

SHINDENGEN

VR Series Power MOSFET

N-Channel Enhancement type

2SK1195
(F1E23)

230V 1.5A

FEATURES

- Applicable to 4V drive.
- The static $R_{ds(on)}$ is small.
- Built-in ZD for Gate Protection.

APPLICATION

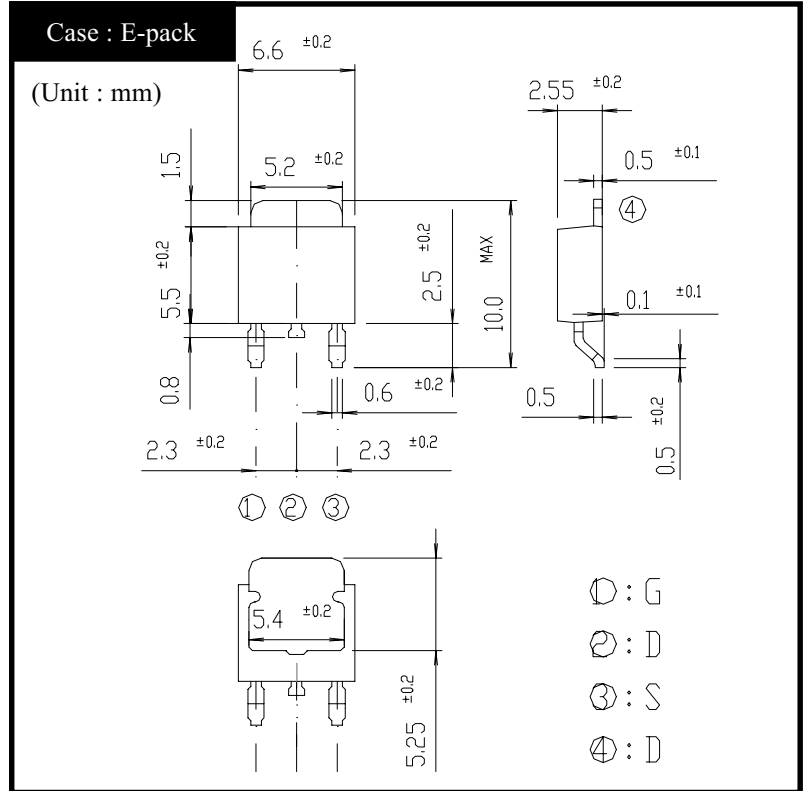
- DC/DC converters
- Power supplies of DC 12-24V input
- Product related to Integrated Service Digital Network

RATINGS

- Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T_{stg}		-55~150	°C
Channel Temperature	T_{ch}		150	
Drain-Source Voltage	V_{DSS}		230	V
Gate-Source Voltage	V_{GSS}		± 20	
Continuous Drain Current (DC)	I_D		1.5	A
Continuous Drain Current (Peak)	I_{DP}		3	
Continuous Source Current (DC)	I_S		1.5	
Total Power Dissipation	P_T		10	W

