

SHINDENGEN

VX-2 Series Power MOSFET

N-Channel Enhancement type

2SK2182 (F3F50VX2)

500V 3A

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.

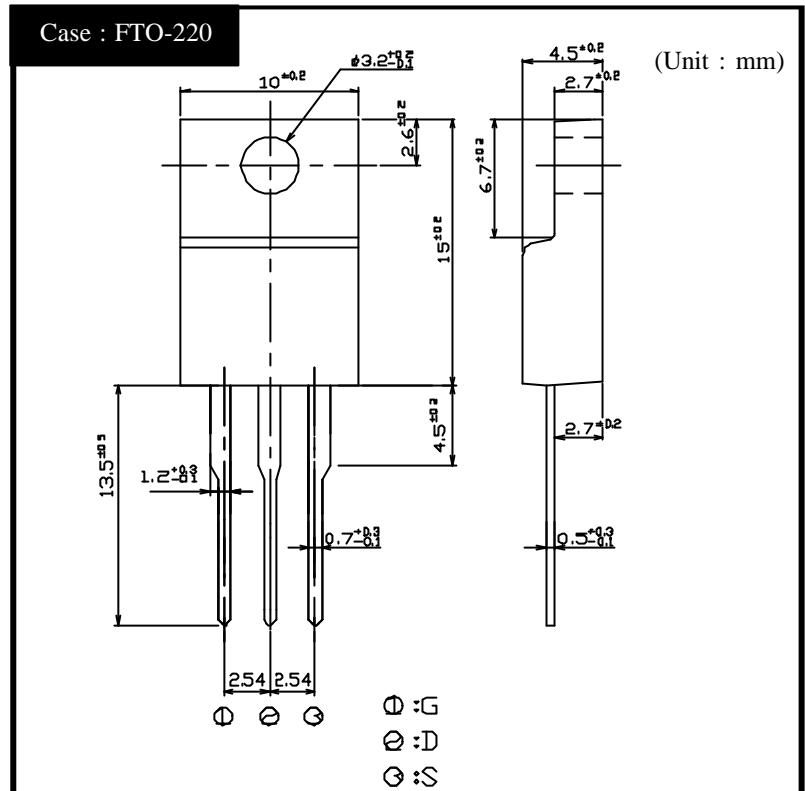
APPLICATION

Switching power supply of AC 100V input
High voltage power supply
Inverter

RATINGS

Absolute Maximum Ratings (Tc = 25 °C)

