

VZ Series Power MOSFET

N-Channel Enhancement type

2SK2490

(F10F18VZ)

180V 10A

FEATURES

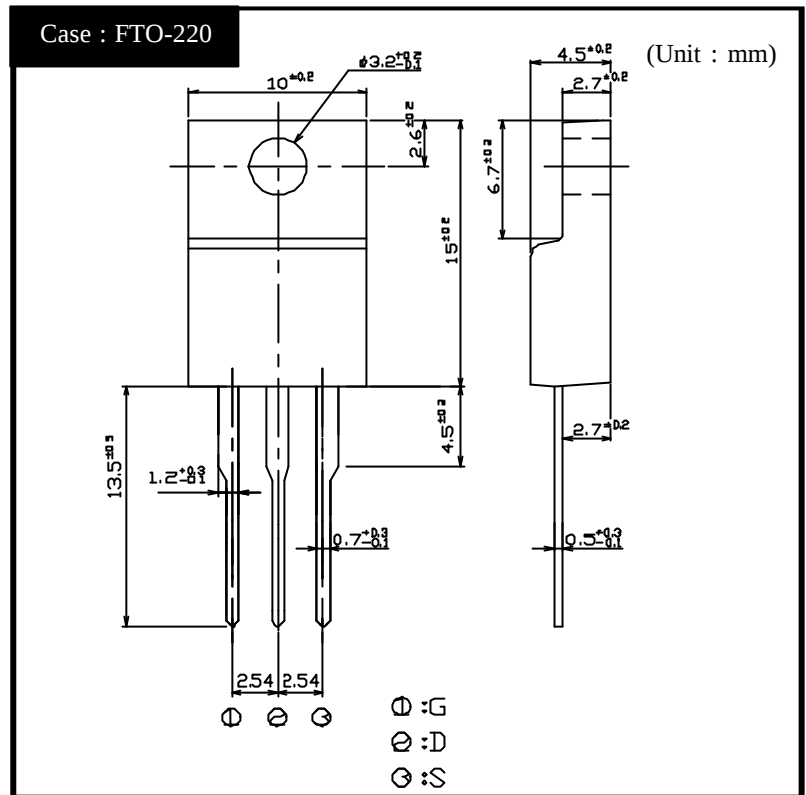
- Input capacitance (C_{iss}) is small. Especially, input capacitance at 0 bias is small.
- The static $R_{ds(on)}$ is small.
- The switching time is fast.

