text{C}/\text{W}$
Total Gate Charge	Q_g	$V_{DD} = 400\text{V}, V_{GS} = 10\text{V}, I_D = 1\text{A}$		10.5		nC
Input Capacitance	C_{iss}	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$		230		pF
Reverse Transfer Capacitance	C_{rss}			5		
Output Capacitance	C_{oss}			23		
Turn-On Time	t_{on}	$I_D = 0.5\text{A}, V_{DD} = 150\text{V}, R_L = 300\Omega$		10	18	ns
Turn-Off Time	t_{off}			50	85	

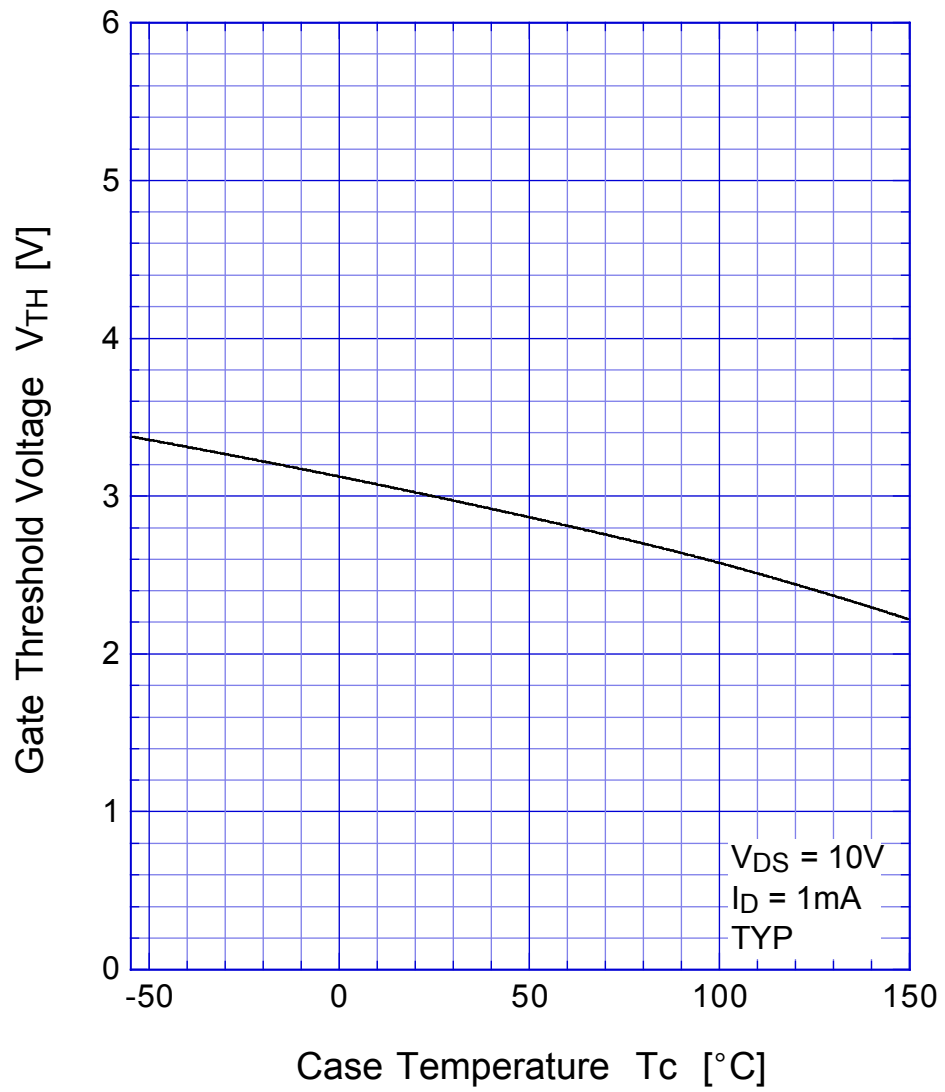