OUTLINE DIMENSIONS



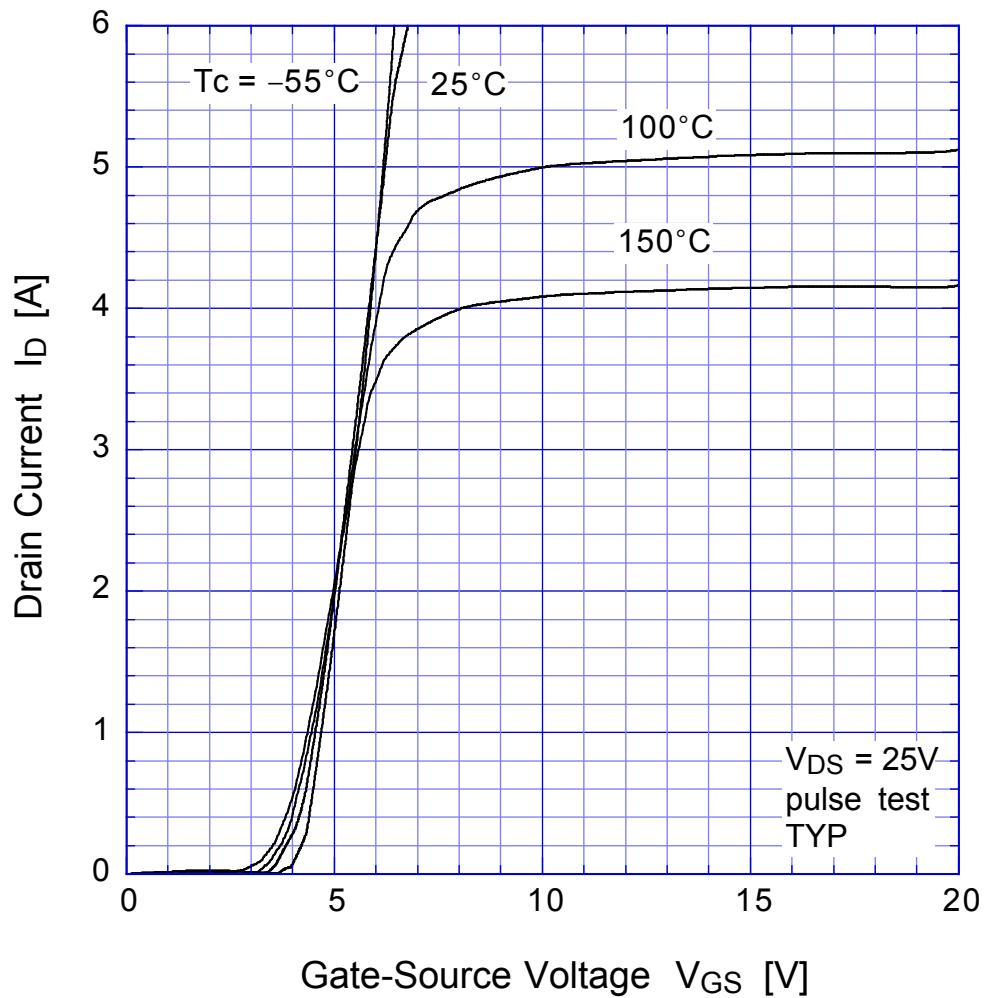
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T _{stg}		-55 ~ 150	
Channel Temperature	T _{ch}		150	
Drain-Source Voltage	V _{DSS}		500	V
Gate-Source Voltage	V _{GSS}		± 30	
Continuous Drain Current (DC)	I _D		3	A
Continuous Drain Current (Peak)	I _{DP}		9	
Continuous Source Current (DC)	I _S		3	
Total Power Dissipation	P _T		25	W
Single Pulse Avalanche Current	I _{AS}	T _{ch} = 25	3	A
Dielectric Strength	V _{dis}	Terminals to case, AC 1 minute	2	kV
Mounting Torque	T _{OR}	(Recommended torque : 0.3 N·m)	0.5	N·m