APPLICATION

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

OUTLINE DIMENSIONS

Case : FTO-220



RATINGS

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

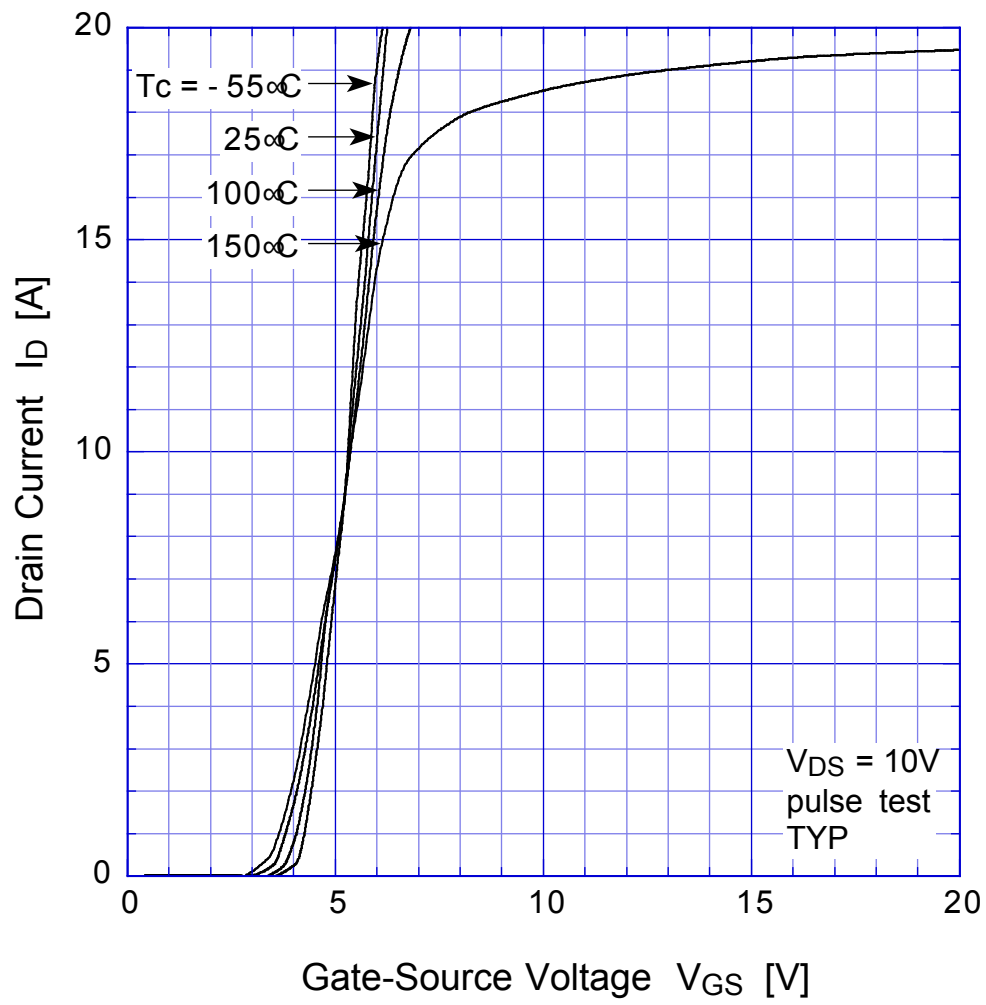
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T _{stg}		-55 ~ 150	
Channel Temperature	T _{ch}		150	
Drain-Source Voltage	V _{DSS}		180	V
Gate-Source Voltage	V _{GSS}		± 30	
Continuous Drain Current (DC)	I _D		10	A
Continuous Drain Current (Peak)	I _{DP}		20	
Continuous Source Current (DC)	I _S		10	
Total Power Dissipation	P _T		40	W
Single Pulse Avalanche Current	I _{AS}	T _{ch} = 25	10	A
Dielectric Strength	V _{dis}	Terminals to case, AC 1 minute	2	kV
Mounting Torque	TOR	(Recommended torque :0.3 N·m)	0.5	N·m