2SK2663 Transfer Characteristics



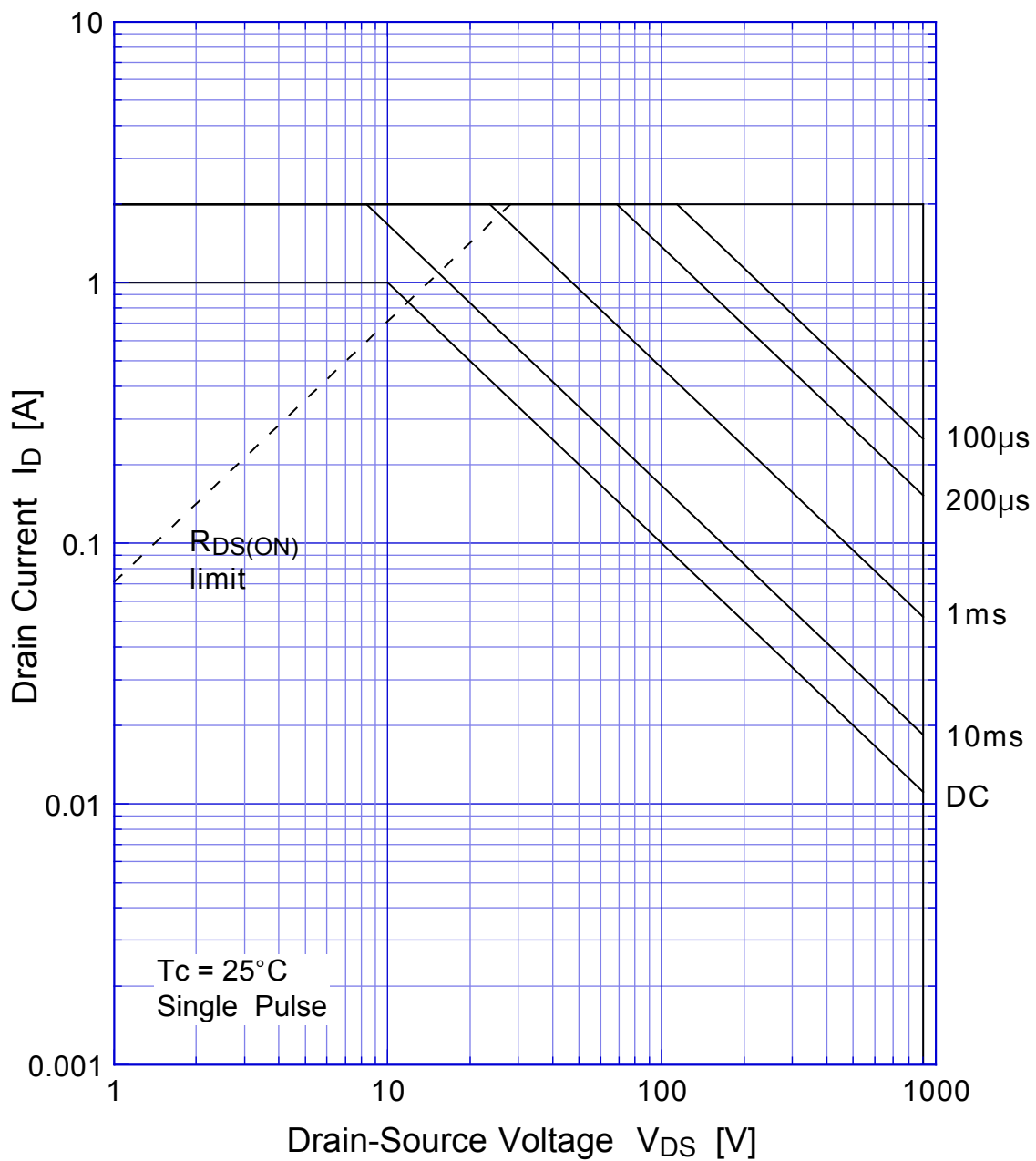
2SK2663 Static Drain-Source On-state Resistance



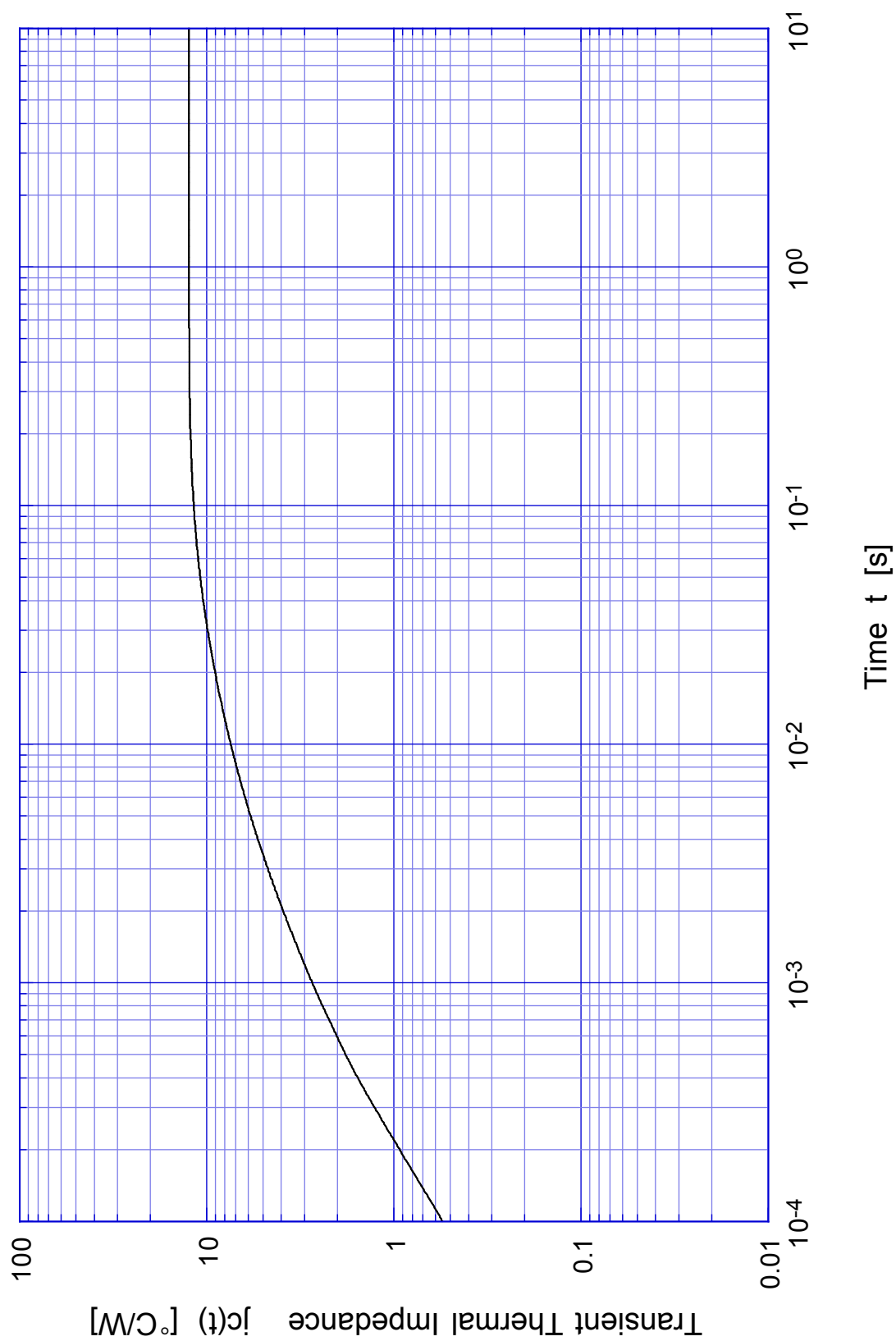