●Electrical Characteristics T_c = 25°C

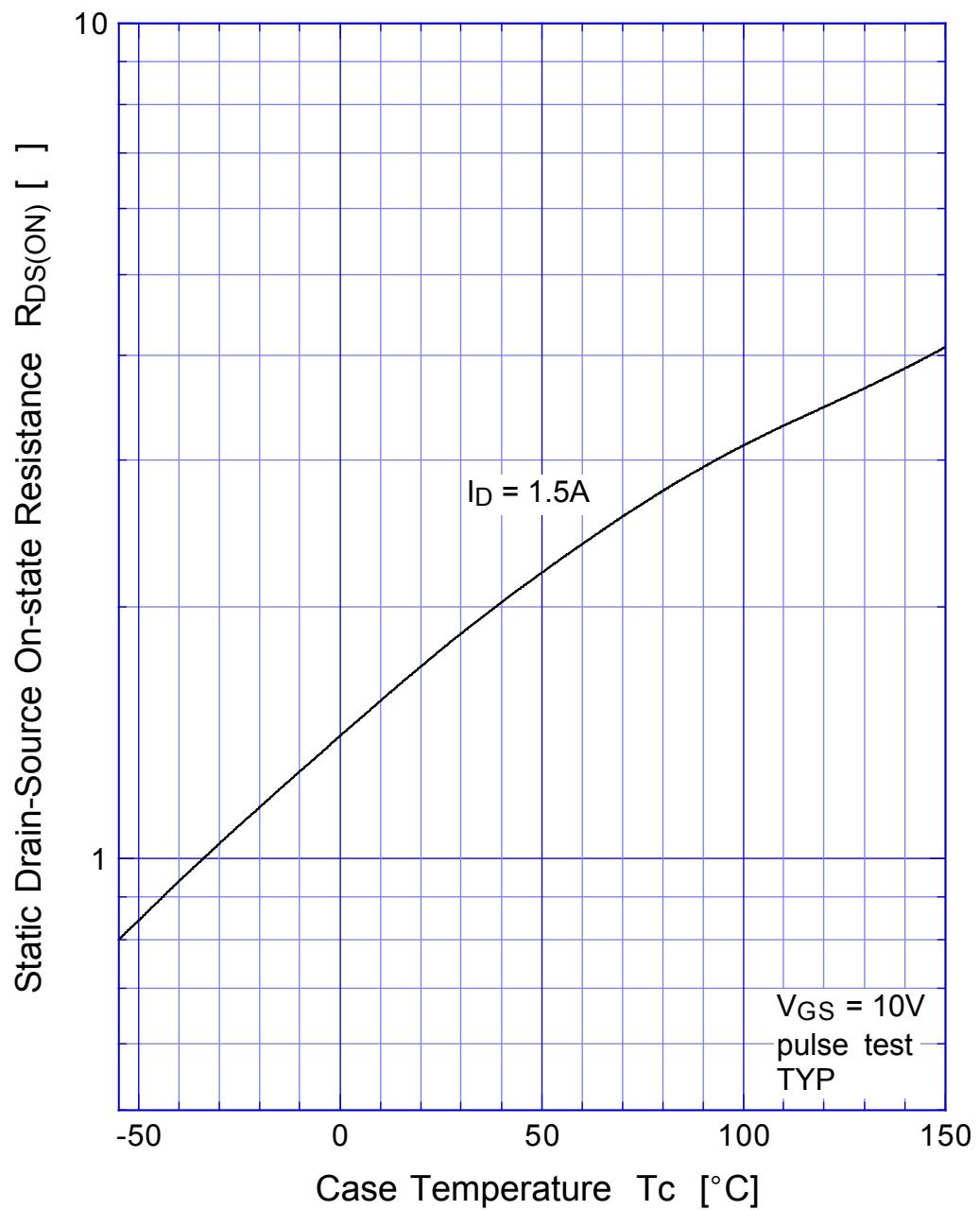
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	ID = 1mA, VGS = 0V	500			V
Zero Gate Voltage Drain Current	I _{DSS}	VDS = 500V, VGS = 0V			250	μA
Gate-Source Leakage Current	I _{GSS}	VGS = ±30V, VDS = 0V			±0.1	
Forward Transconductance	g _{fS}	ID = 1.5A, VDS = 10V	0.9	2.1		S
Static Drain-Source On-state Resistance	R _{D(S)ON}	ID = 1.5A, VGS = 10V		1.8	2.3	Ω
Gate Threshold Voltage	V _{TH}	ID = 0.3mA, VDS = 10V	2.5	3.0	3.5	V
Source-Drain Diode Forwade Voltage	V _{SD}	IS = 1.5A, VGS = 0V			1.5	
Thermal Resistance	θ _{jc}	junction to case			5.0	°C/W
Total Gate Charge	Q _g	VDD = 400V, VGS = 10V, ID = 3A		15		nC
Input Capacitance	C _{iss}	VDS = 10V, VGS = 0V, f = 1MHz		400		pF
Reverse Transfer Capacitance	C _{rss}			30		
Output Capacitance	C _{oss}			90		
Turn-On Time	t _{on}	ID = 1.5A, VGS = 10V, RL = 100 Ω		45	80	ns
Turn-Off Time	t _{off}			90	140	

