

2SK2178
(F2E50VX2)

500V 2A

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.

APPLICATION

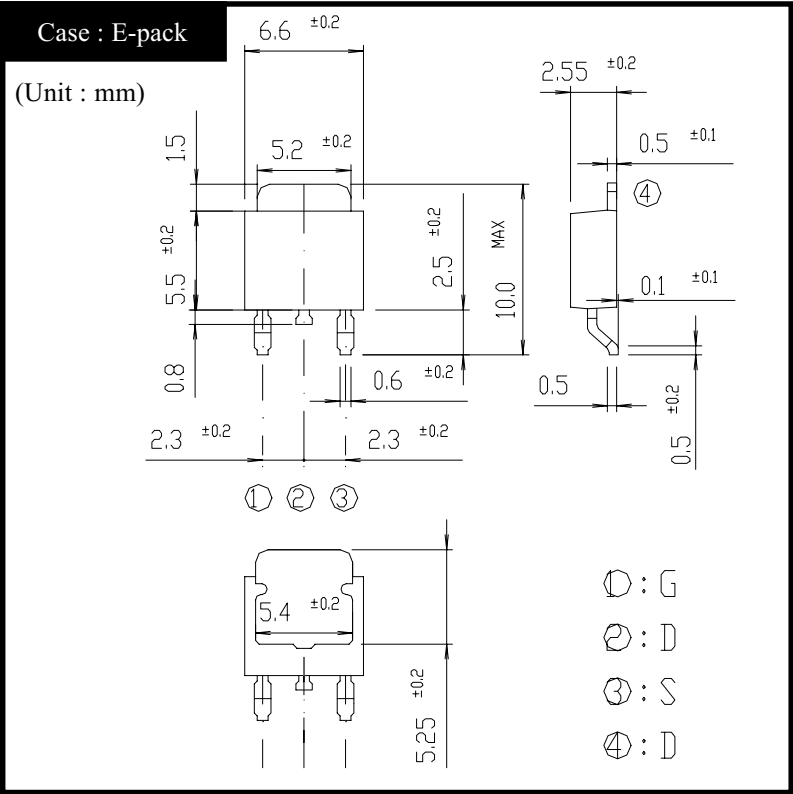
- Switching power supply of AC 100V input
- High voltage power supply
- Inverter

RATINGS

●Absolute Maximum Ratings (Tc = 25°C)

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	T _{stg}		-55~150	°C
Channel Temperature	T _{ch}		150	
Drain-Source Voltage	V _{DSS}		500	V
Gate-Source Voltage	V _{GSS}		±30	
Continuous Drain Current (DC)	I _D		2	A
Continuous Drain Current (Peak)	I _{DP}		6	
Continuous Source Current (DC)	I _S		2	
Total Power Dissipation	P _T		15	W
Single Pulse Avalanche Current	I _{AS}	T _{ch} = 25°C	2	A

