

SHINDENGEN

HVX-2 Series Power MOSFET

N-Channel Enhancement type

2SK2663
(F1E90HVX2)

900V 1A

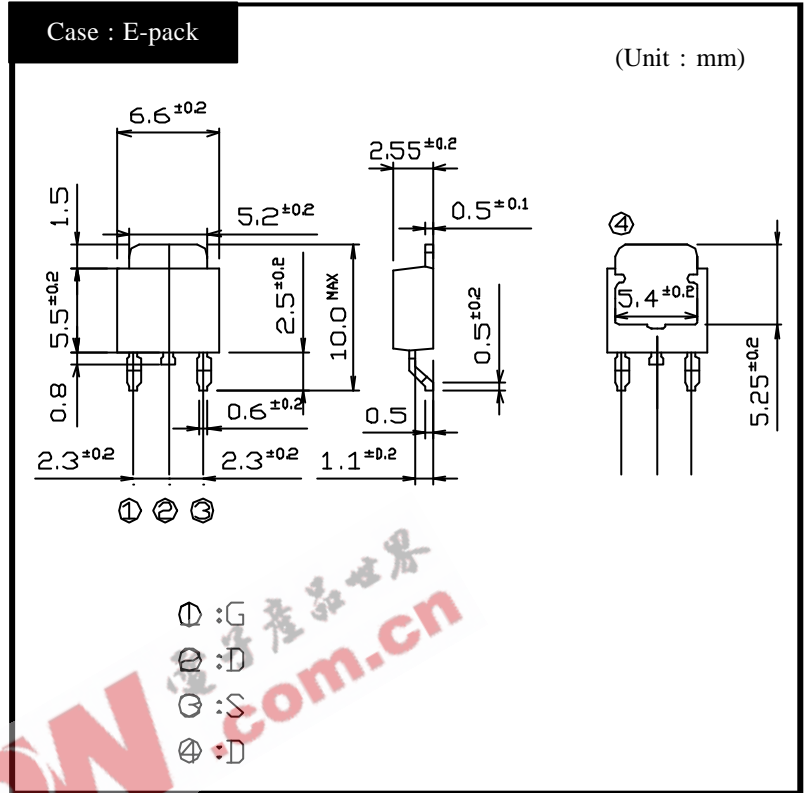
FEATURES

- 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	
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	

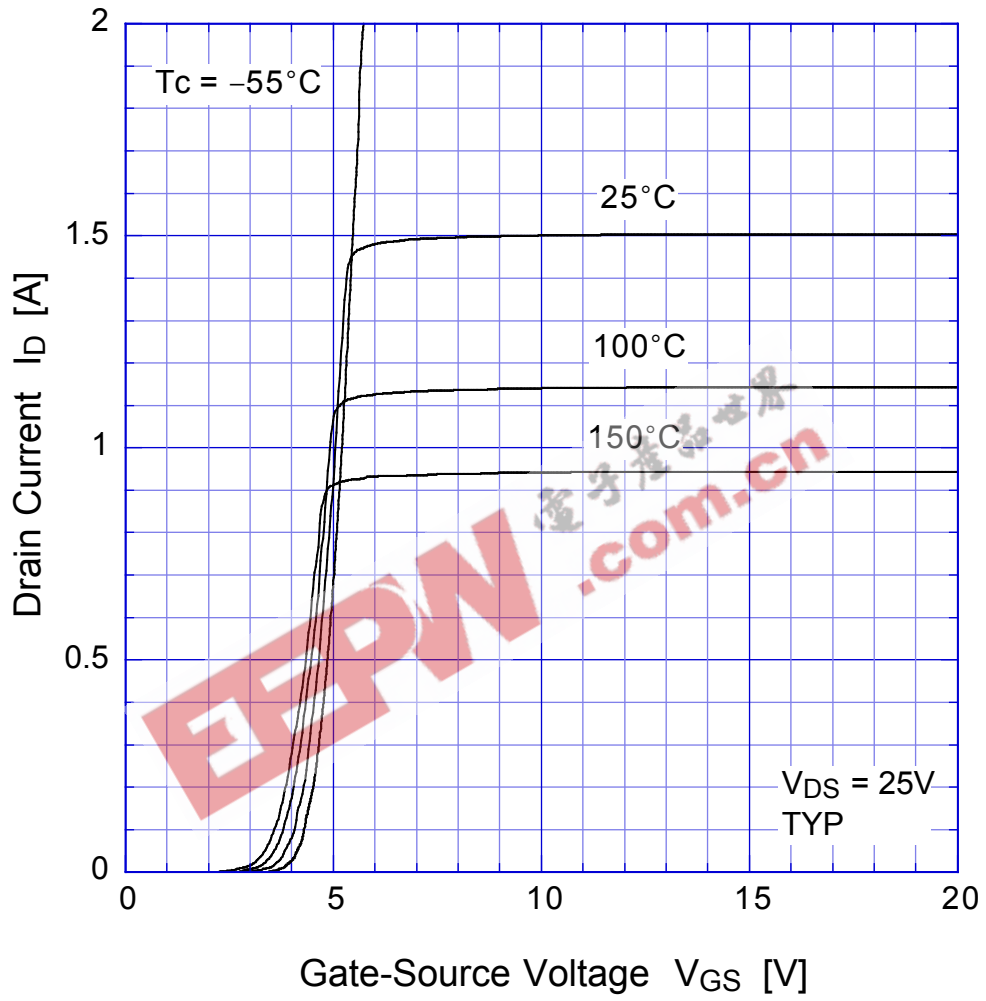
●Electrical Characteristics $T_c = 25^\circ\text{C}$