2SK2182

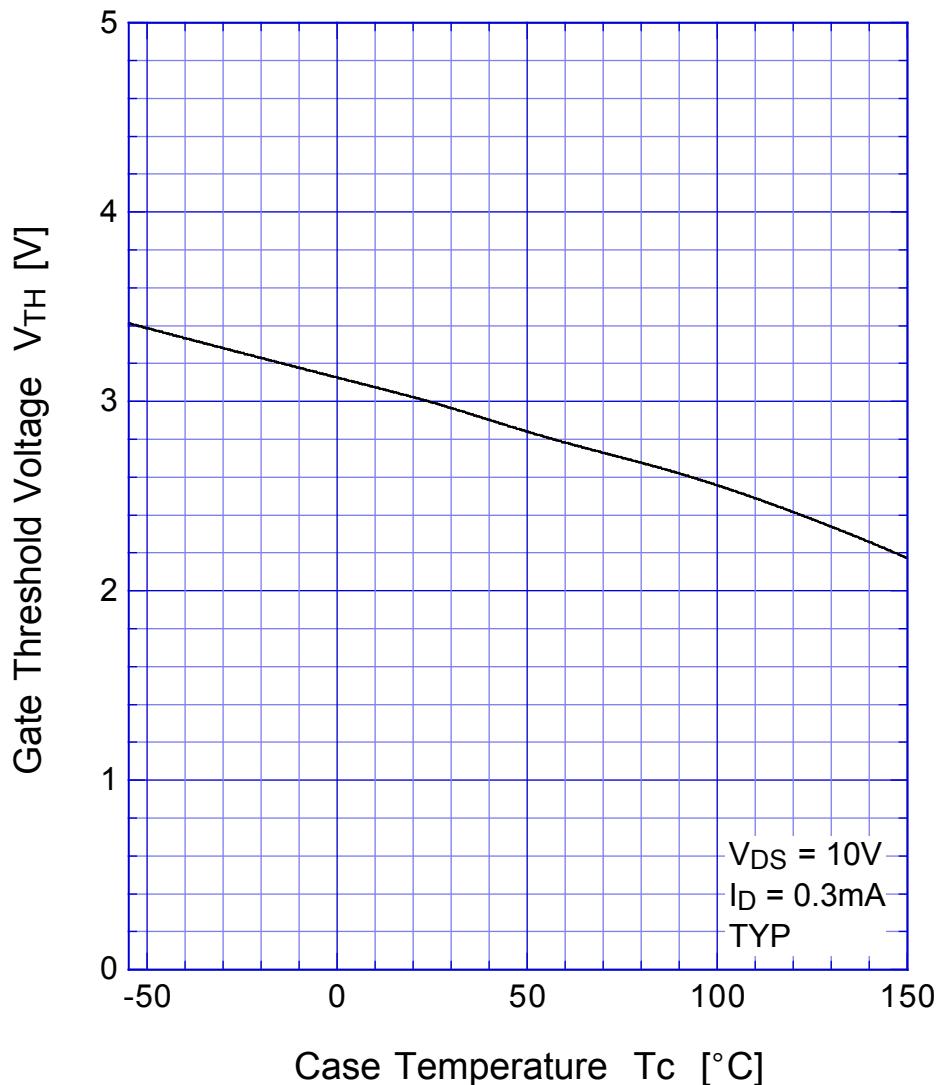
Transfer Characteristics