2SK2663 Gate Threshold Voltage



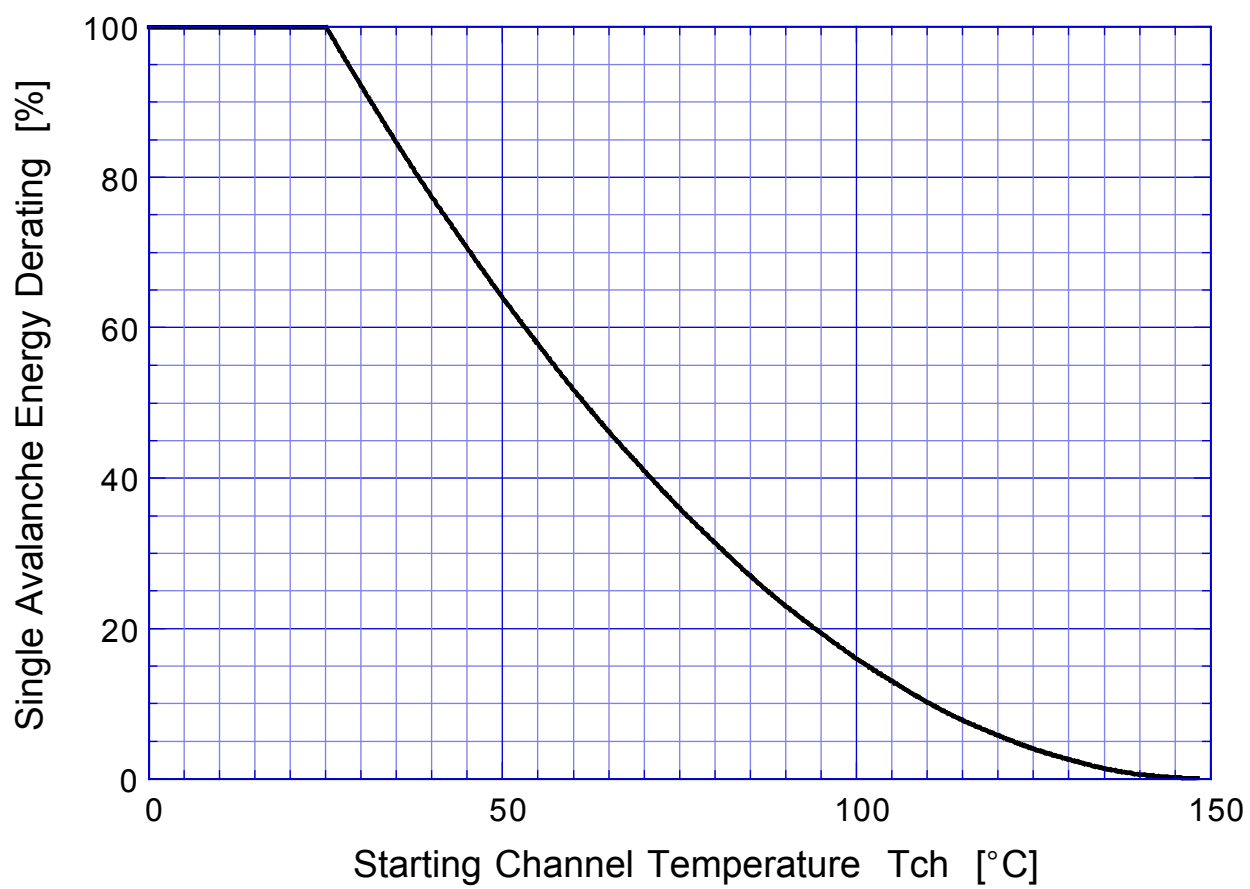
2SK2663 Safe Operating Area



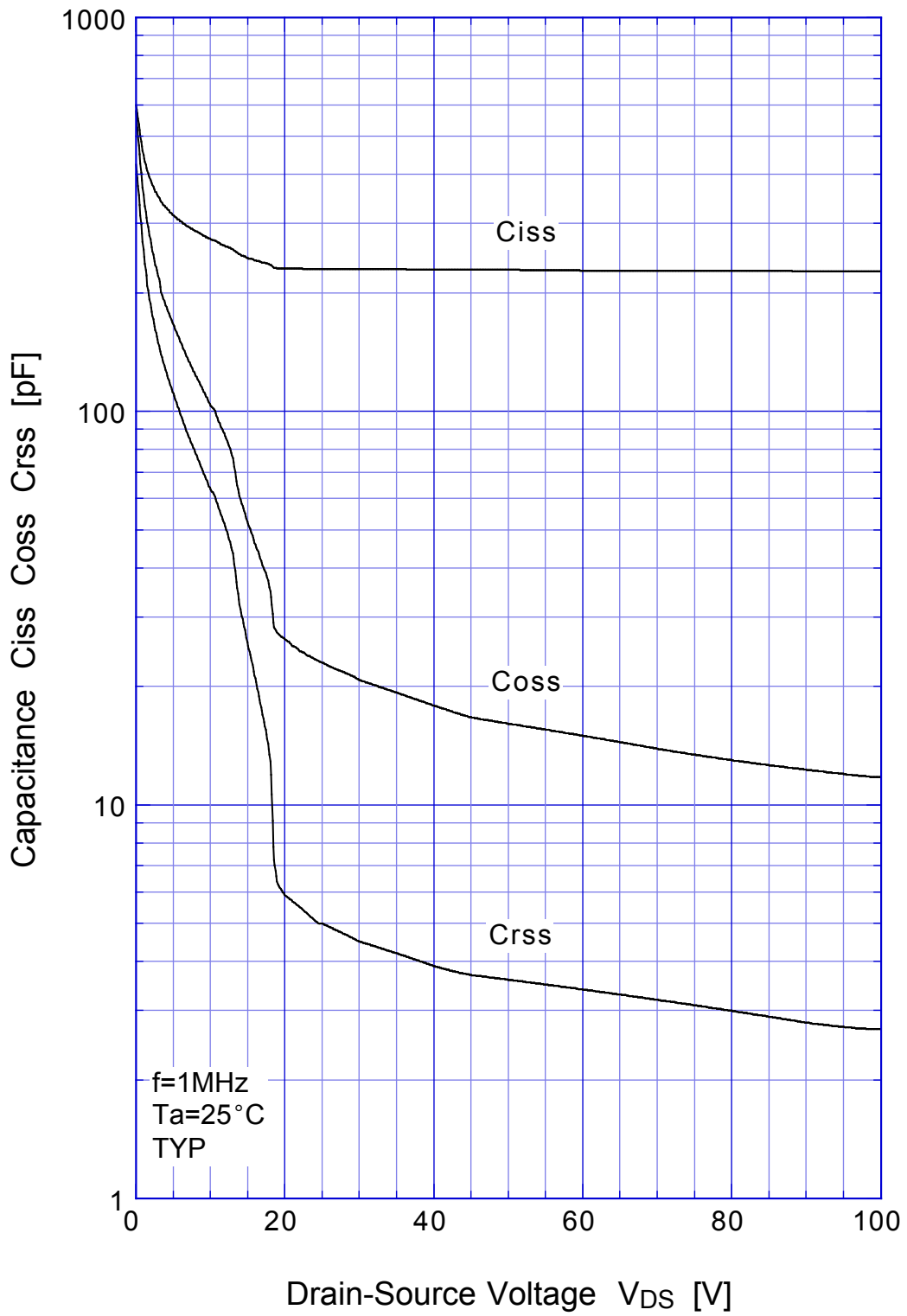