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	

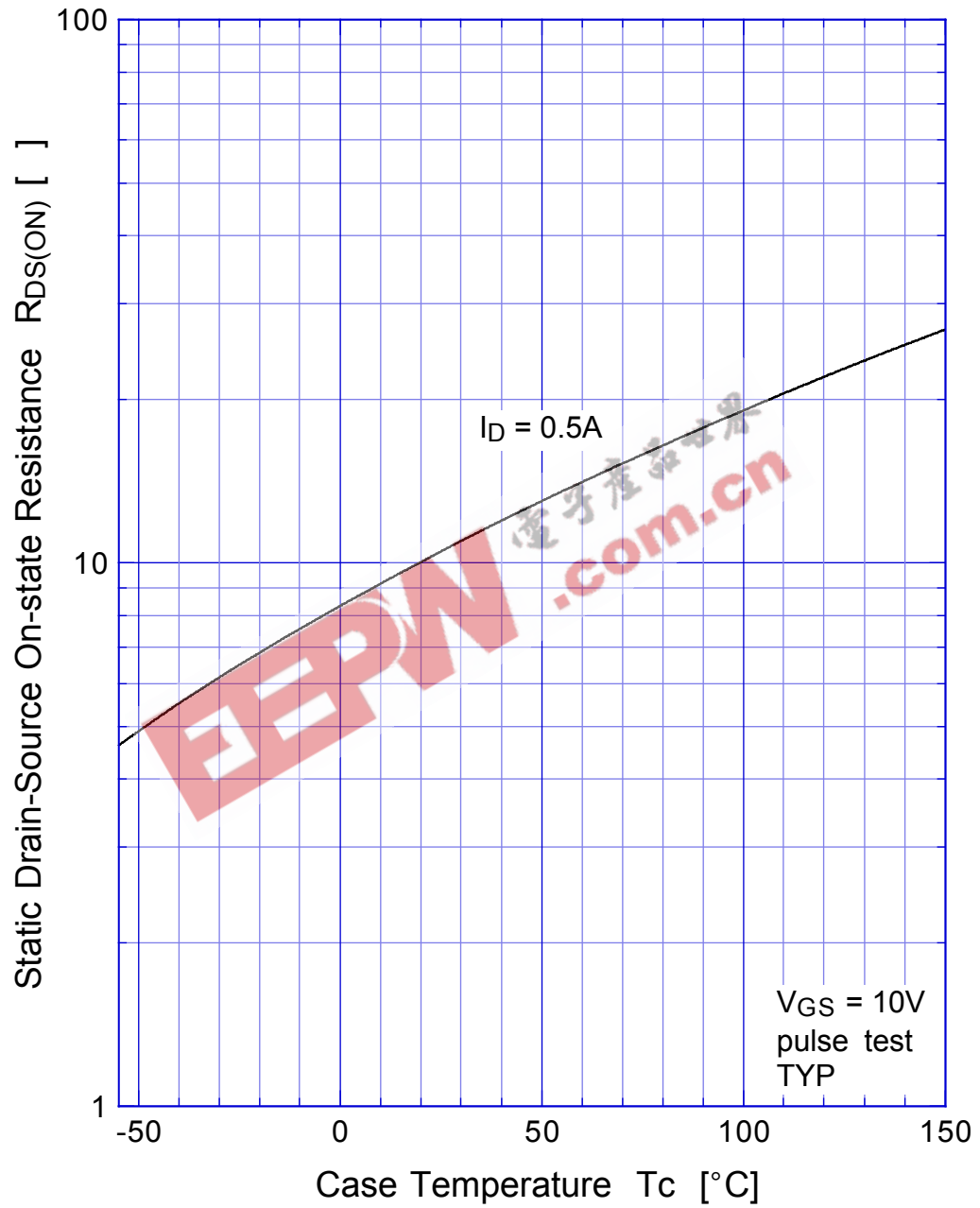
