

2SK3009
(F8S60VX2)

600V 8A

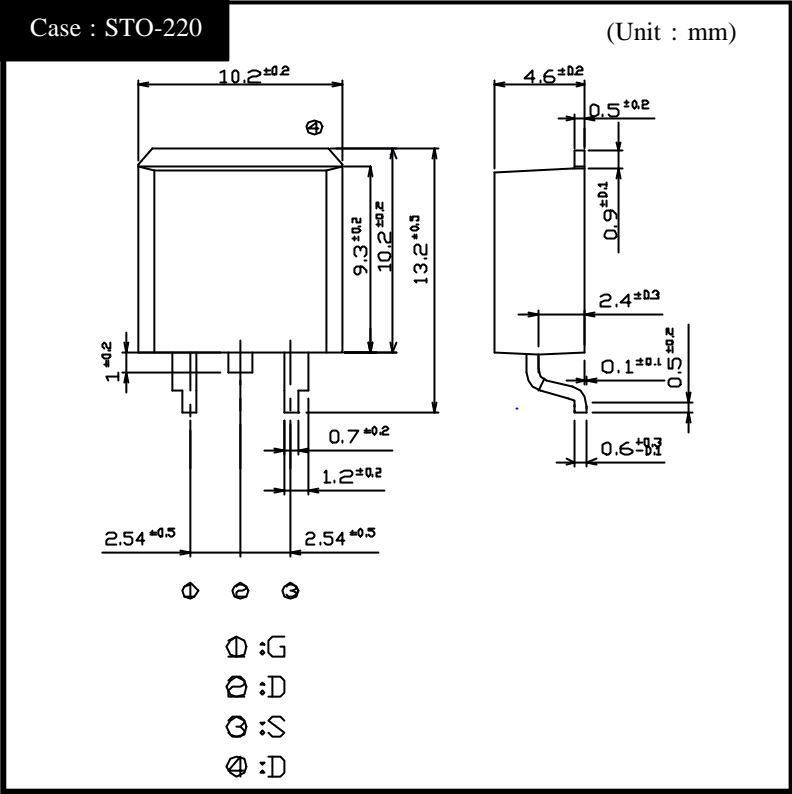
FEATURES

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 100-200V input
Inverter
Power Factor Control Circuit

OUTLINE DIMENSIONS



RATINGS

Absolute Maximum Ratings (Tc = 25)

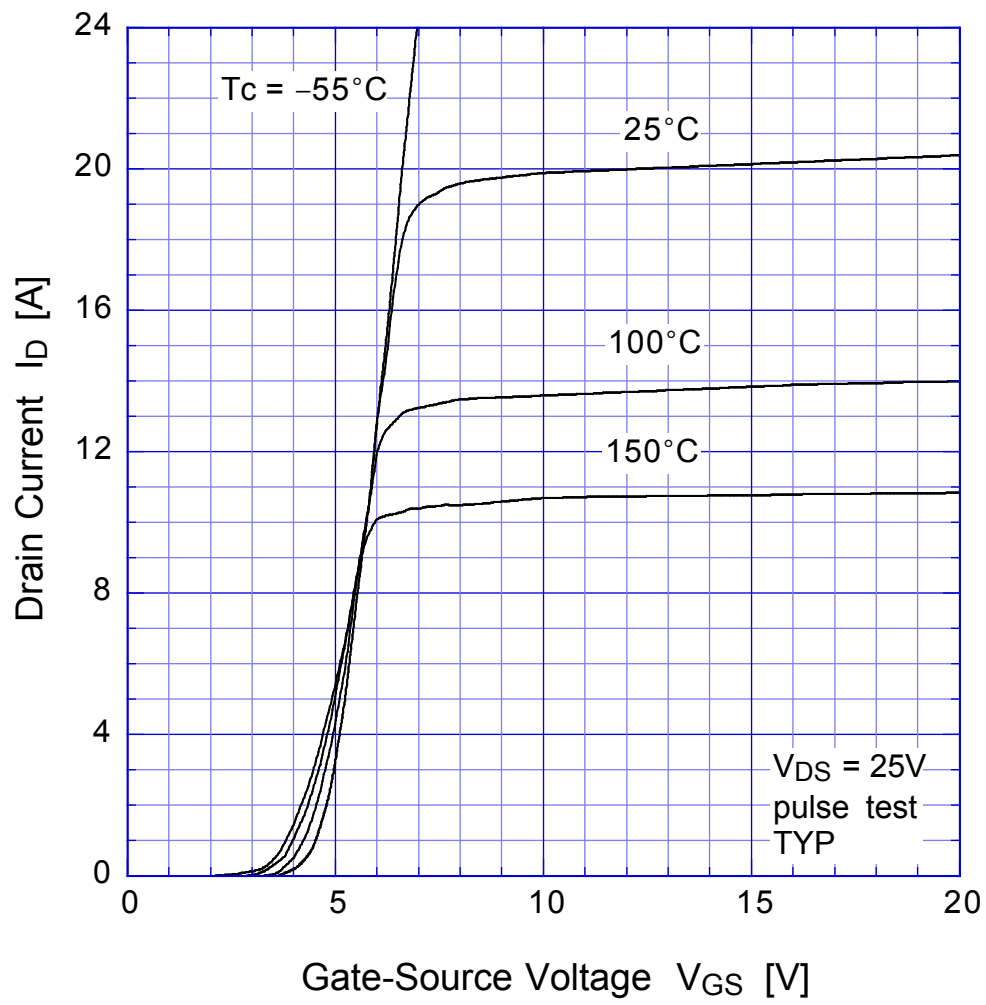
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	Tstg		-55 ~ 150	V
Channel Temperature	Tch		150	
Drain-Source Voltage	VDSS		600	
Gate-Source Voltage	VGSS		± 30	
Continuous Drain Current (DC)	ID		8	A
Continuous Drain Current (Peak)	IDP		16	
Continuous Source Current (DC)	IS		8	
Total Power Dissipation	PT		60	W
Single Pulse Avalanche Current	IAS	Tch = 25	8	A

