

SHINDENGEN

VR Series Power MOSFET

N-Channel Enhancement type

**2SK1194
(F05E23)**

230V 0.5A

FEATURES

Applicable to 4V drive.
The static Rds(on) is small.
Built-in ZD for Gate Protection.

APPLICATION

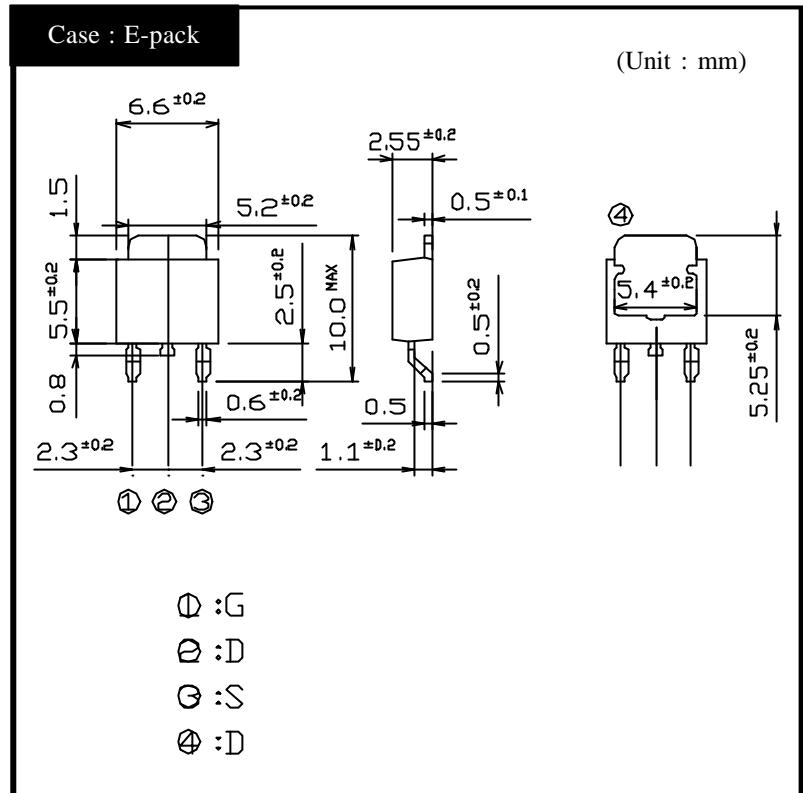
DC/DC converters
Power supplies of DC 12-24V input
Product related to
Integrated Service Digital Network

RATINGS

Absolute Maximum Ratings (Tc = 25 °C)

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T _{stg}		-55 ~ 150	
Channel Temperature	T _{ch}		150	
Drain-Source Voltage	V _{DSS}		230	V
Gate-Source Voltage	V _{GSS}		± 20	
Continuous Drain Current (DC)	I _D		0.5	
Continuous Drain Current (Peak)	I _{DP}		1	A
Continuous Source Current (DC)	I _S		0.5	
Total Power Dissipation	P _T		6	W