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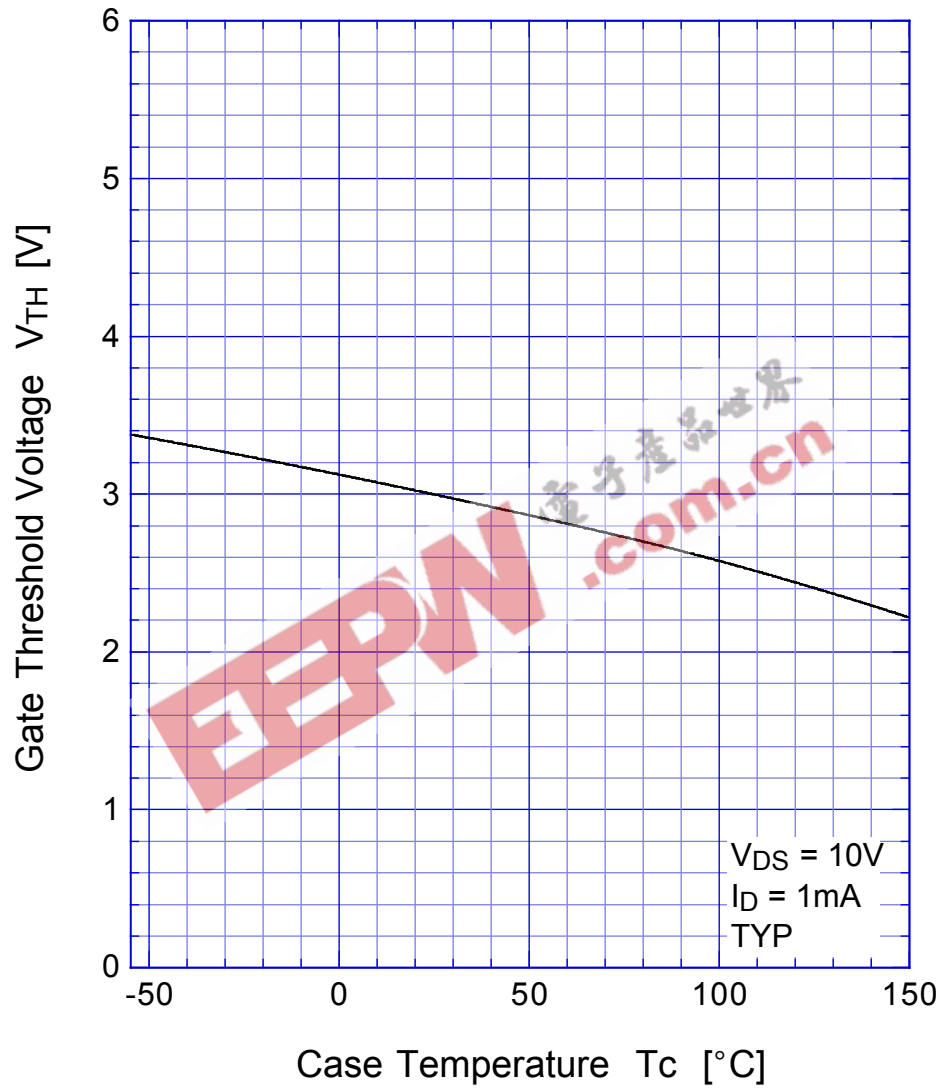
Transfer Characteristics