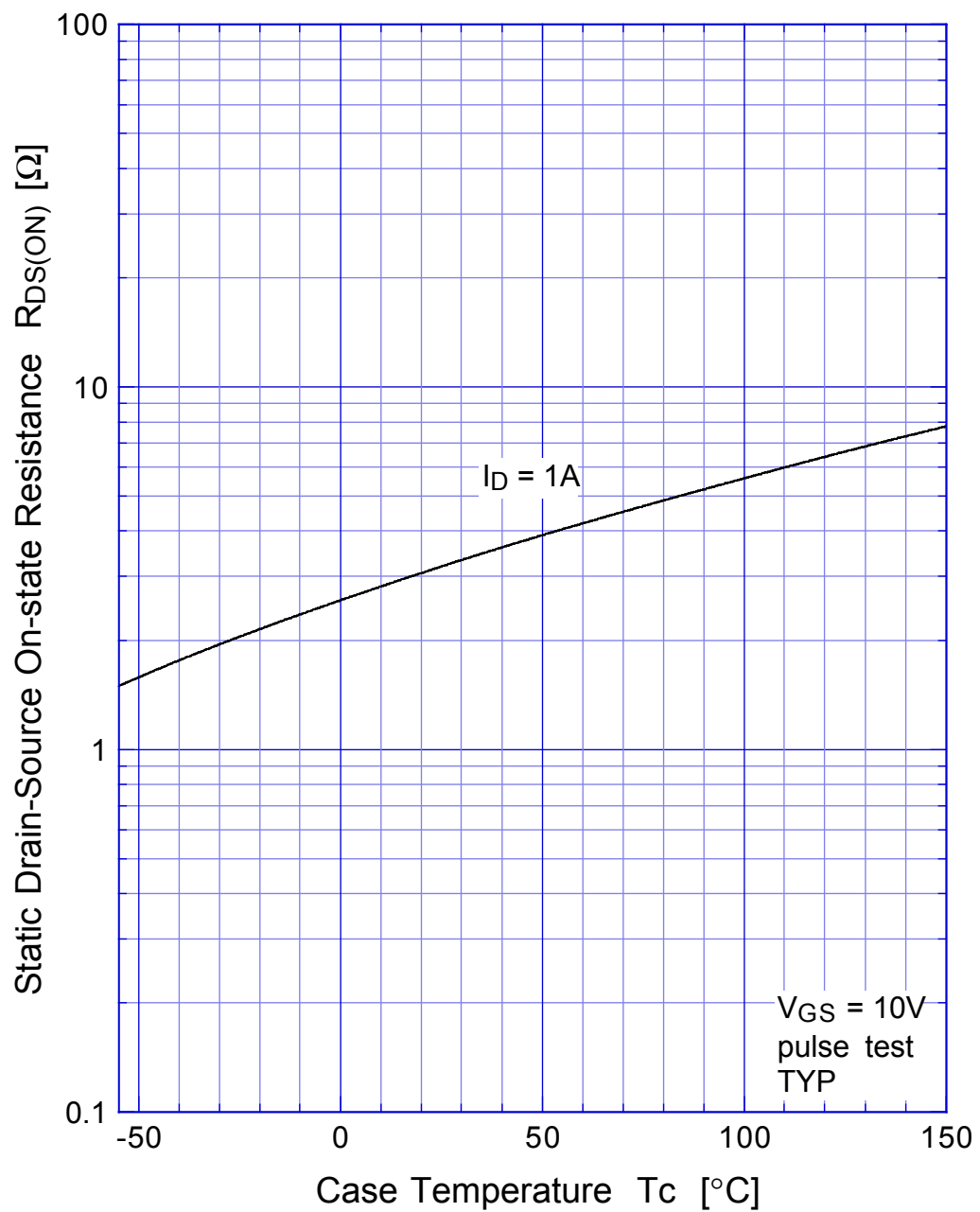
OUTLINE DIMENSIONS



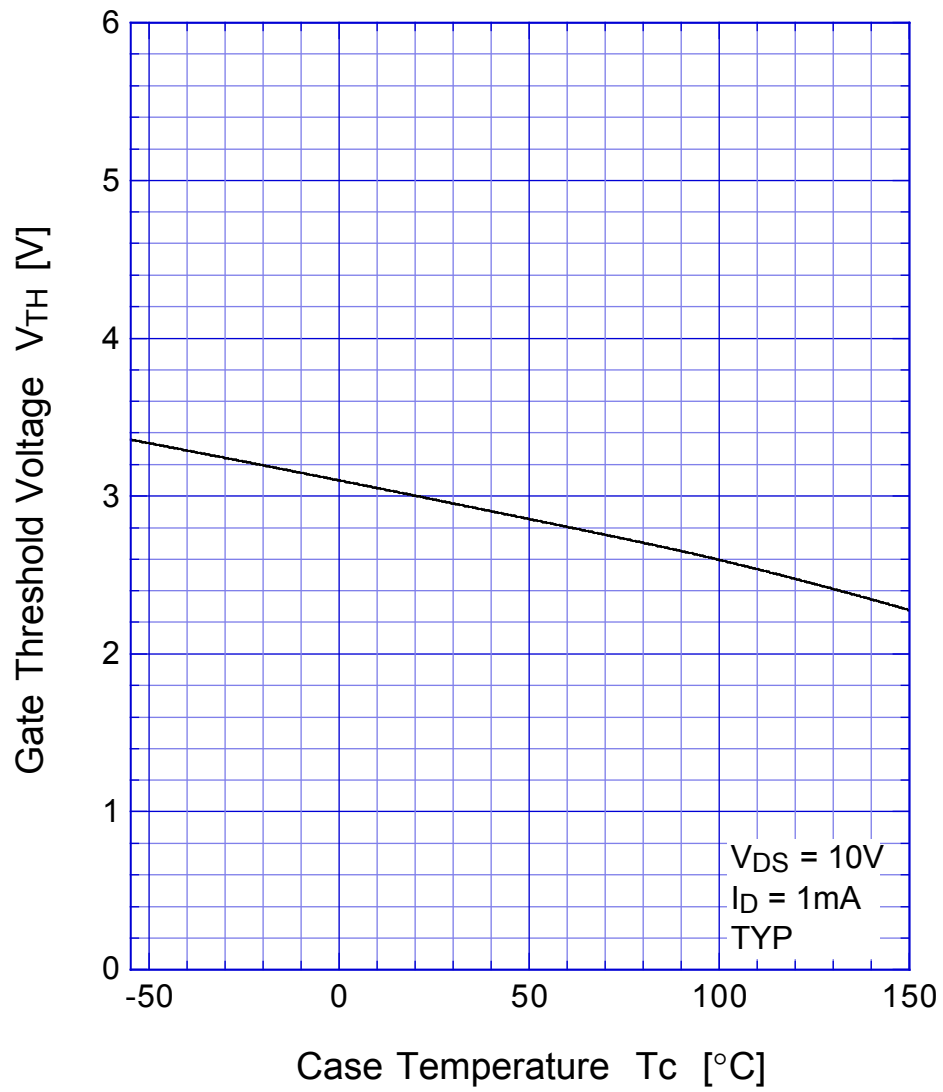
●Electrical Characteristics T_c = 25°C

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	I _D = 1mA, V _{GS} = 0V	500			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 500V, 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 = 1A, V _{DS} = 10V	0.6	1.3		S
Static Drain-Source On-state Resistance	R _{DS(ON)}	I _D = 1A, V _{GS} = 10V		3.2	4.0	Ω
Gate Threshold Voltage	V _{TH}	I _D = 0.3mA, V _{DS} = 10V	2.5	3.0	3.5	V
Source-Drain Diode Forwade Voltage	V _{SD}	I _S = 1A, V _{GS} = 0V			1.5	