OUTLINE DIMENSIONS



① : G

② : D

③ : S

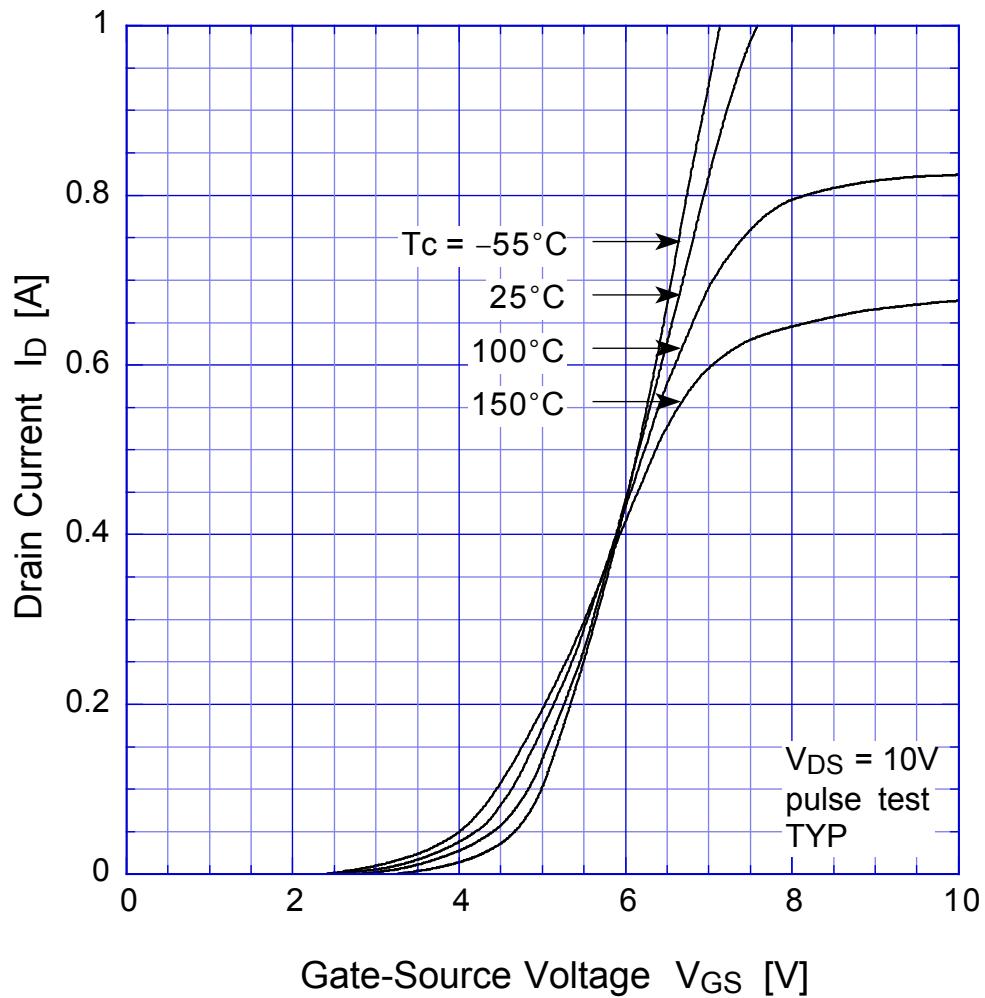
④ : D

●Electrical Characteristics T_c = 25°C

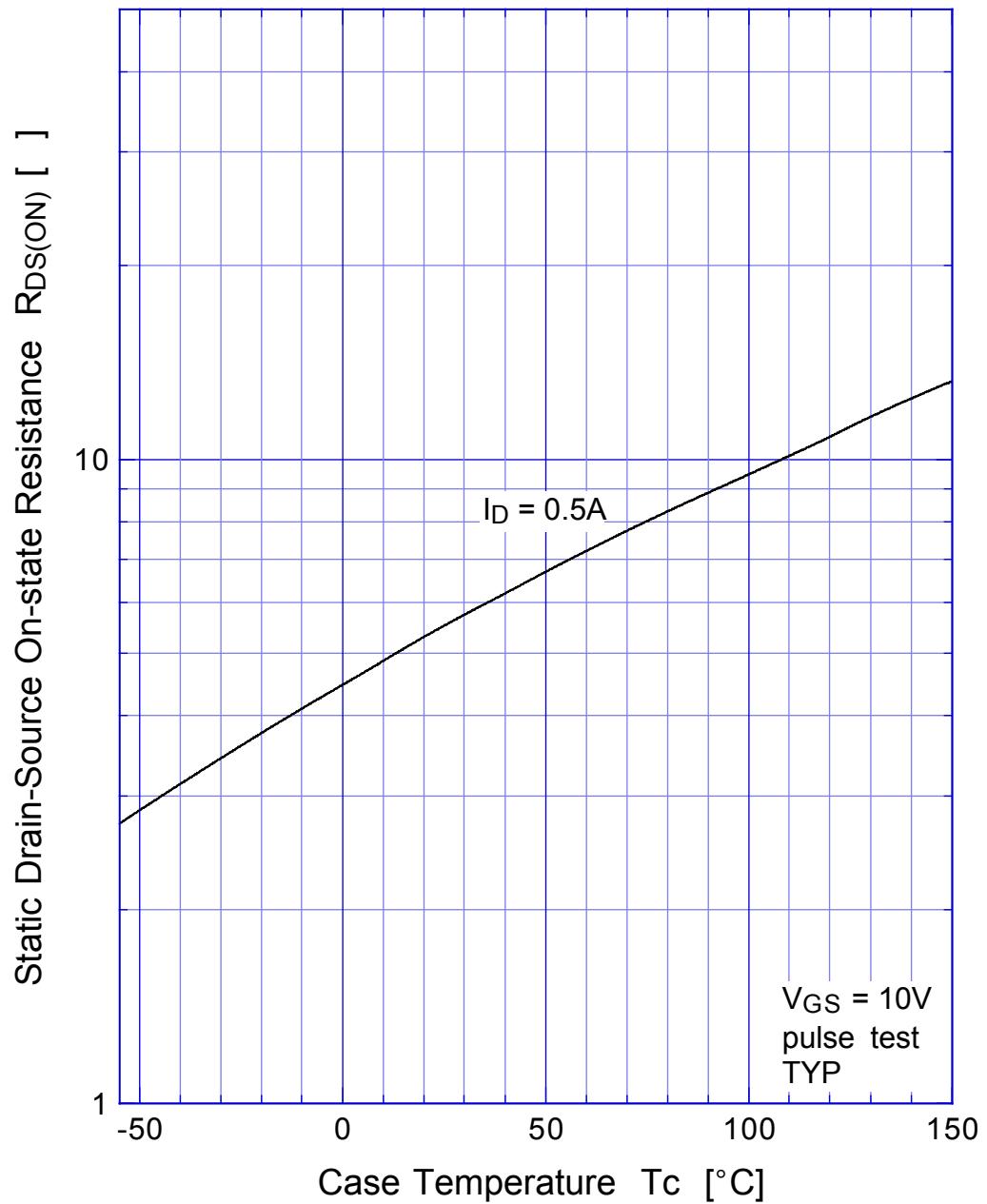
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	ID = 250 μ A, VGS = 0V	230			V
Zero Gate Voltage Drain Current	I _{DSS}	VDS = 230V, VGS = 0V			250	μ A
Gate-Source Leakage Current	I _{GSS}	VGS = ±20V, VDS = 0V			±0.1	
Forward Transconductance	g _{fS}	ID = 0.5A, VDS = 10V	0.2	0.4		S
Static Drain-Source On-state Resistance	R _{D(S)ON}	ID = 0.5A, VGS = 10V		5.5	8	Ω
Gate Threshold Voltage	V _{TH}	ID = 0.2mA, VDS = 10V	2	3	4	V