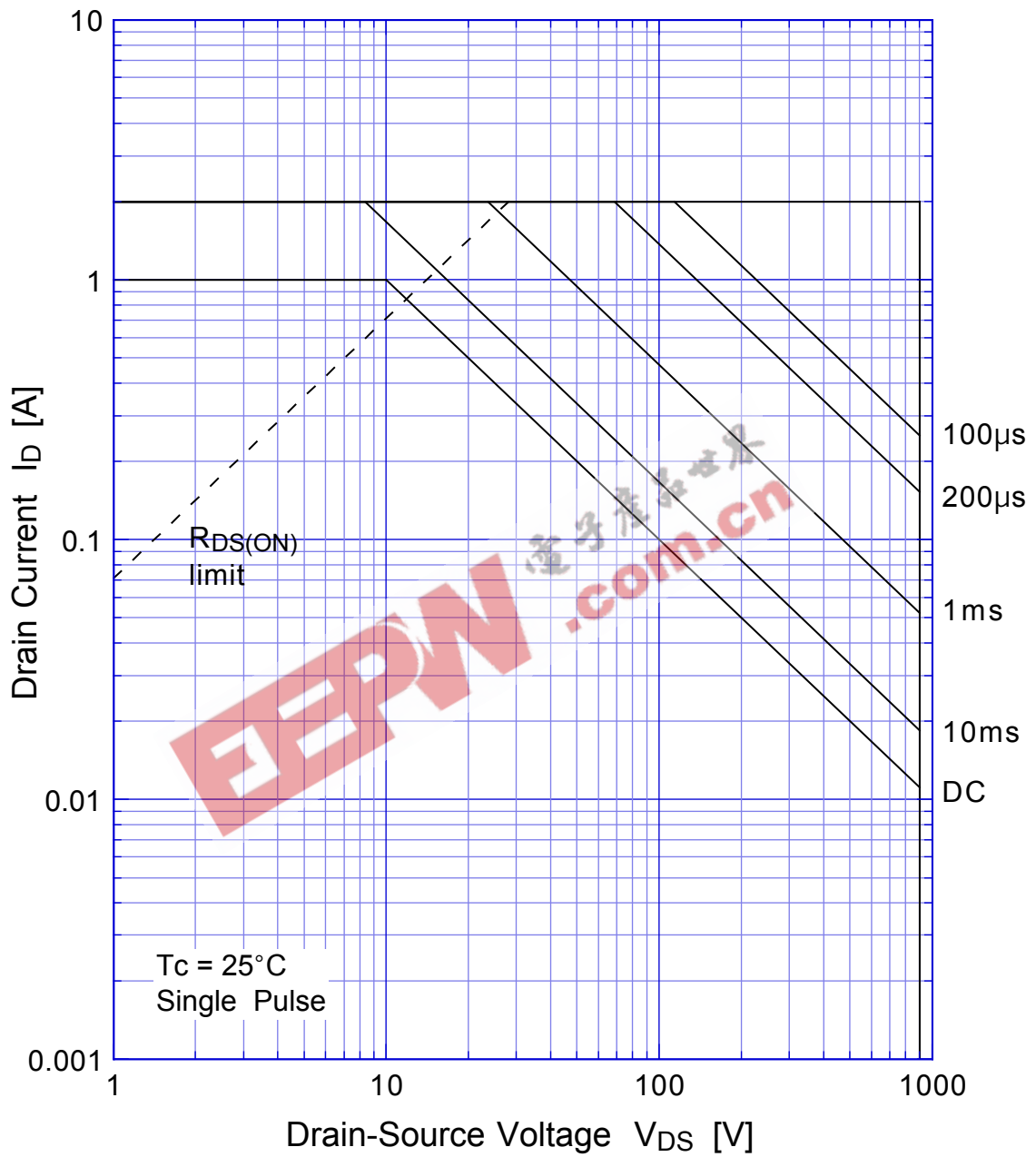
2SK2663 Static Drain-Source On-state Resistance