●Electrical Characteristics T_c = 25°C

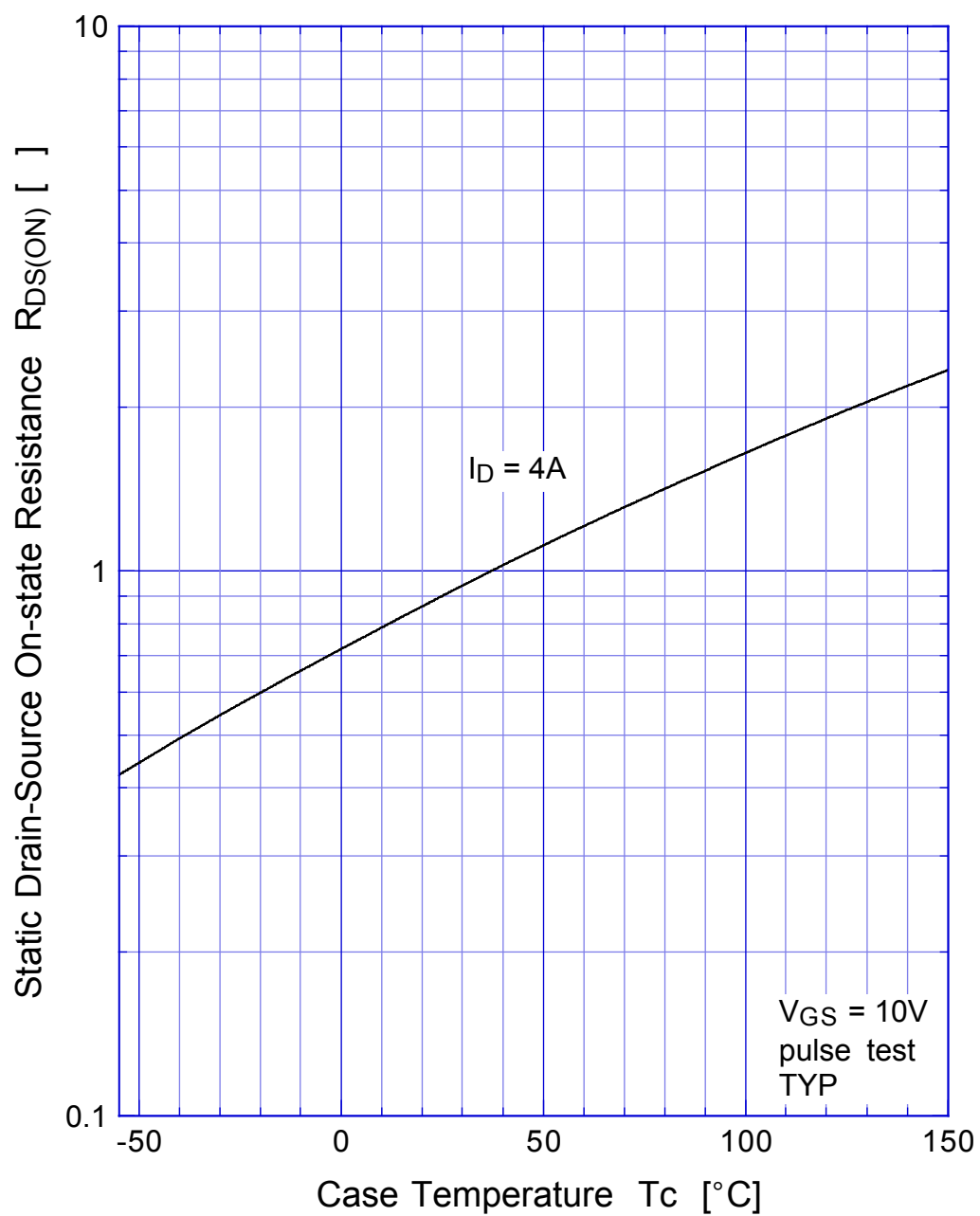
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	I _D = 1mA, V _{GS} = 0V	600			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 600V, V _{GS} = 0V			250	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±30V, V _{DS} = 0V			±0.1	
Forward Transconductance	g _{fs}	I _D = 4A, V _{DS} = 10V	2.4	5.5		S
Static Drain-Source On-state Resistance	R _{DS(ON)}	I _D = 4A, V _{GS} = 10V		0.9	1.2	Ω
Gate Threshold Voltage	V _{TH}	I _D = 1mA, V _{DS} = 10V	2.5	3	3.5	V