Source-Drain Diode Forward Voltage	V _{SD}	IS = 0.5A, VGS = 0V			1.5	
Thermal Resistance	θ _{jc}	junction to case			20.8	°C/W
Total Gate Charge	Q _g	VGS = 10V, ID = 0.5A, VDD = 200V		2.7		nC
Input Capacitance	C _{iss}	VDS = 10V, VGS = 0V, f = 1MHz		45		pF
Reverse Transfer Capacitance	C _{rss}			4.5		
Output Capacitance	C _{oss}			30		
Turn-On Time	t _{on}	ID = 0.5A, VGS = 10V, RL = 200Ω		30	60	ns
Turn-Off Time	t _{off}			50	100	

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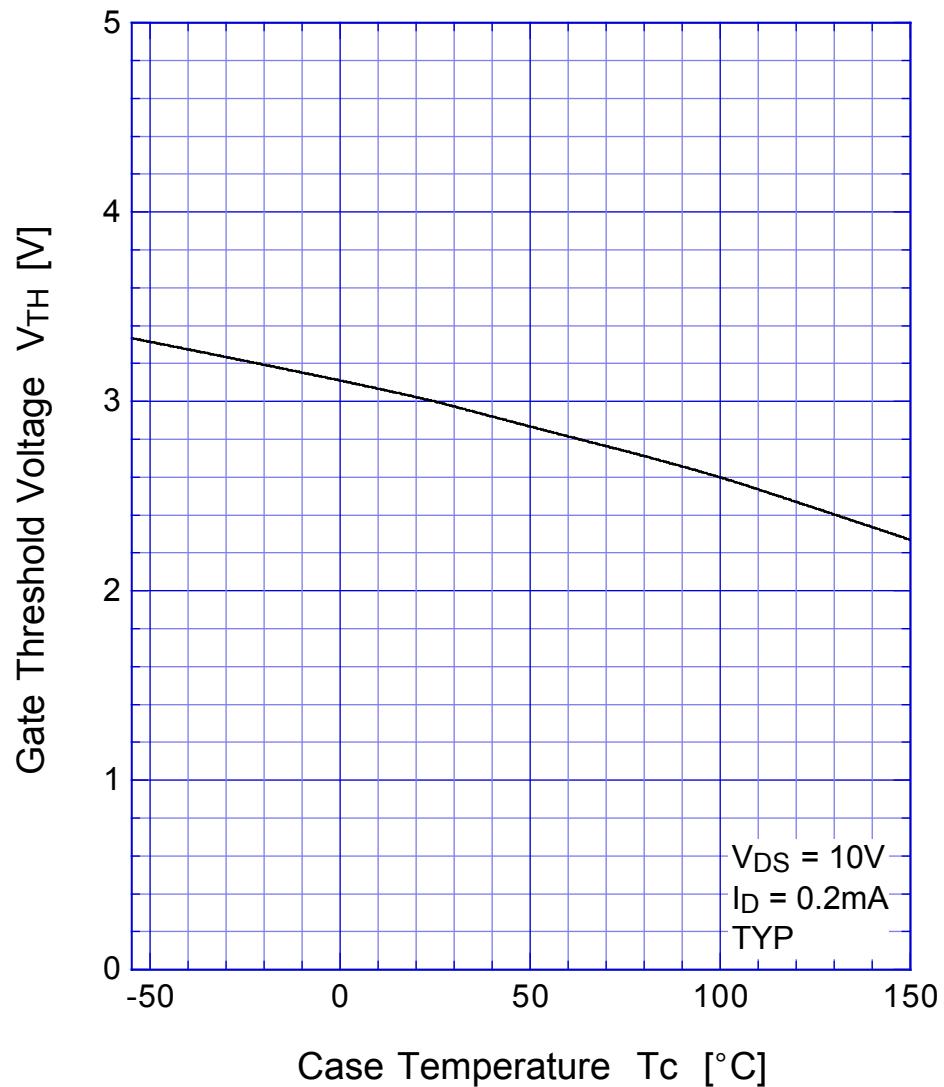
Transfer Characteristics