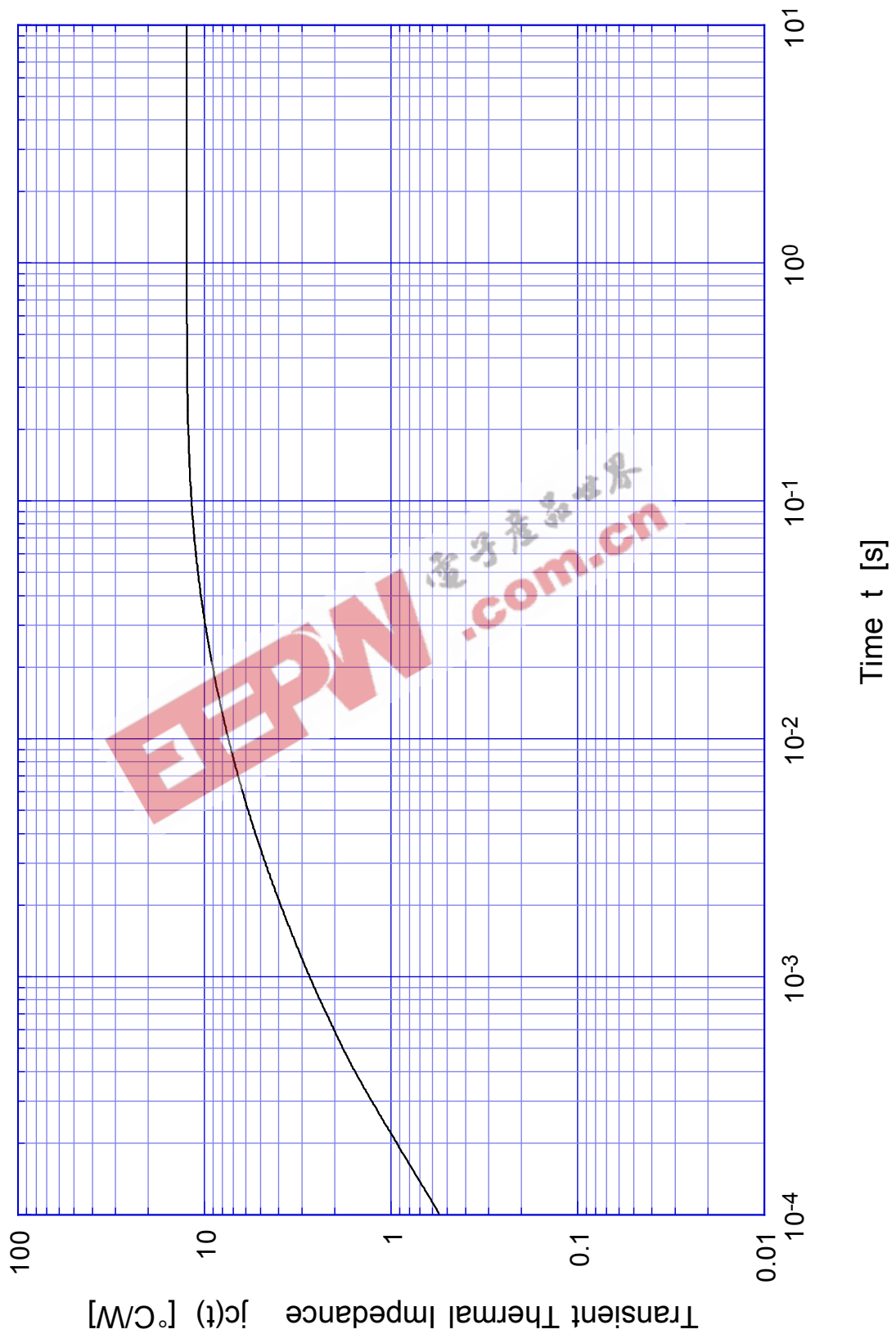
2SK2663 Gate Threshold Voltage



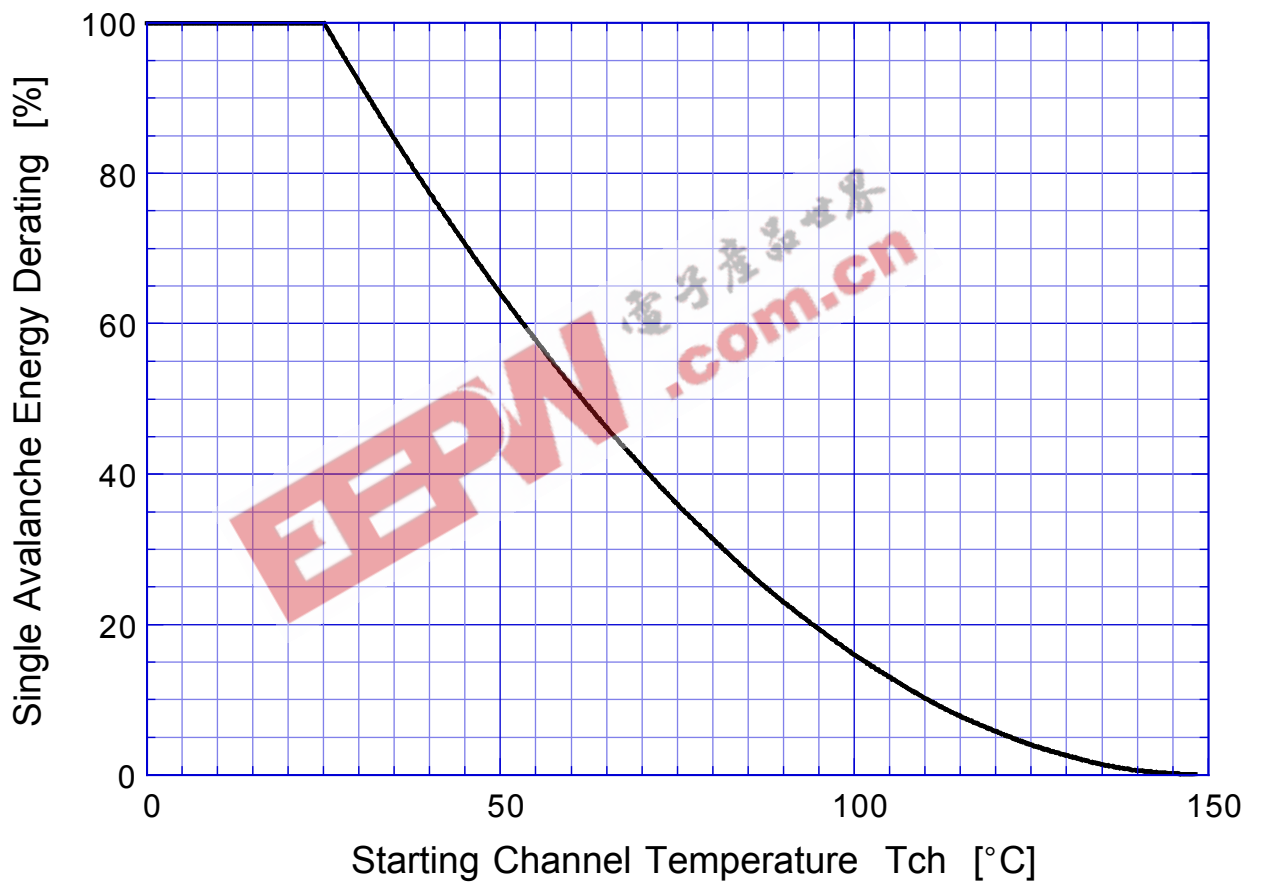
2SK2663 Safe Operating Area