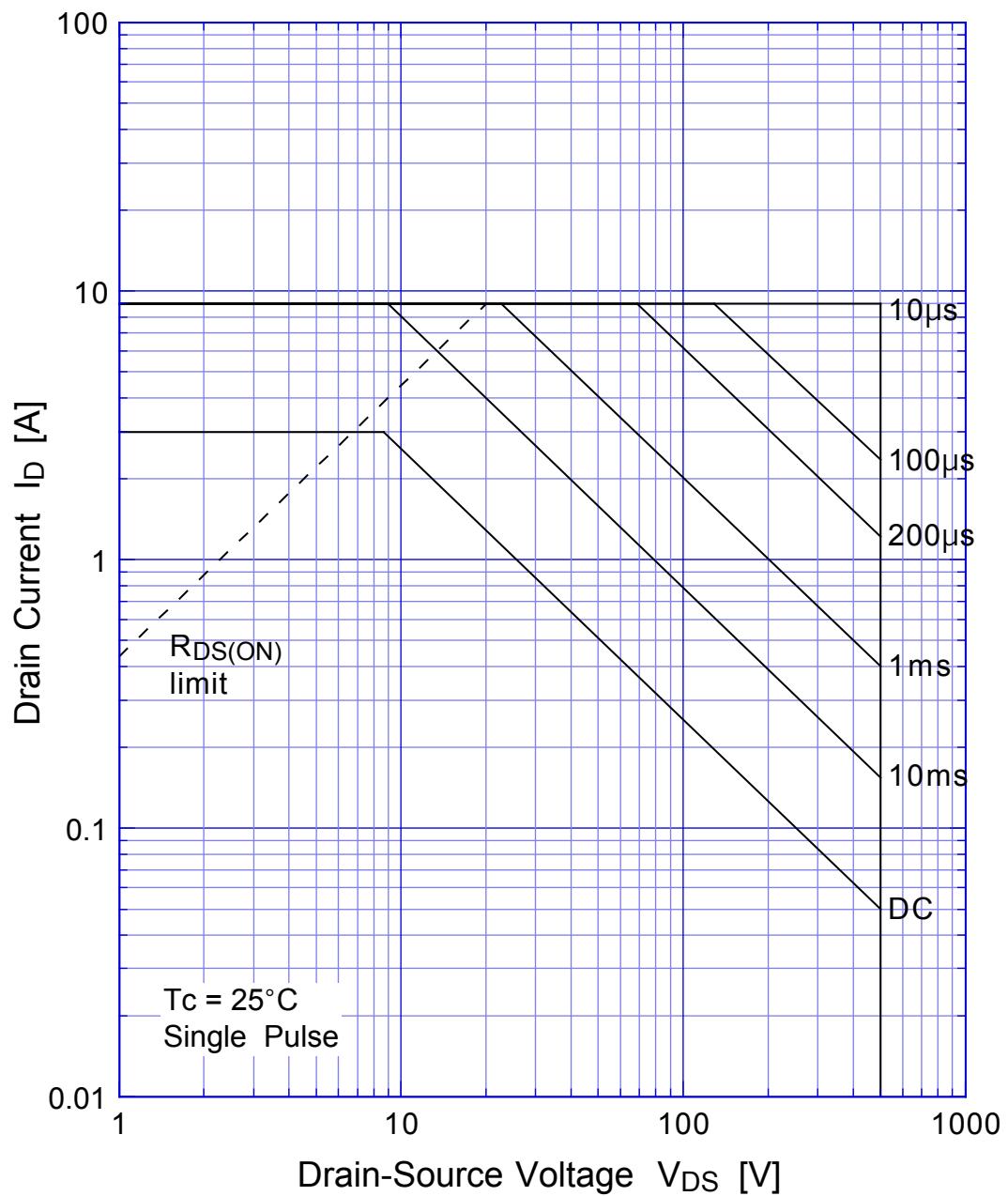
2SK2182 Static Drain-Source On-state Resistance