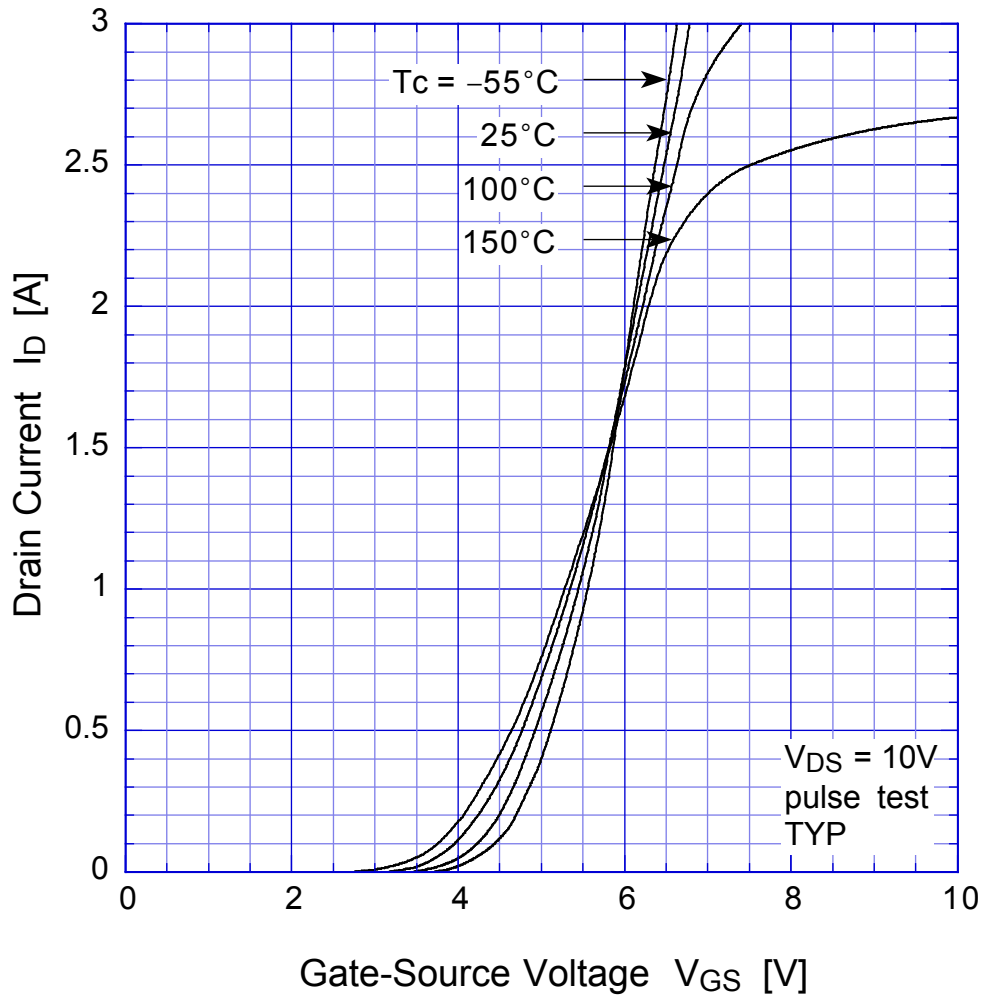
OUTLINE DIMENSIONS



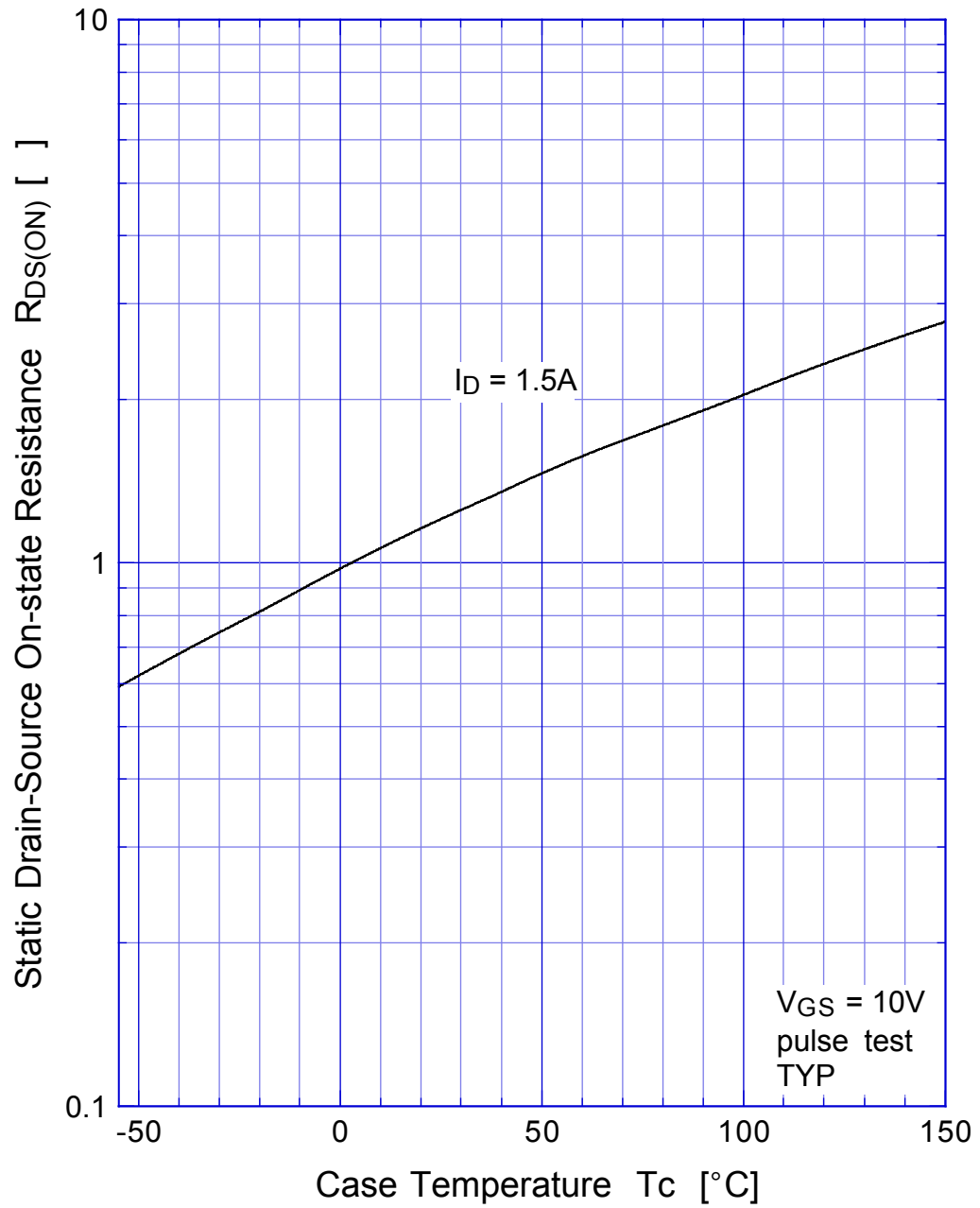
●Electrical Characteristics $T_c = 25^\circ\text{C}$

Item	Symbole	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 250 \mu\text{A}$, $V_{GS} = 0\text{V}$	230			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 230\text{V}$, $V_{GS} = 0\text{V}$			250	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{V}$, $V_{DS} = 0\text{V}$			± 0.1	
Forward Transconductance	g_{fs}	$I_D = 1.5\text{A}$, $V_{DS} = 10\text{V}$	0.7	1.4		S
Static Drain-Source On-state Resistance	$R_{DS(ON)}$	$I_D = 1.5\text{A}$, $V_{GS} = 10\text{V}$		1.2	2	Ω
Gate Threshold Voltage	V_{TH}	$I_D = 0.2\text{mA}$, $V_{DS} = 10\text{V}$	2	3	4	V
Source-Drain Diode Forward Voltage	V_{SD}	$I_S = 1.5\text{A}$, $V_{GS} = 0\text{V}$			1.5	
Thermal Resistance	θ_{jc}	junction to case			12.5	$^\circ\text{C}/\text{W}$
Total Gate Charge	Q_g	$V_{GS} = 10\text{V}$, $I_D = 1.5\text{A}$, $V_{DD} = 200\text{V}$		6.9		nC
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$, $f = 1\text{MHz}$		160		pF
Reverse Transfer Capacitance	C_{rss}			20		
Output Capacitance	C_{oss}			90		
Turn-On Time	t_{on}	$I_D = 1.5\text{A}$, $V_{GS} = 10\text{V}$, $R_L = 67 \Omega$		37	75	ns
Turn-Off Time	t_{off}			50	100	