2SK2663 Transient Thermal Impedance

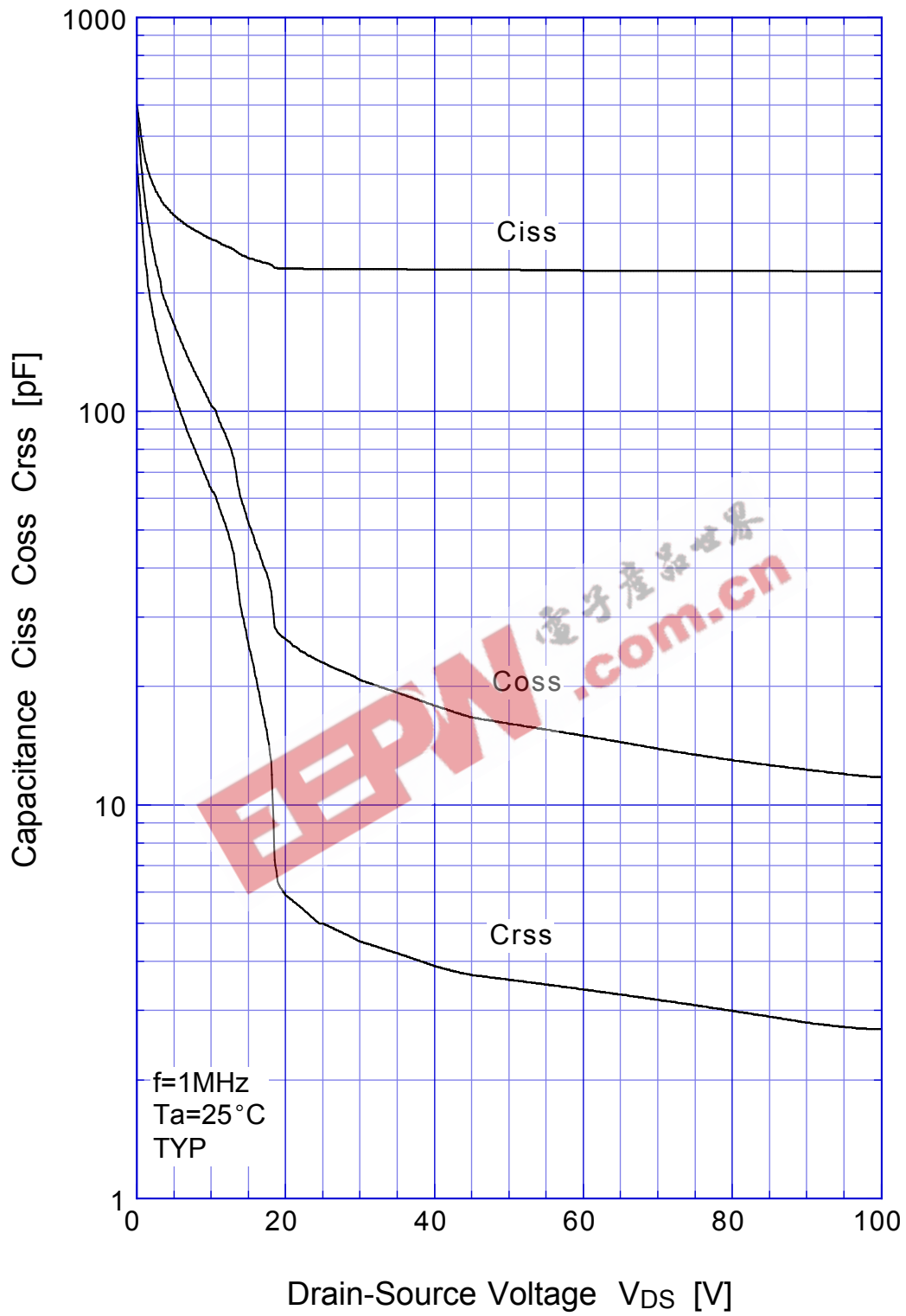


2SK2663 Single Avalanche Energy Derating