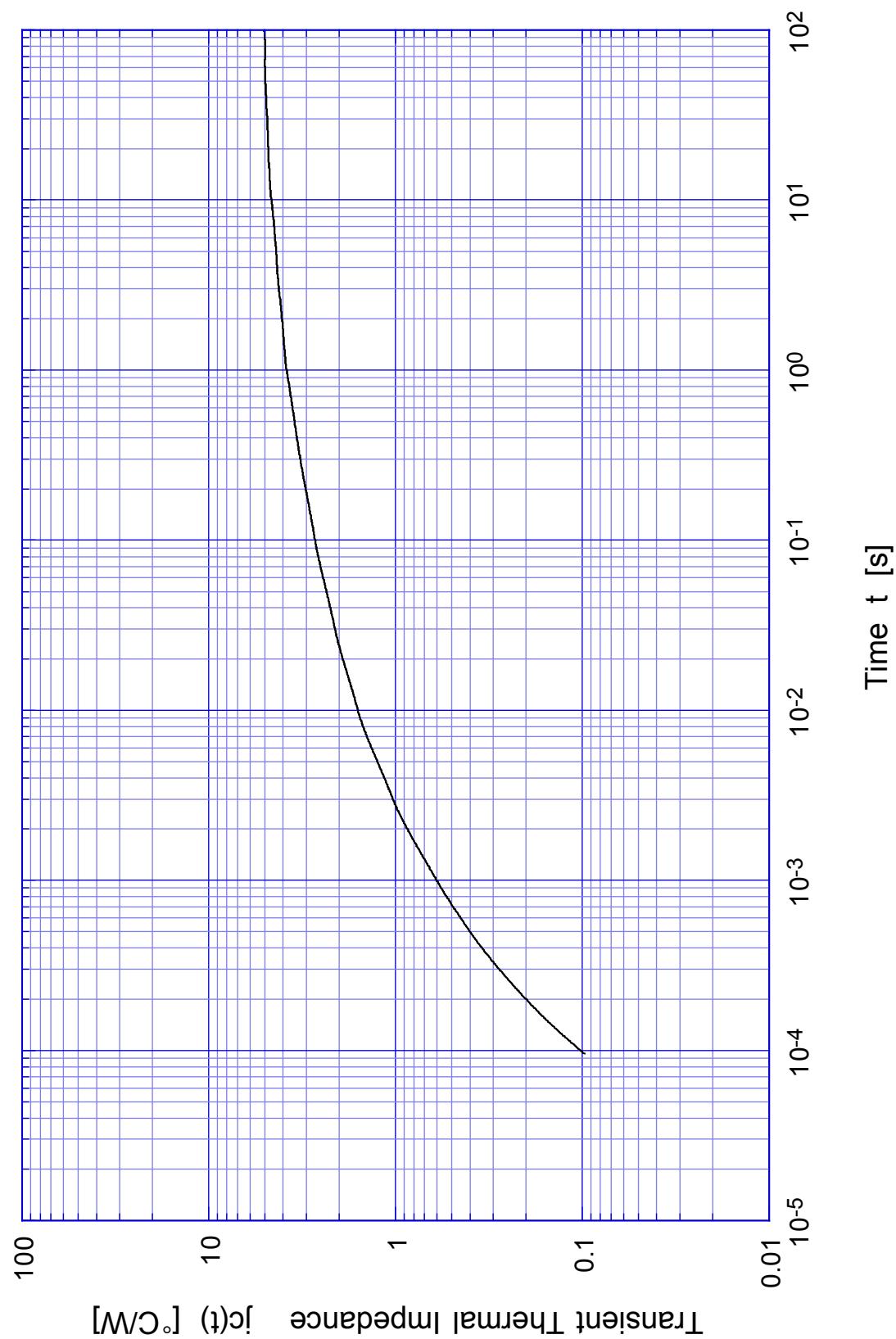
2SK2182 Gate Threshold Voltage



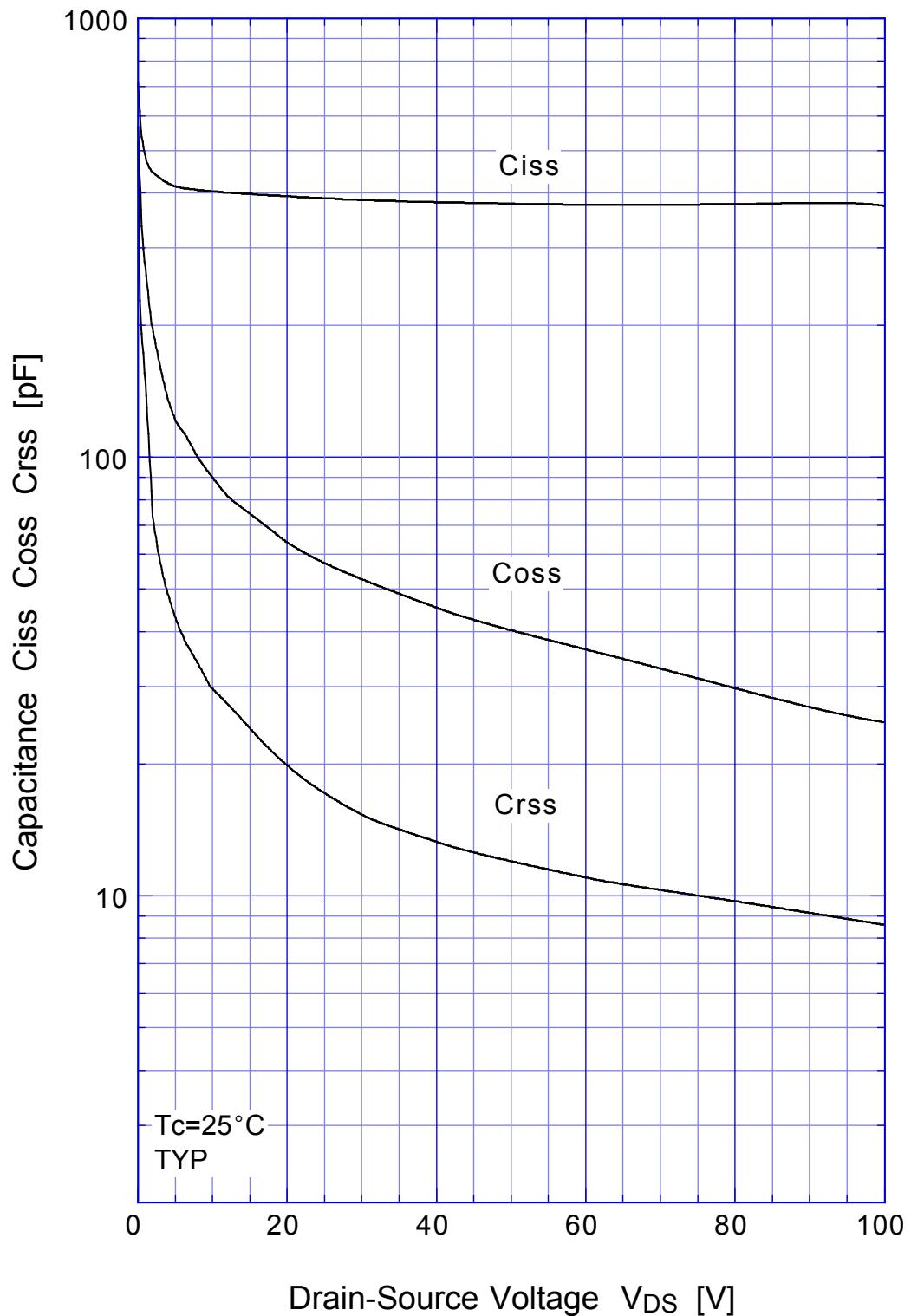
2SK2182 Safe Operating Area



2SK2182 Transient Thermal Impedance