Source-Drain Diode Forward Voltage	V _{SD}	I _S = 4A, V _{GS} = 0V			1.5	
Thermal Resistance	θ _{jc}	junction to case			2.08	°C/W
Total Gate Charge	Q _g	V _{GS} = 10V, I _D = 8A, V _{DD} = 400V		42		nC
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		1130		pF
Reverse Transfer Capacitance	C _{rss}			85		
Output Capacitance	C _{oss}			245		
Turn-On Time	t _{on}	I _D = 4A, V _{GS} = 150V, R _L = 37.5Ω		55	80	ns
Turn-Off Time	t _{off}			195	290	

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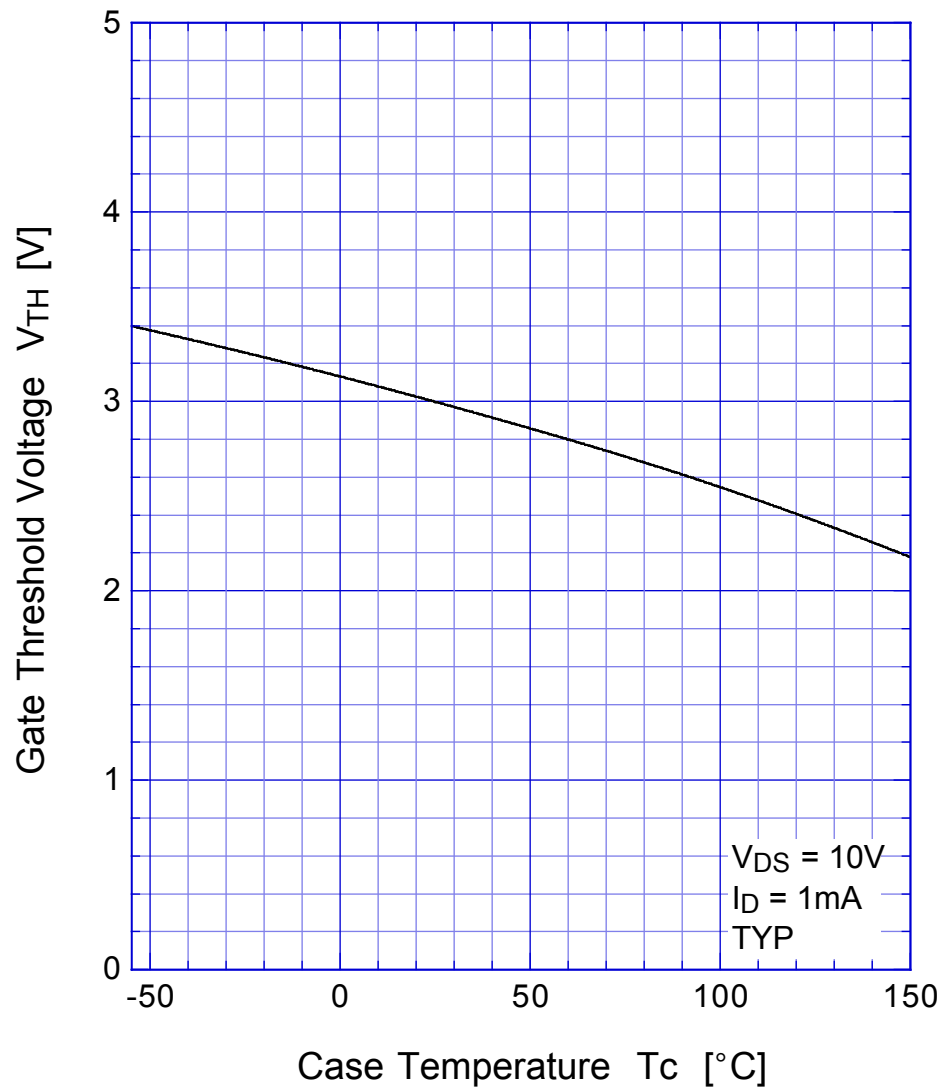
Transfer Characteristics