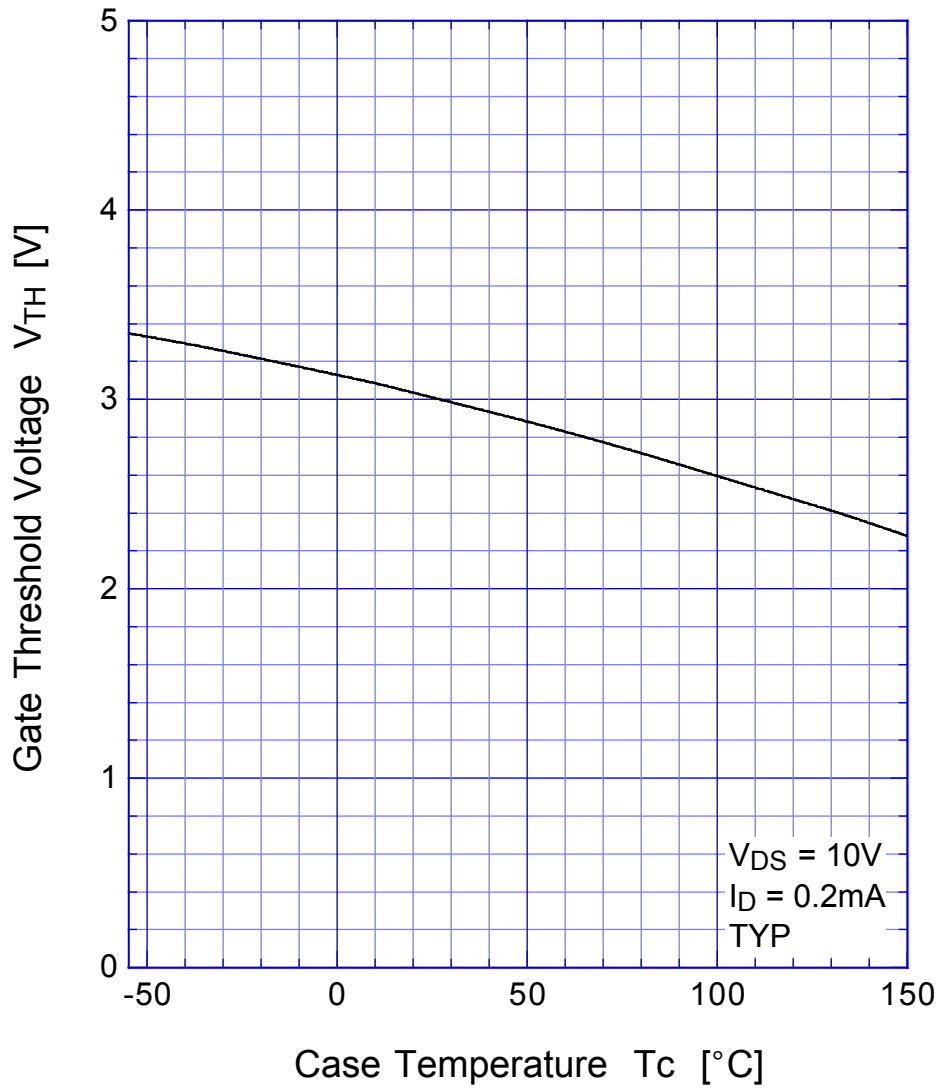
2SK1195 Transfer Characteristics