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

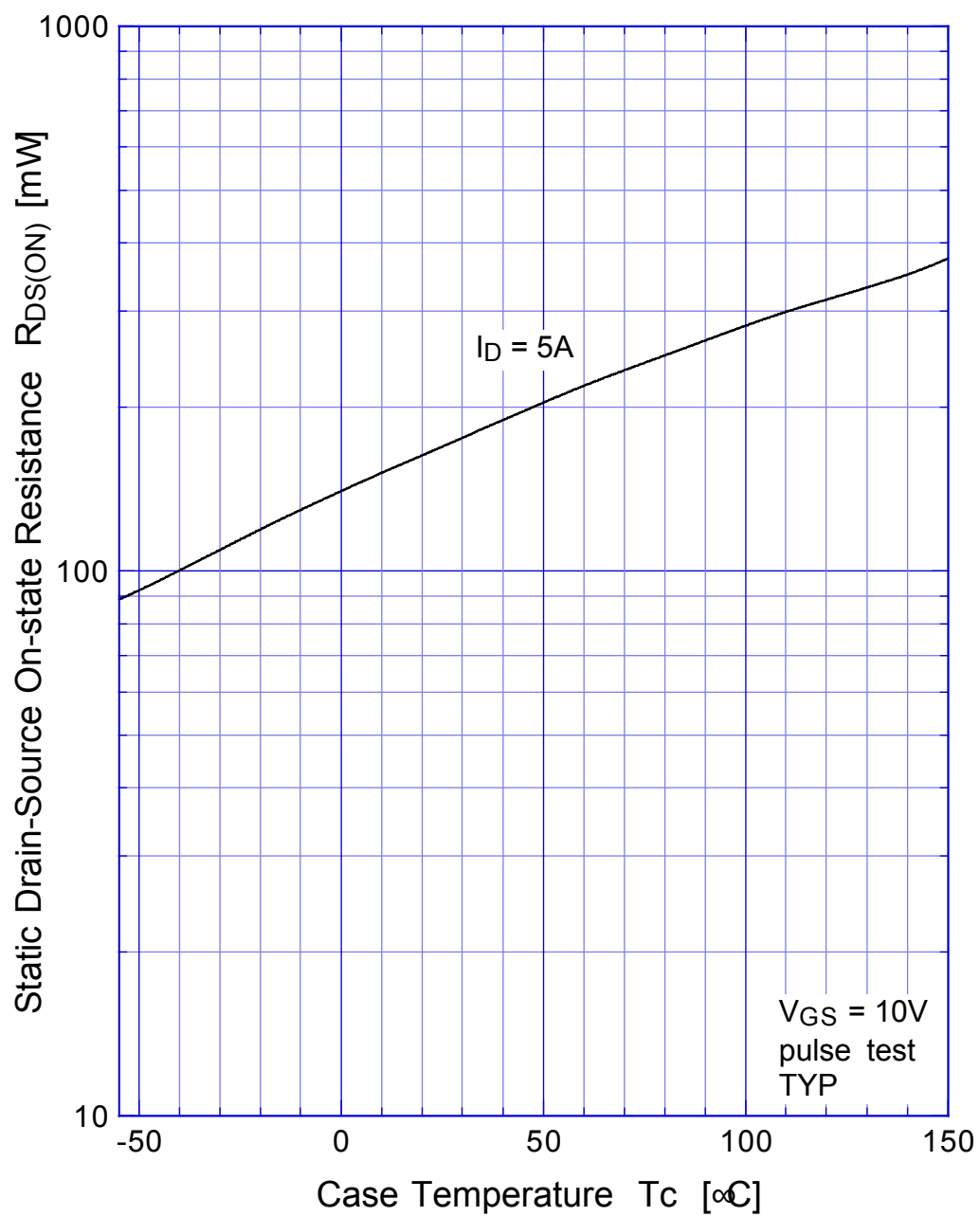
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}$, $V_{GS} = 0\text{V}$	180			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 180\text{V}$, $V_{GS} = 0\text{V}$			250	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30\text{V}$, $V_{DS} = 0\text{V}$			± 0.1	
Forward Transconductance	g_{fs}	$I_D = 5\text{A}$, $V_{DS} = 10\text{V}$	3.0	7.0		S
Static Drain-Source On-state Resistance	$R_{DS(ON)}$	$I_D = 5\text{A}$, $V_{GS} = 10\text{V}$		0.17	0.25	Ω
Gate Threshold Voltage	V_{TH}	$I_D = 1\text{mA}$, $V_{DS} = 10\text{V}$	2.0	3.0	4.0	V
Source-Drain Diode Forward Voltage	V_{SD}	$I_S = 5\text{A}$, $V_{GS} = 0\text{V}$			1.5	
Thermal Resistance	θ_{jc}	junction to case			3.12	$^\circ\text{C}/\text{W}$
Total Gate Charge	Q_g	$V_{DD} = 150\text{V}$, $V_{GS} = 10\text{V}$, $I_D = 10\text{A}$		25		nC
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$, $f = 1\text{MHz}$		720		pF
Reverse Transfer Capacitance	C_{rss}			80		
Output Capacitance	C_{oss}			280		
Turn-On Time	t_{on}	$I_D = 5\text{A}$, $V_{GS} = 10\text{V}$, $R_L = 20\Omega$		50	100	ns
Turn-Off Time	t_{off}			140	280	