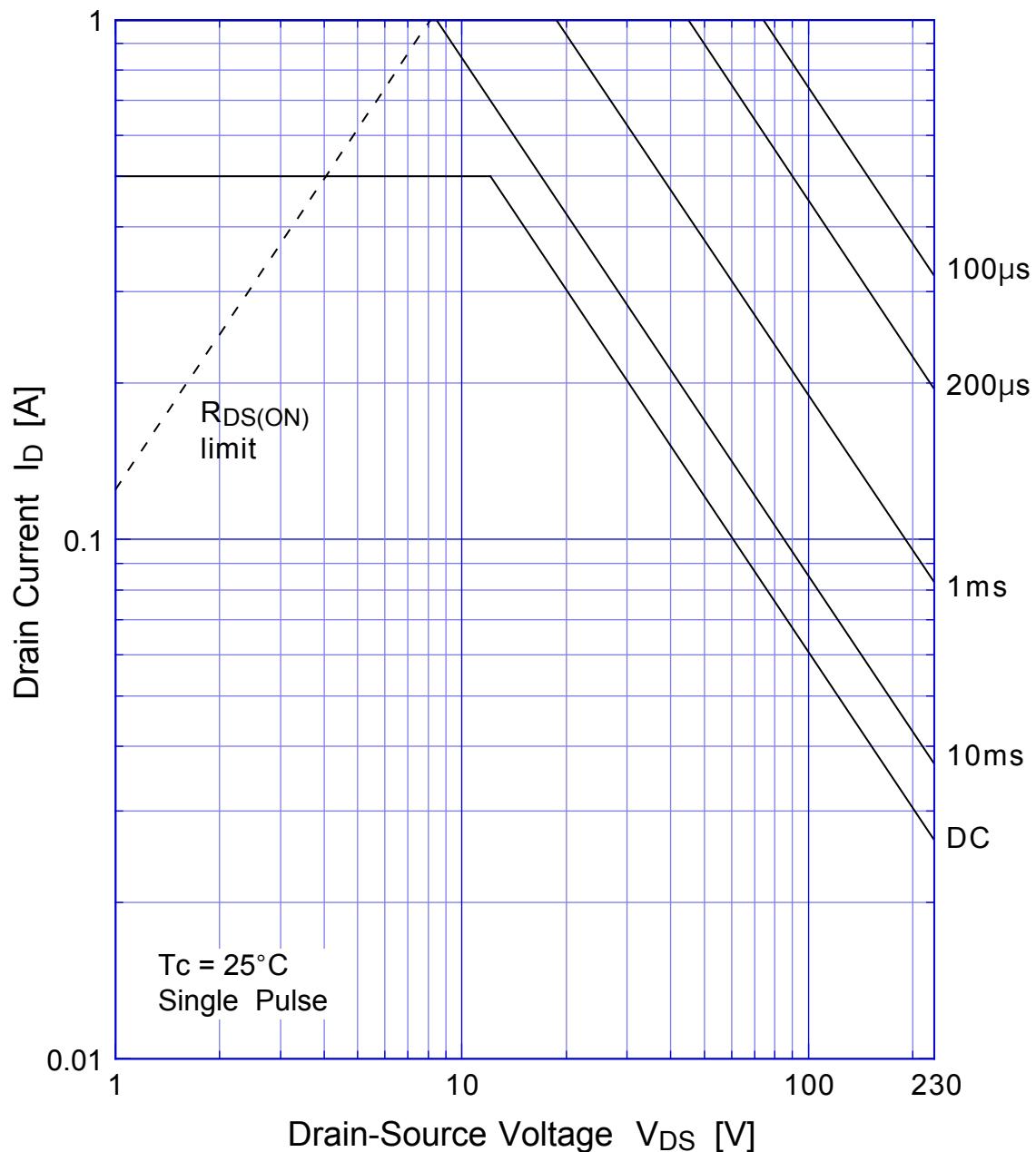
2SK1194 Static Drain-Source On-state Resistance