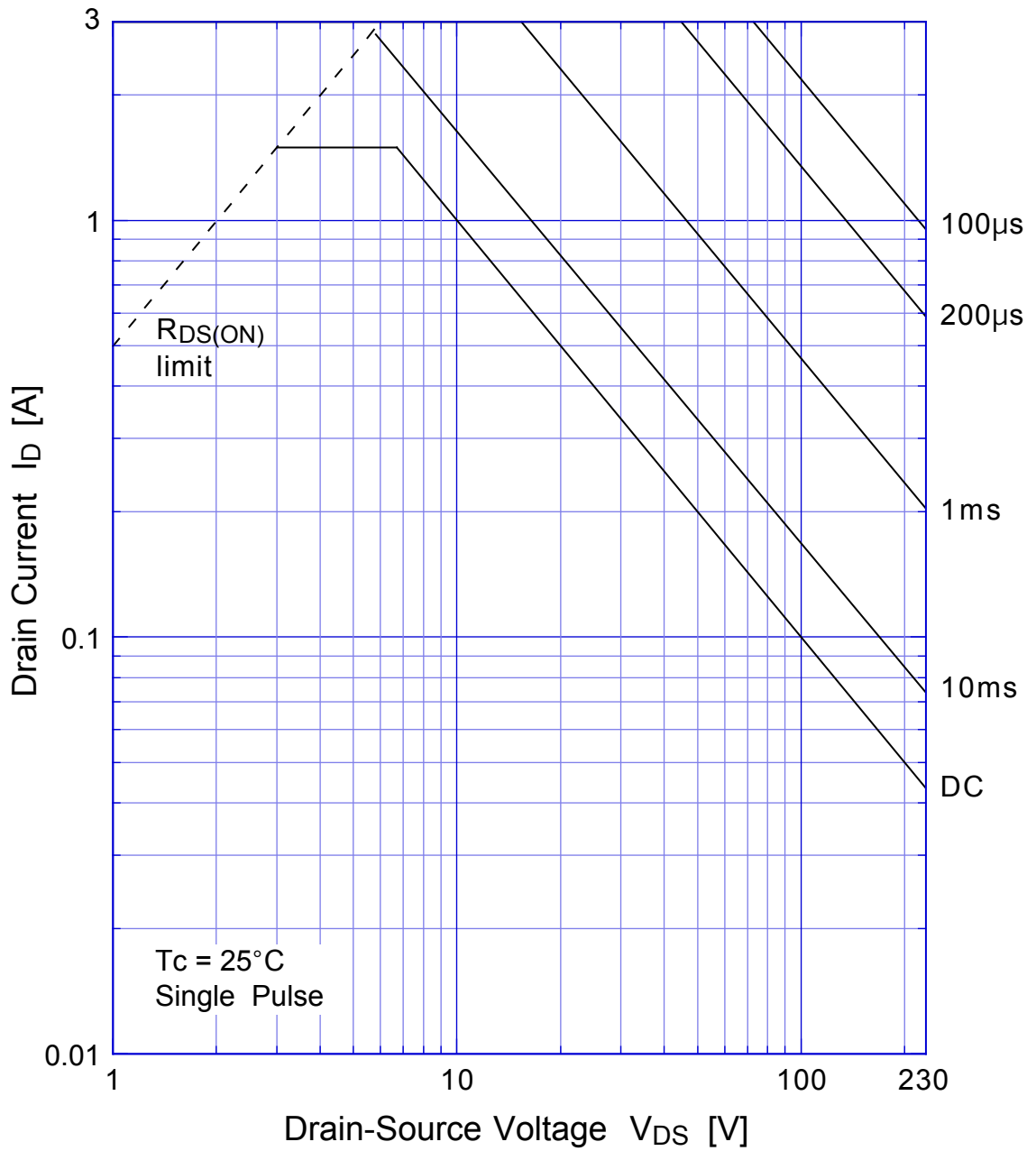
2SK1195 Static Drain-Source On-state Resistance