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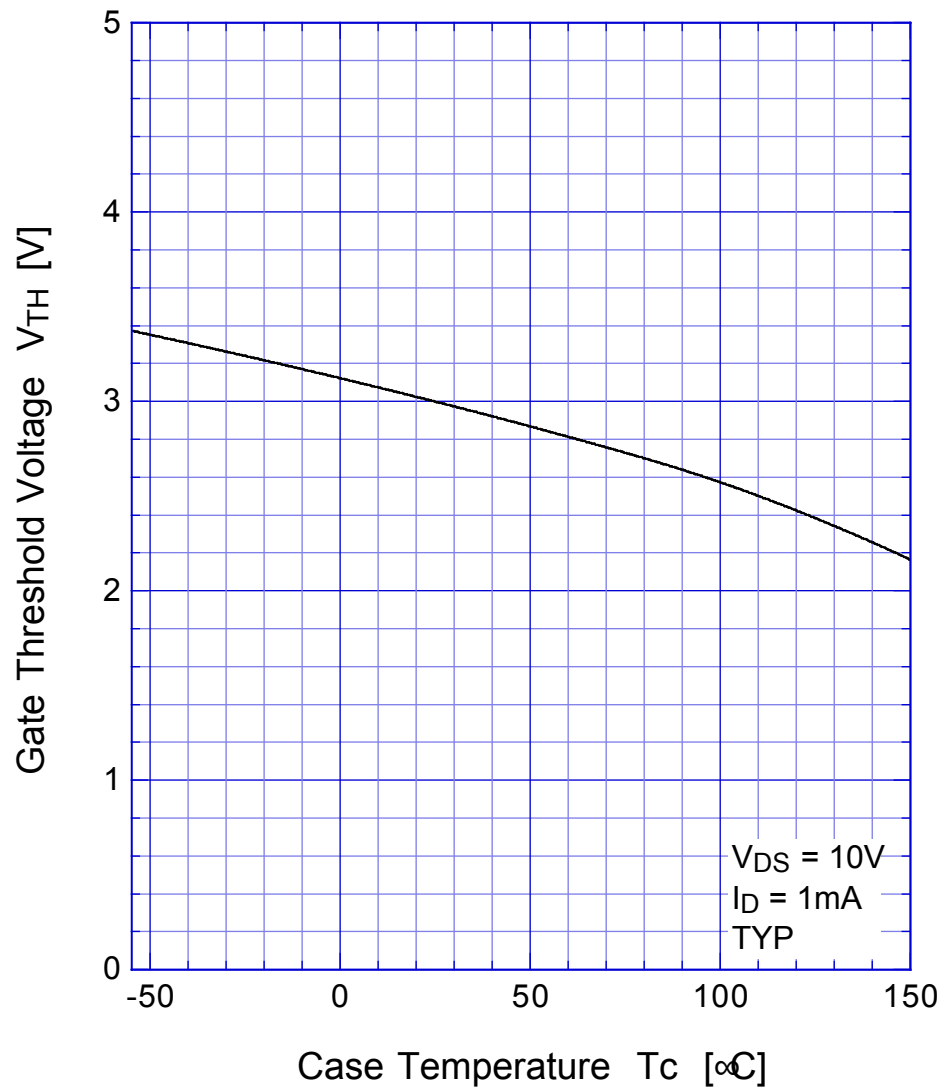
Transfer Characteristics