Thermal Resistance	θ _{jc}	junction to case			8.33	°C/W
Total Gate Charge	Q _g	V _{DD} = 400V, V _{GS} = 10V, I _D = 2A		9		nC
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		220		pF
Reverse Transfer Capacitance	C _{rss}			17		
Output Capacitance	C _{oss}			55		
Turn-On Time	t _{on}	I _D = 1A, V _{GS} = 10V, R _L = 150Ω		40	75	ns
Turn-Off Time	t _{off}			70	120	

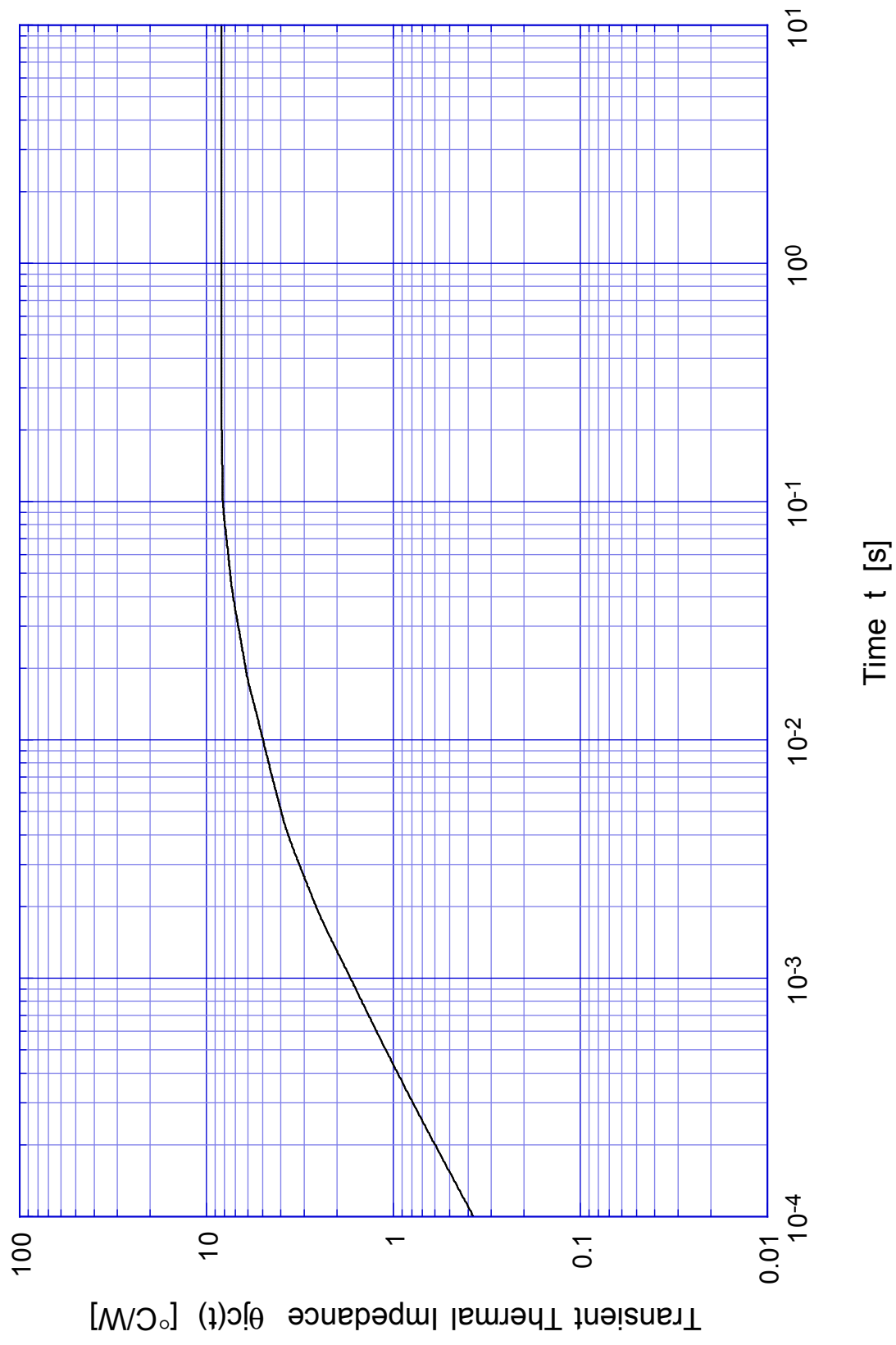
2SK2178 Static Drain-Source On-state Resistance



2SK2178 Gate Threshold Voltage



2SK2178 Transient Thermal Impedance



2SK2178

Power Derating