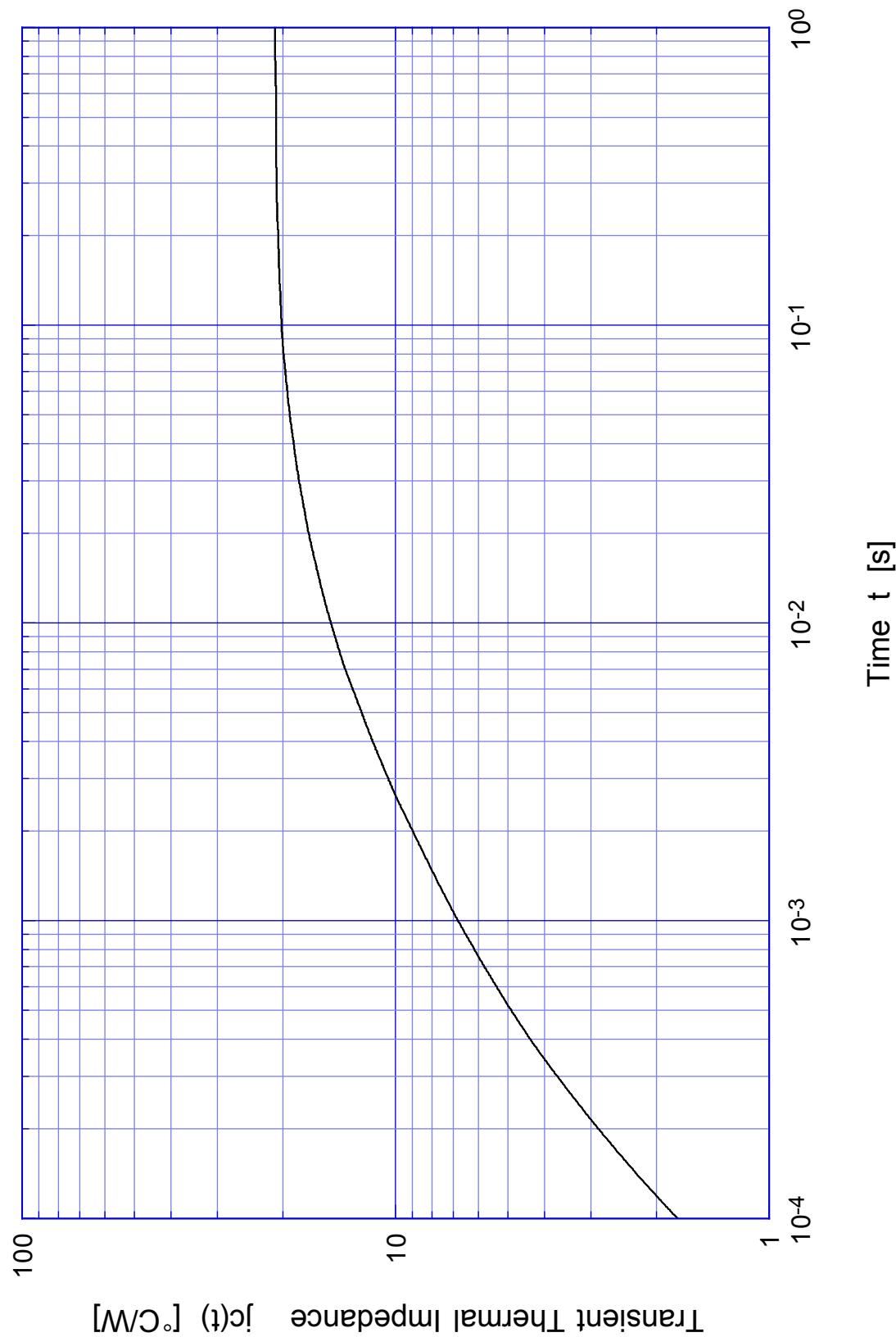
2SK1194 Gate Threshold Voltage



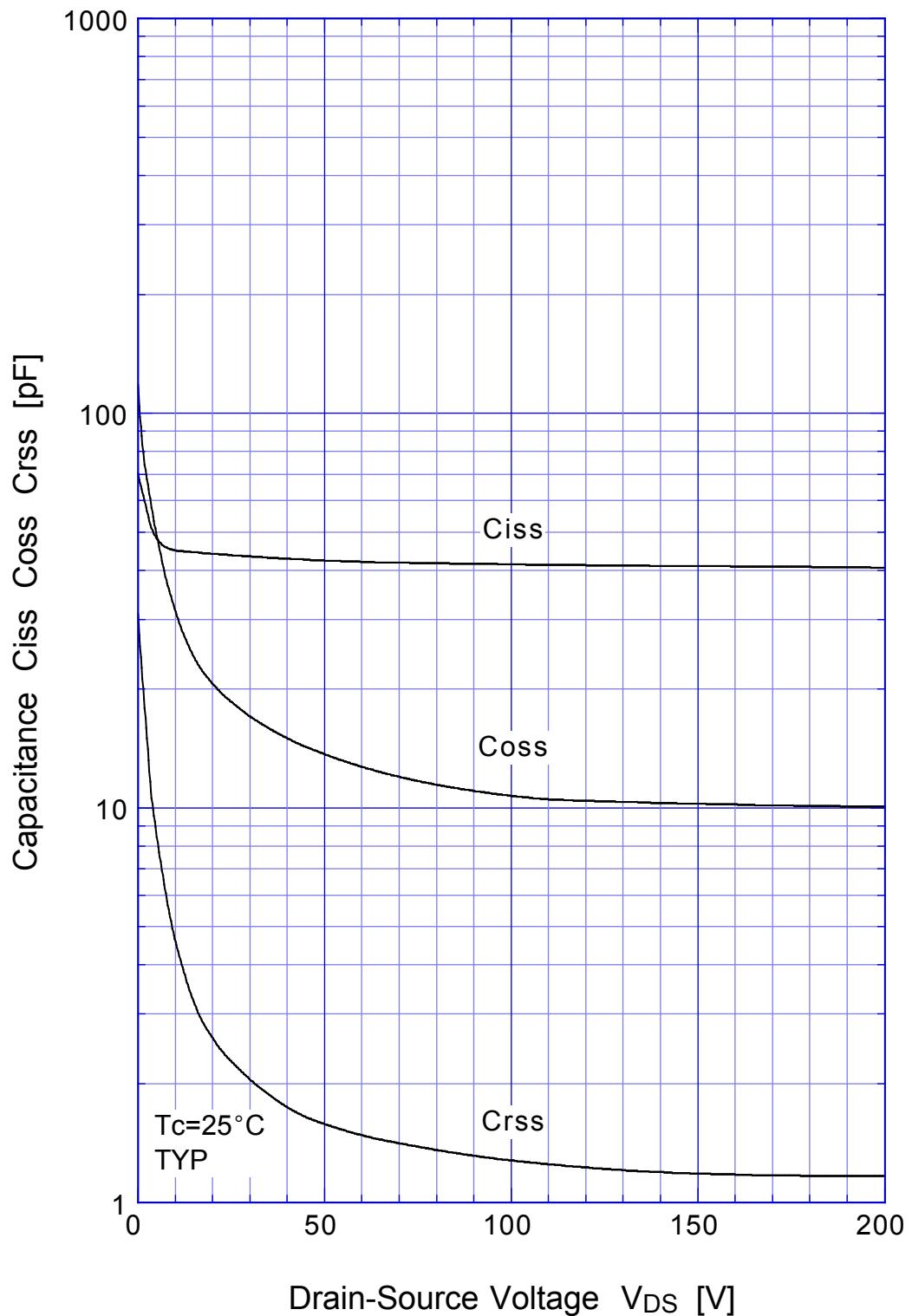
2SK1194 Safe Operating Area



2SK1194 Transient Thermal Impedance



2SK1194 Capacitance



2SK1194

Power Derating



2SK1194

Gate Charge Characteristics