2SK2490 Static Drain-Source On-state Resistance

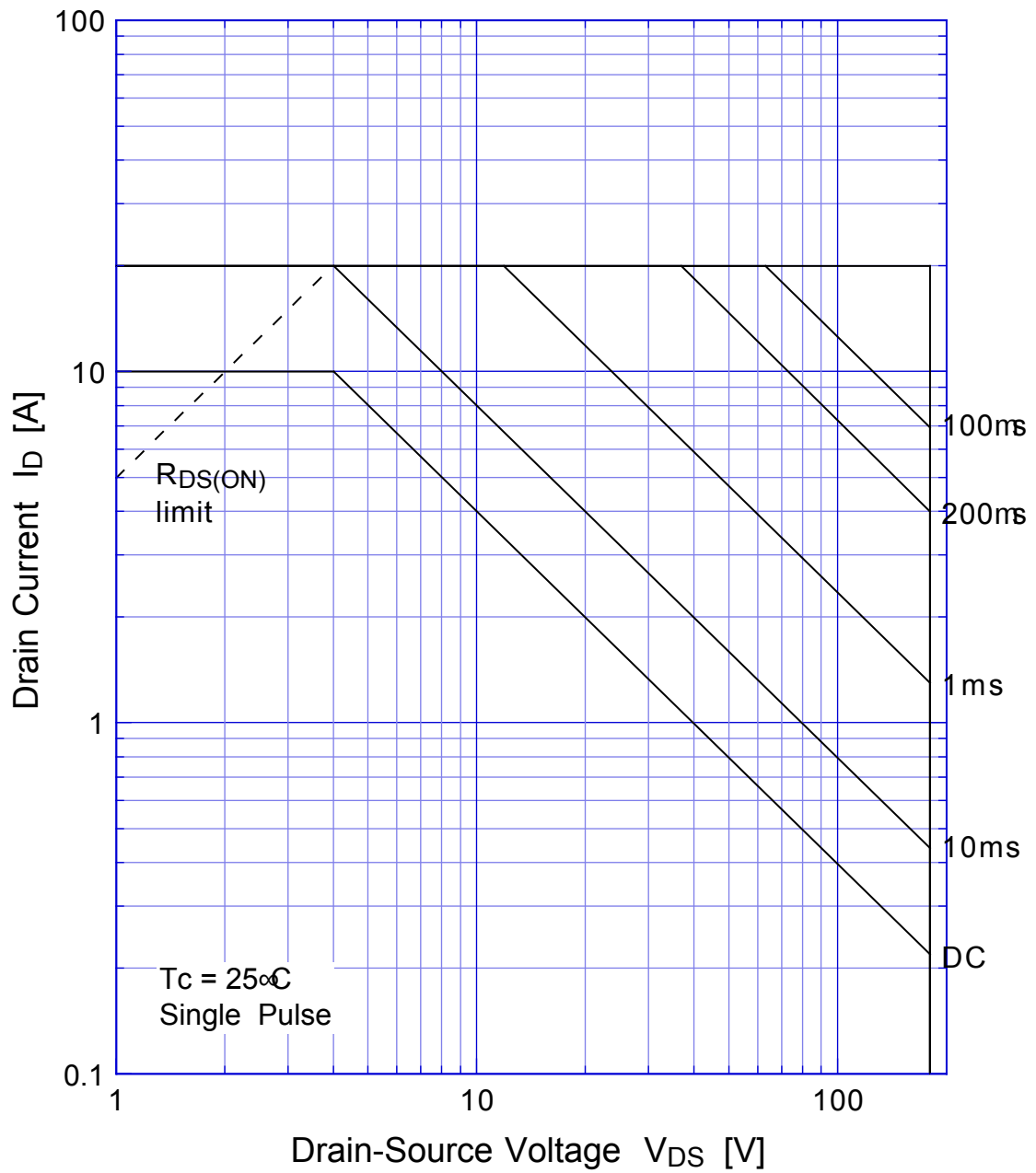


2SK2490 Gate Threshold Voltage

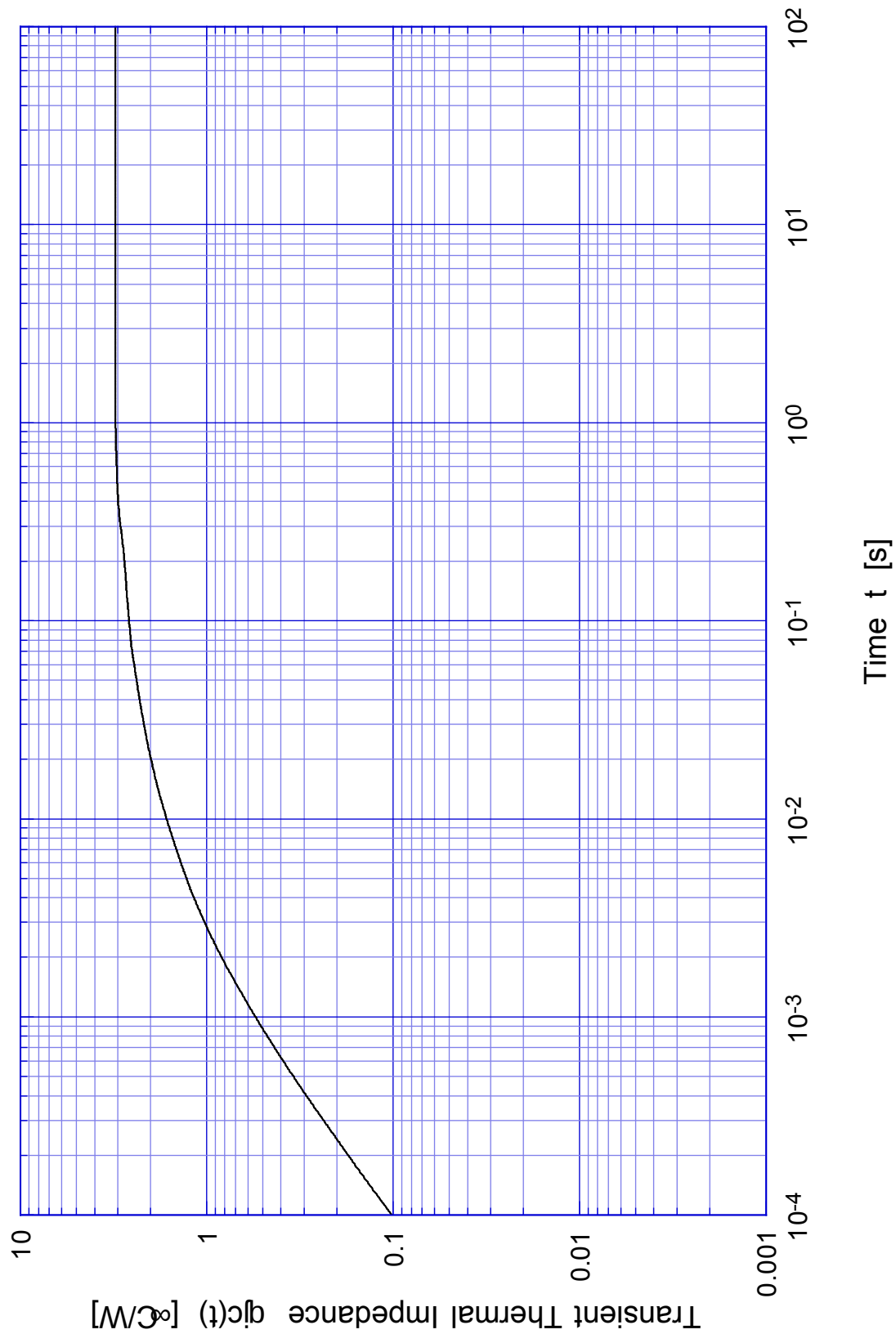