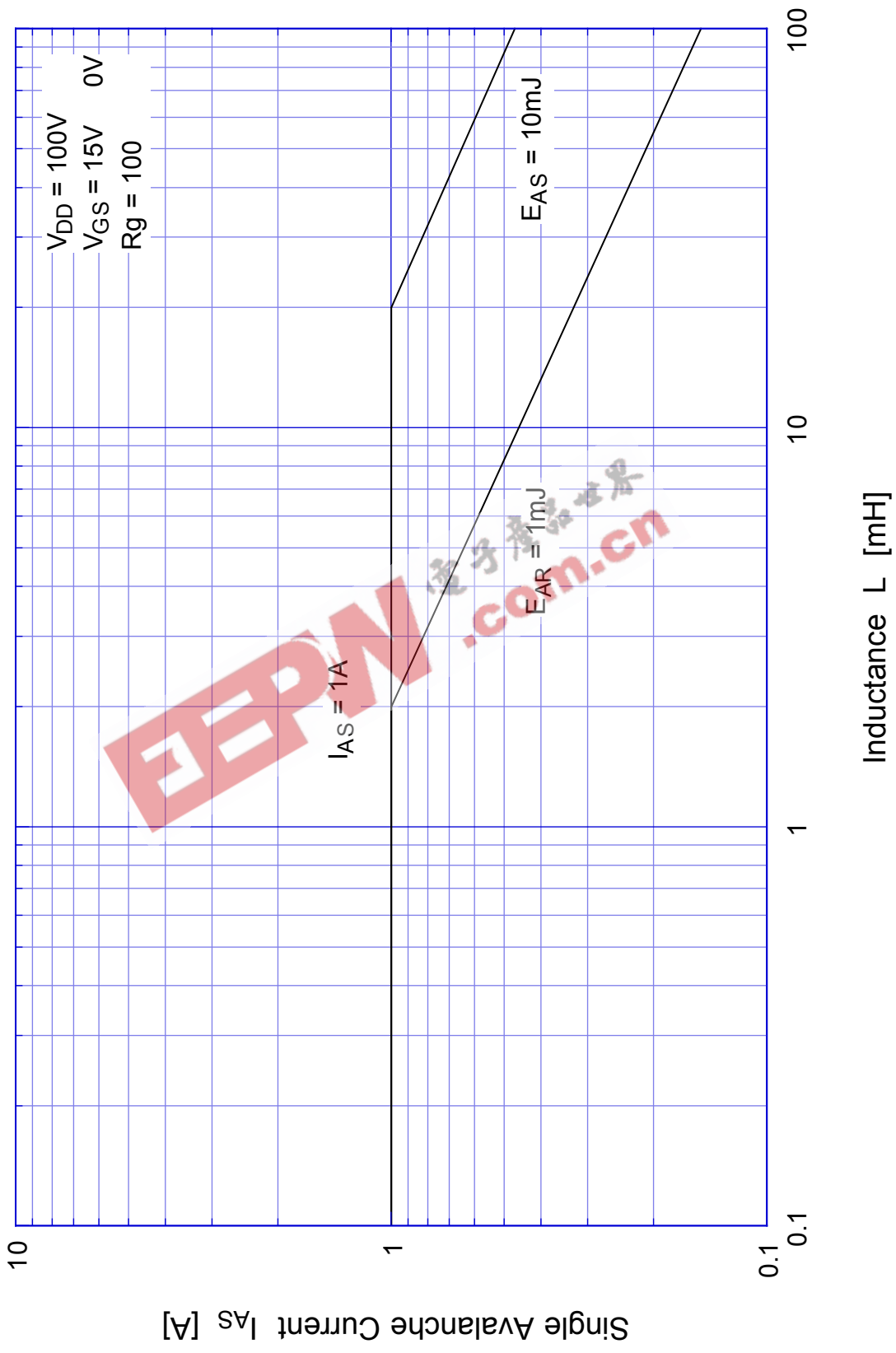


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Capacitance

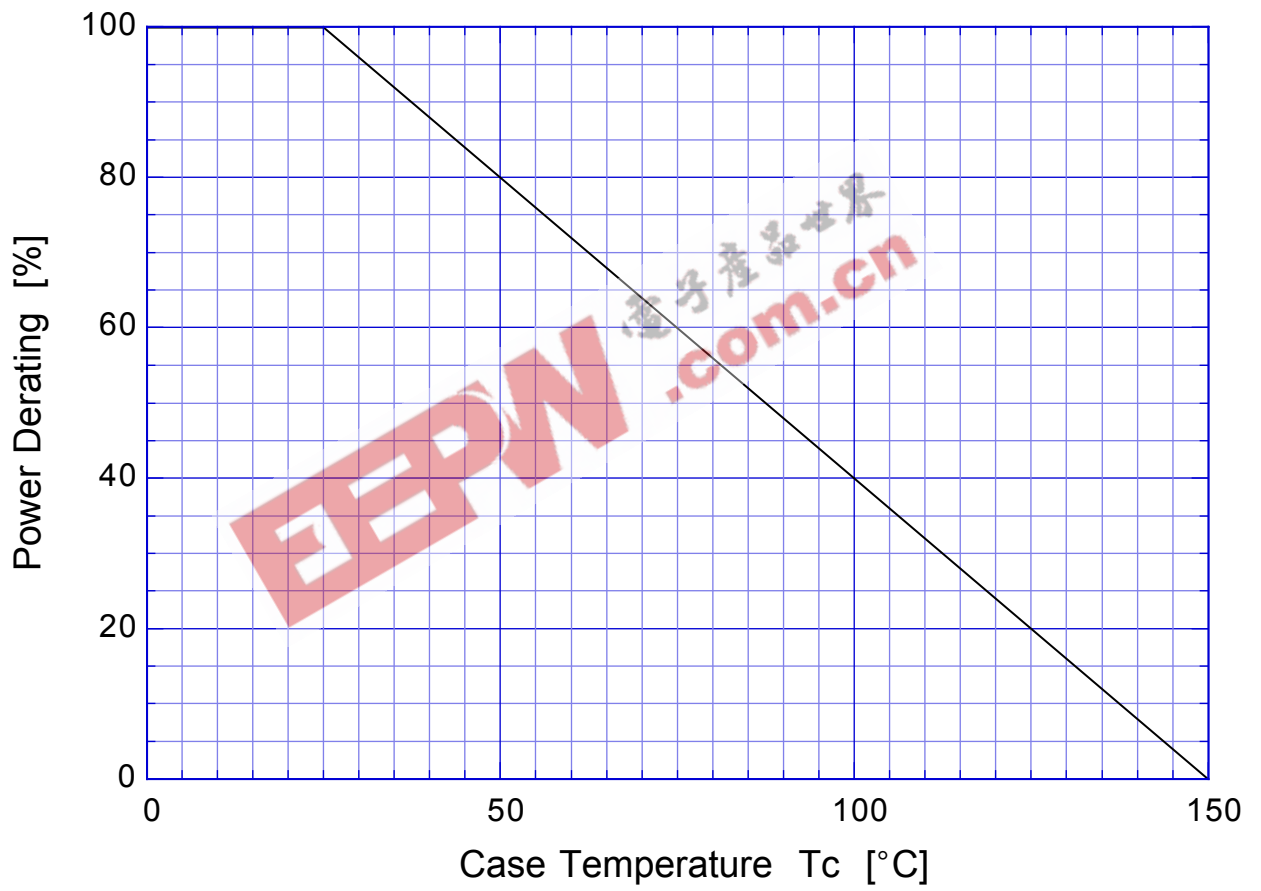


2SK2663 Single Avalanche Current - Inductive Load



2SK2663

Power Derating



2SK2663 Gate Charge Characteristics