2SK1195 Gate Threshold Voltage

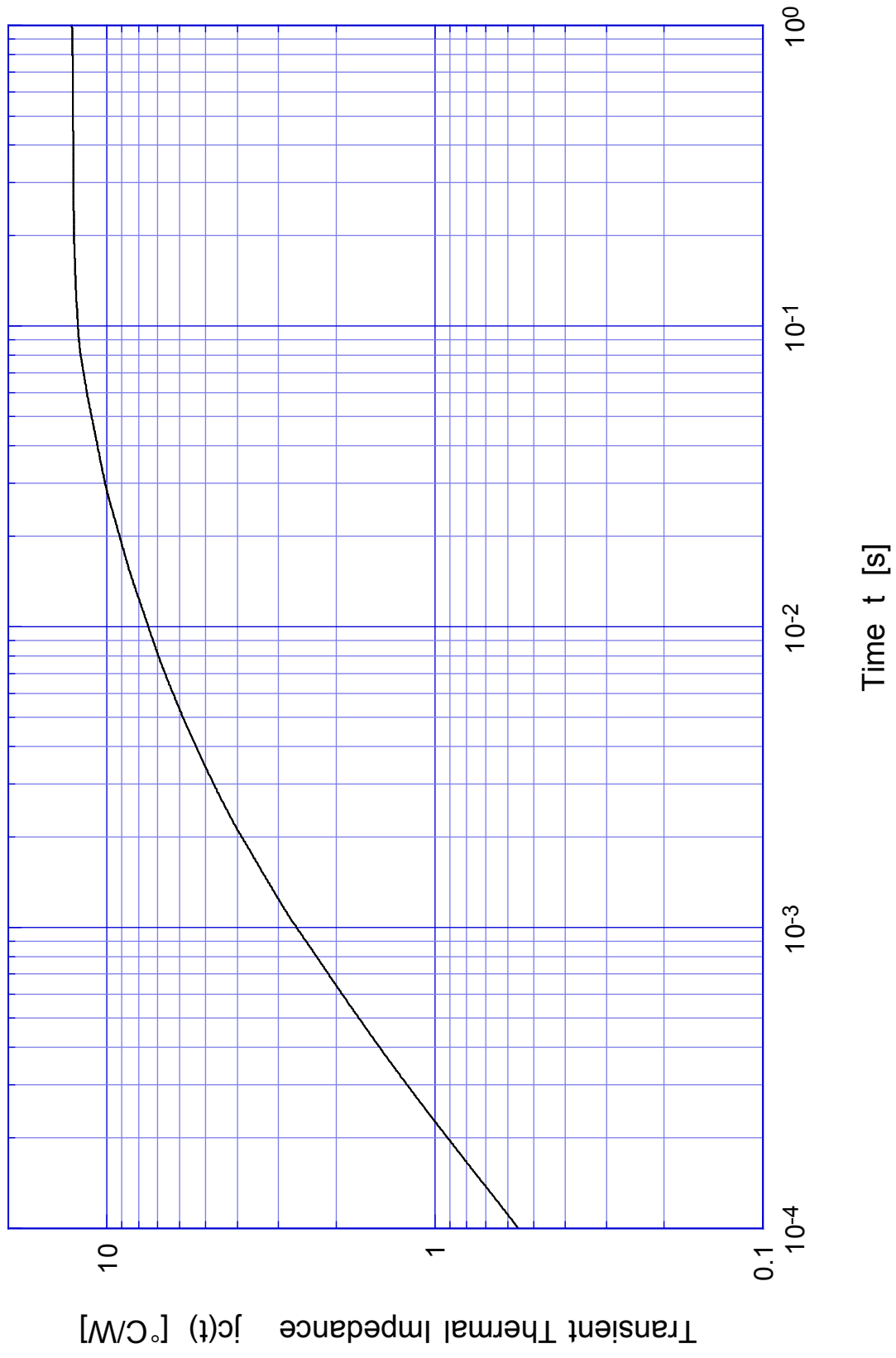


2SK1195 Safe Operating Area



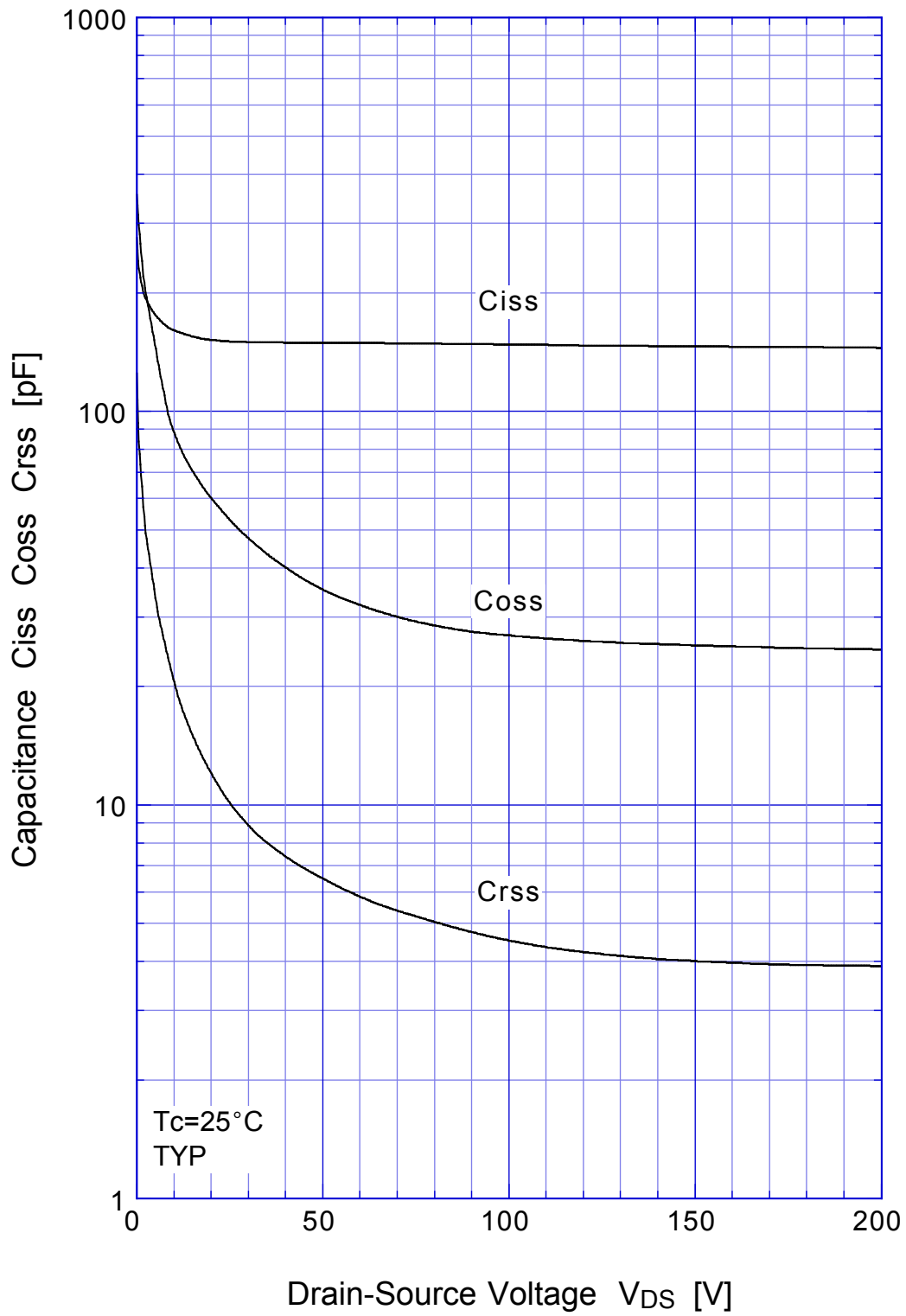
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Transient Thermal Impedance



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Capacitance



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Power Derating



2SK1195 Gate Charge Characteristics