2SK3009 Static Drain-Source On-state Resistance

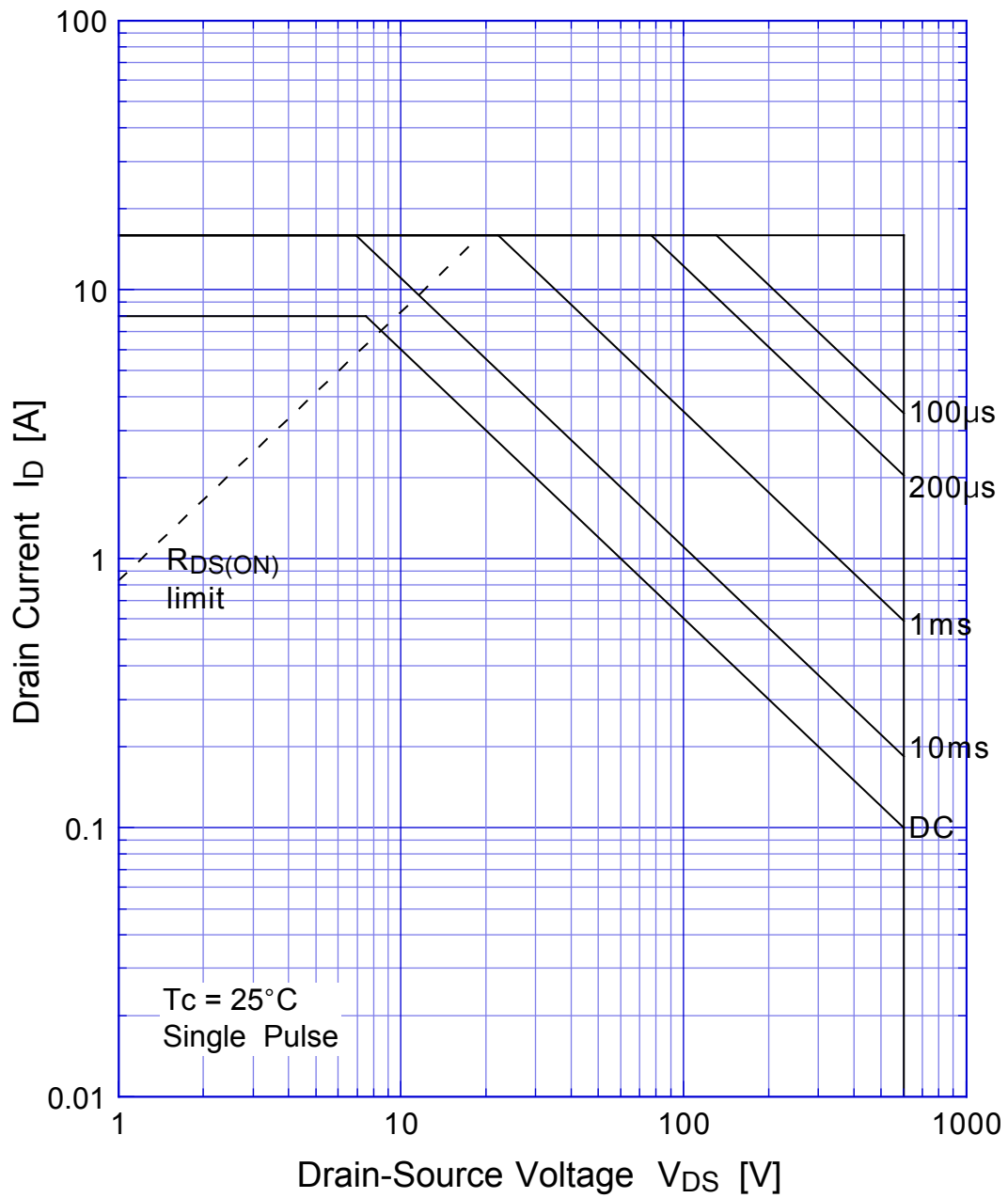


2SK3009 Gate Threshold Voltage

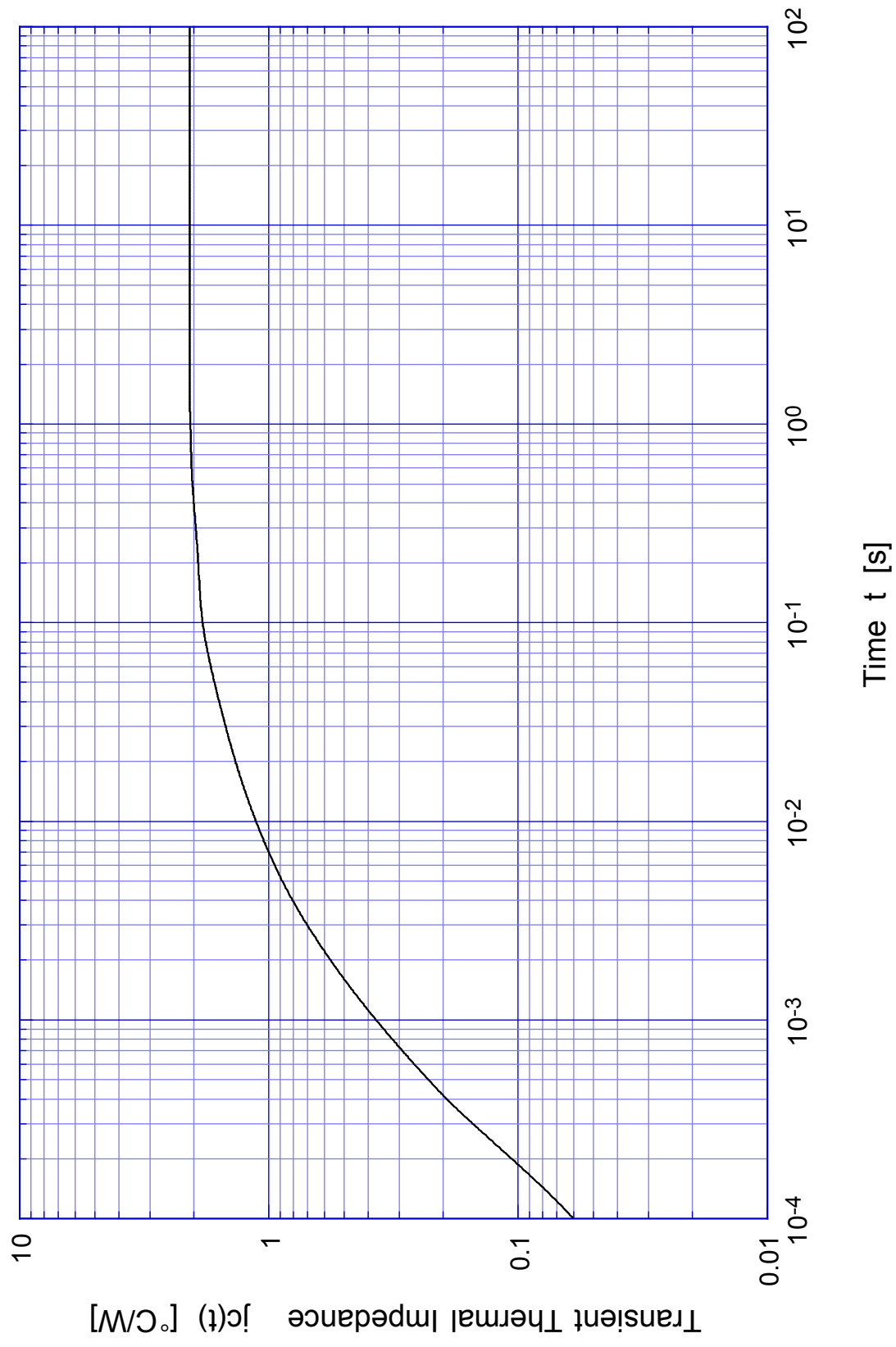