2SK2663 Transient Thermal Impedance



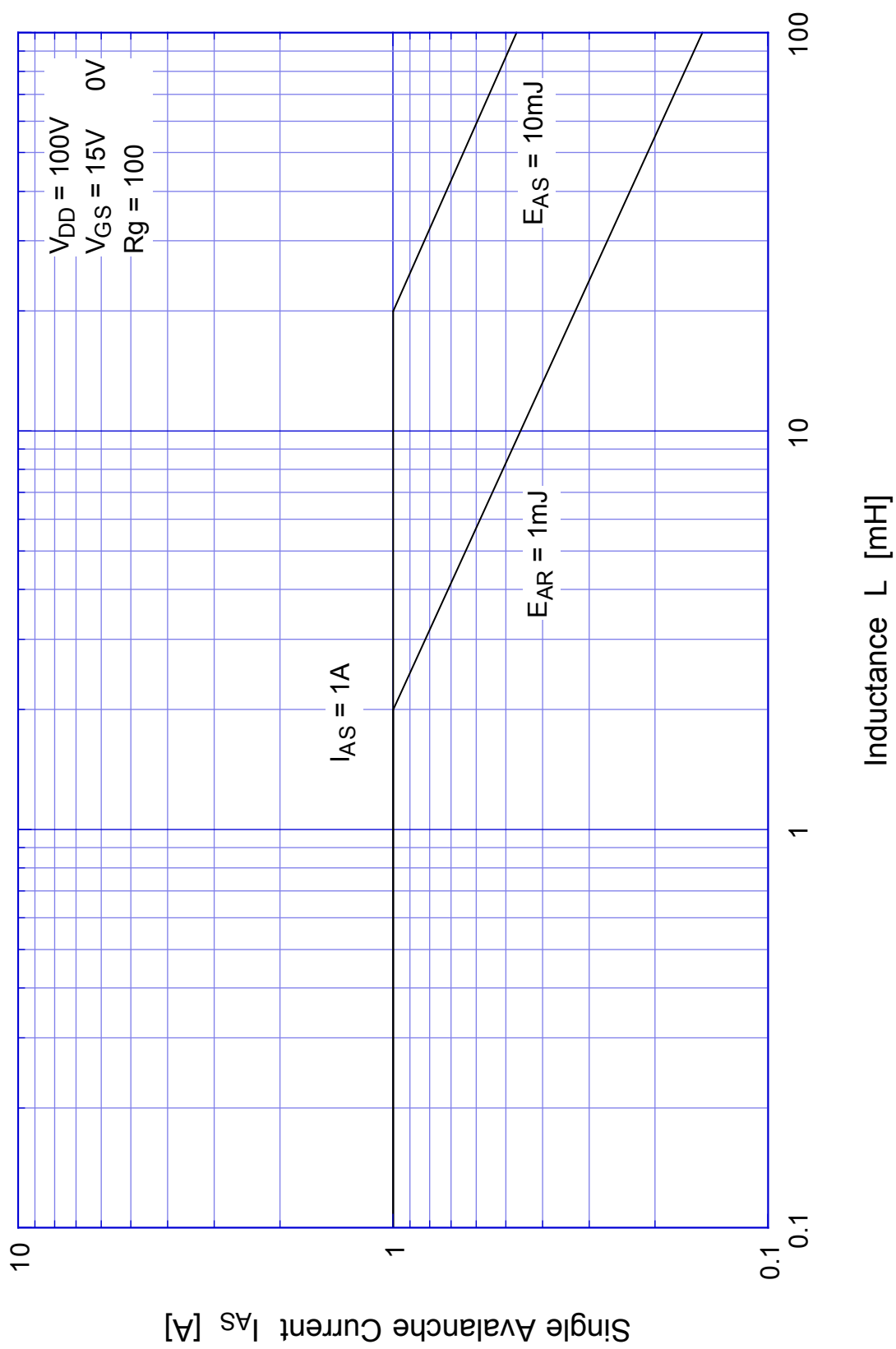
2SK2663 Single Avalanche Energy Derating



2SK2663 Capacitance