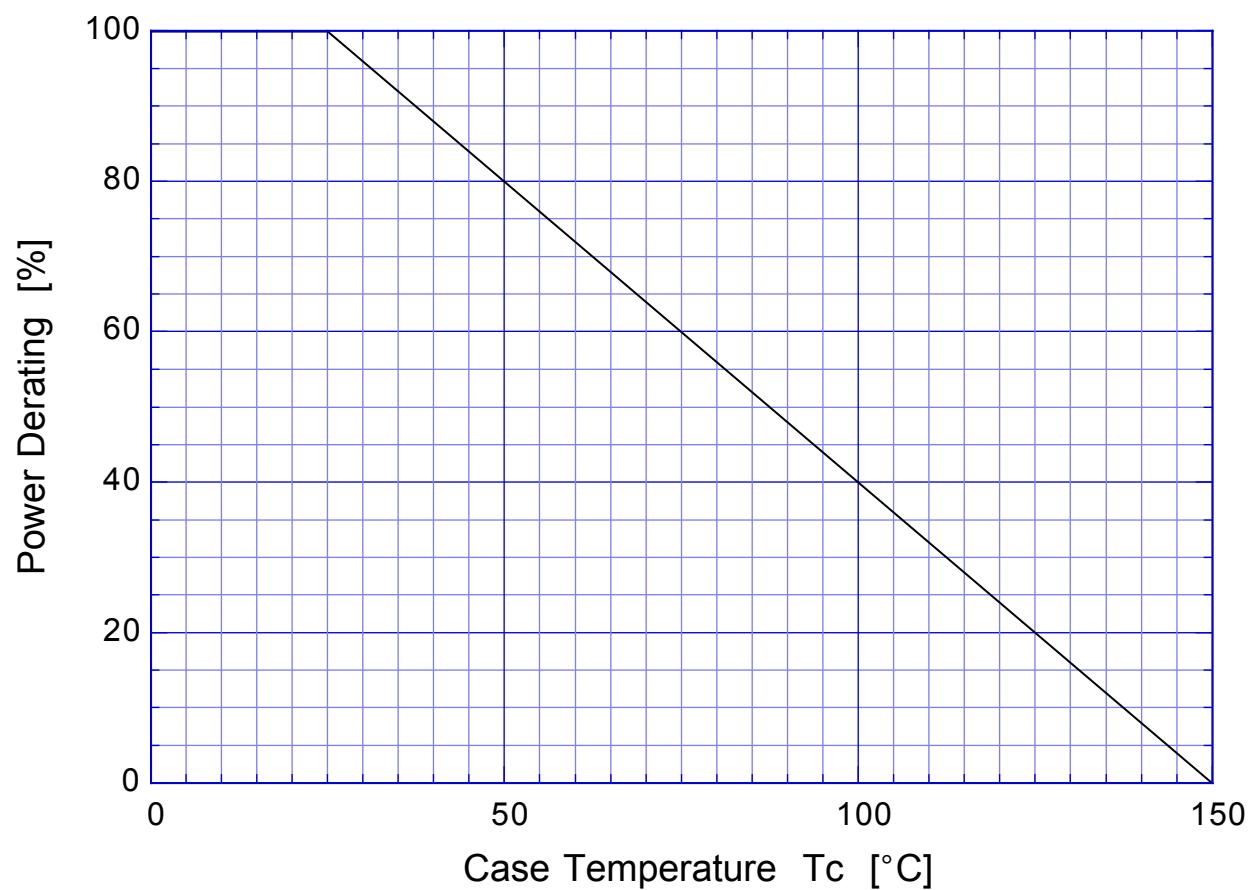


2SK2182 Capacitance



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Power Derating



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Gate Charge Characteristics