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Safe Operating Area

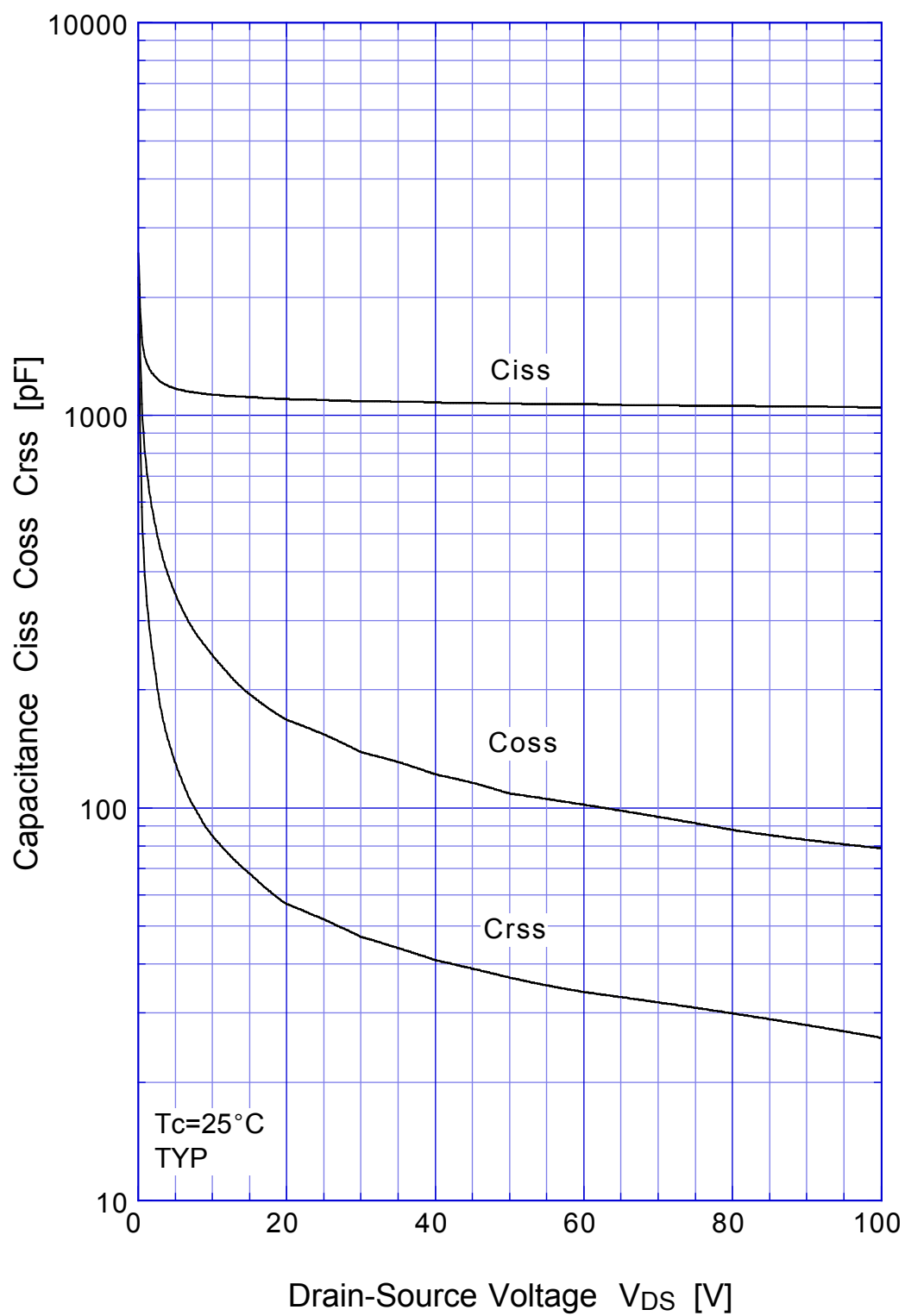