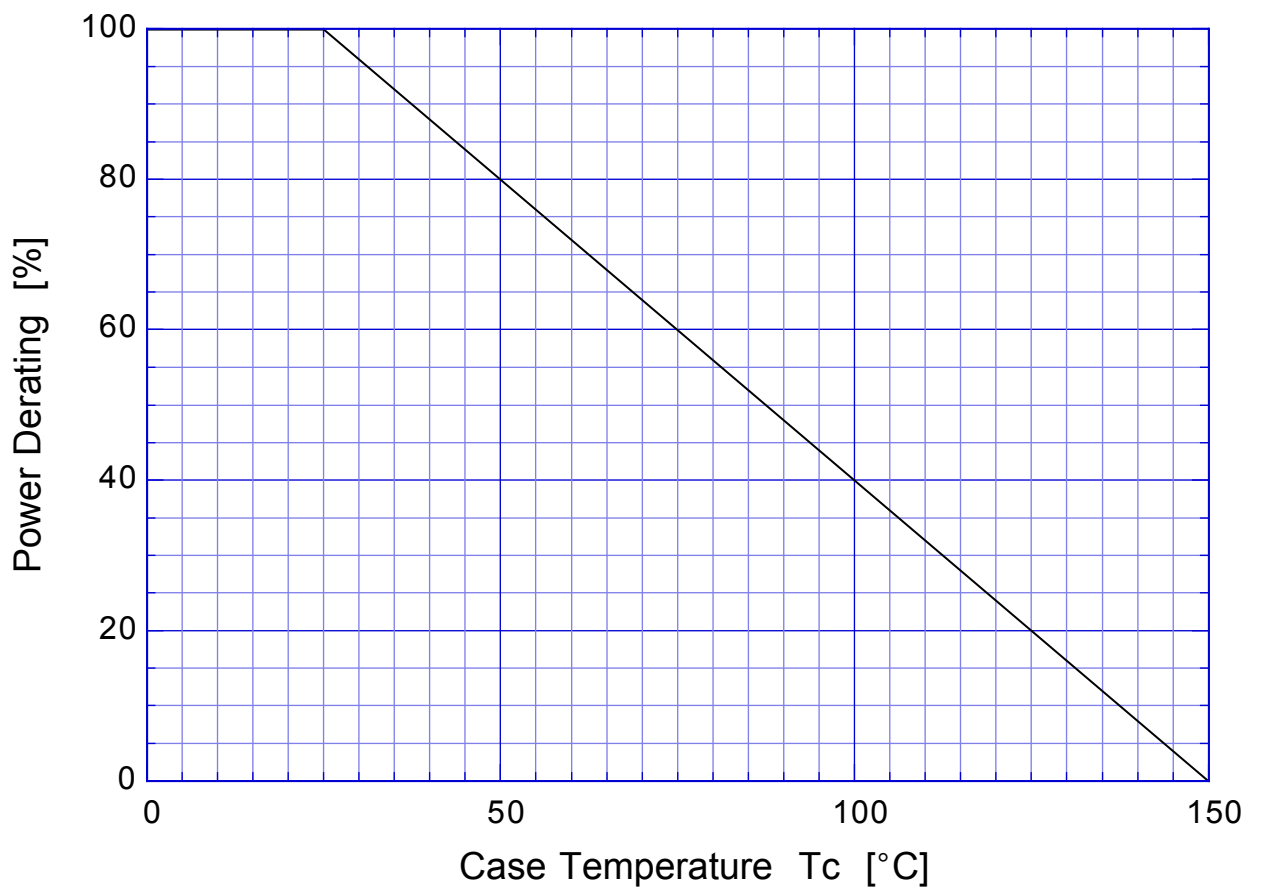


2SK2663 Single Avalanche Current - Inductive Load



2SK2663

Power Derating



2SK2663 Gate Charge Characteristics