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Safe Operating Area

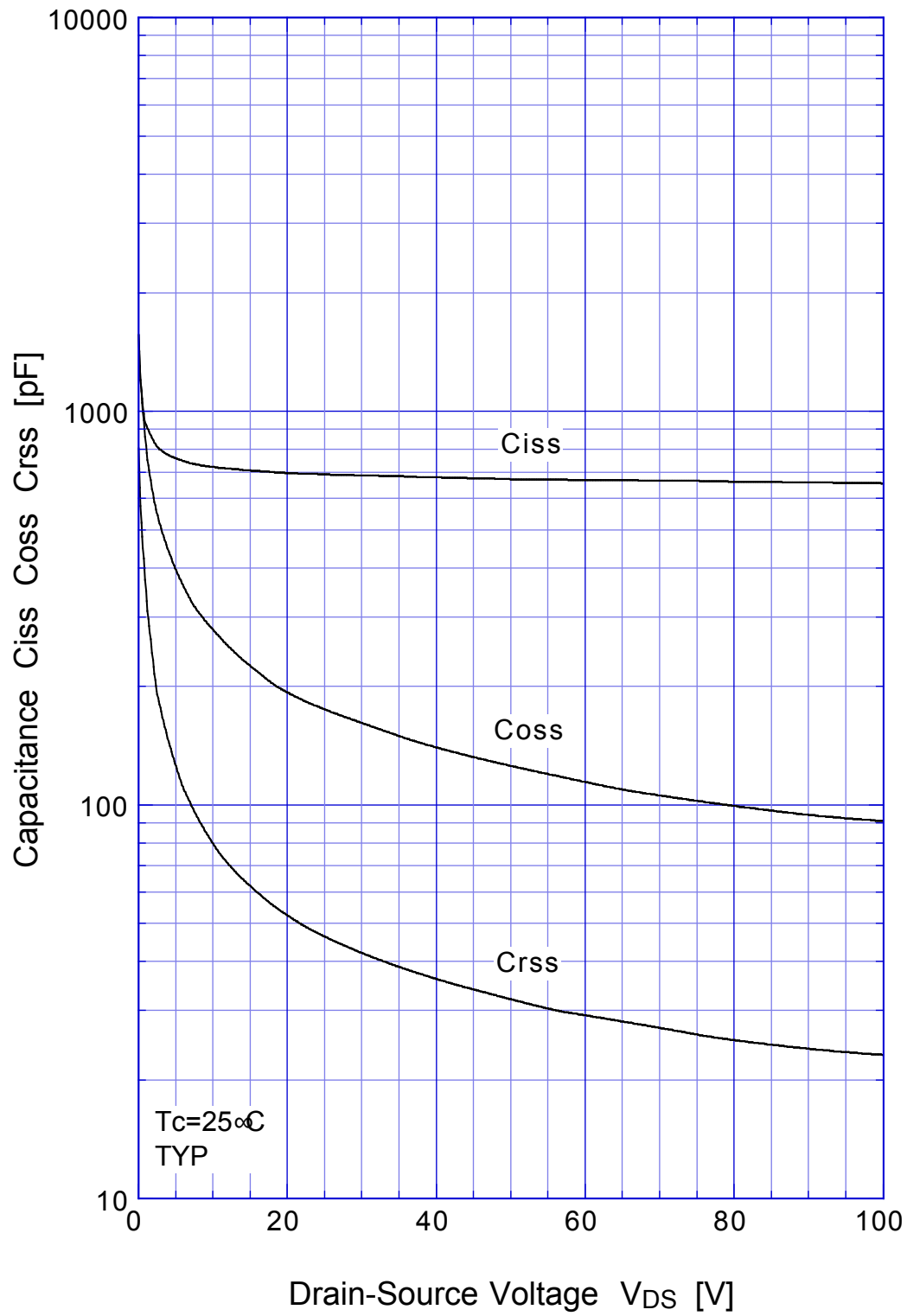


2SK2490 Transient Thermal Impedance



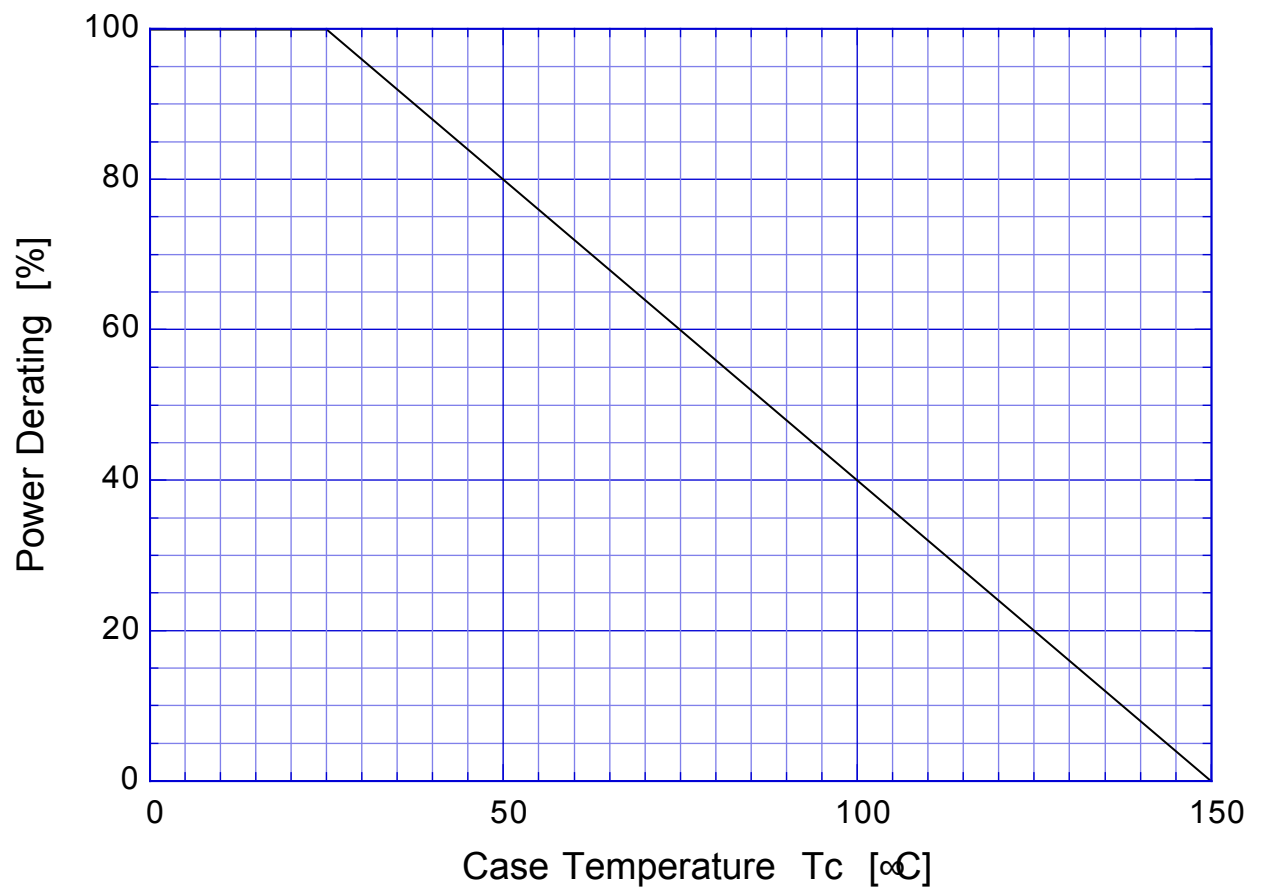
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Capacitance



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Power Derating



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Gate Charge Characteristics