2SK3009 Transient Thermal Impedance



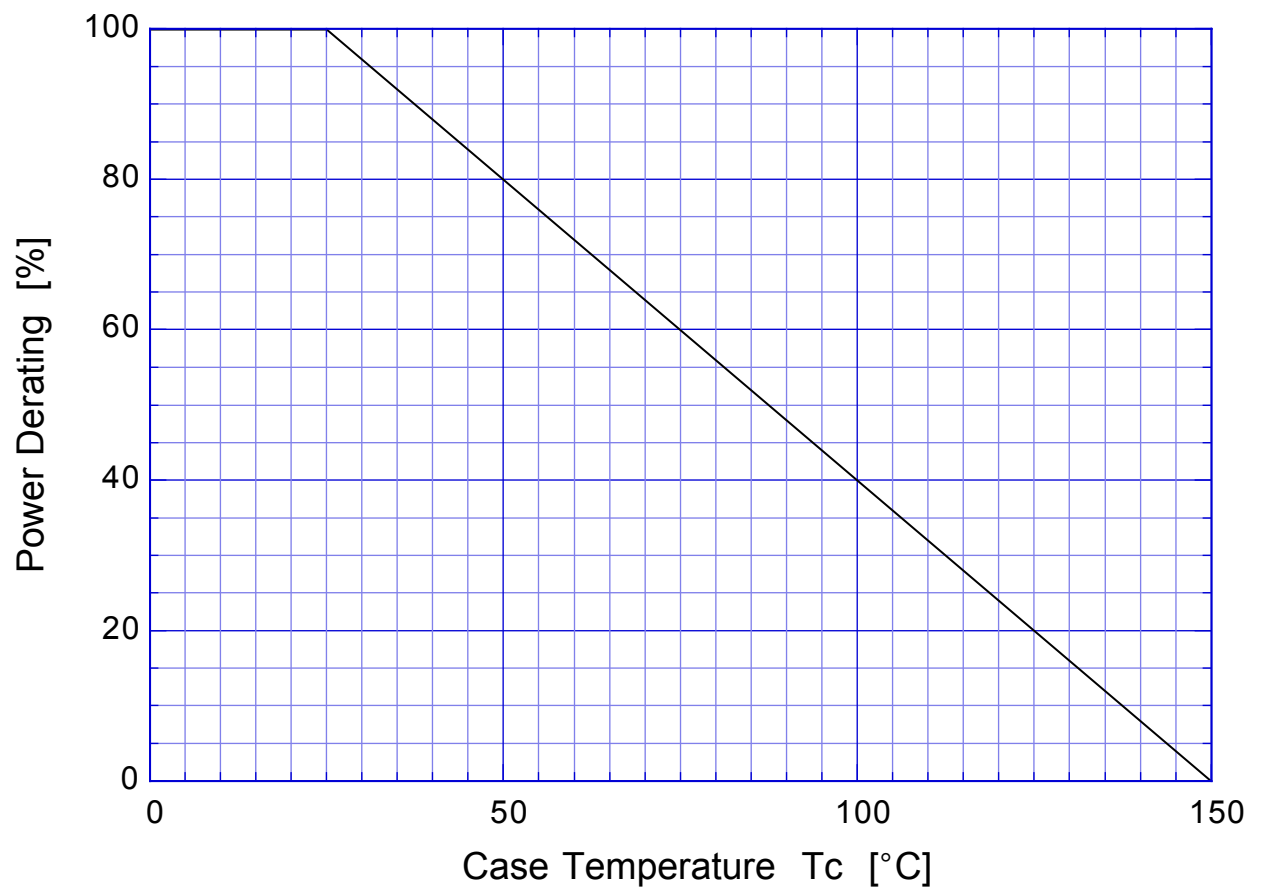
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Capacitance



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Power Derating



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Gate Charge Characteristics

