

2SK2177

(F1E50VX2)

500V 1A

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

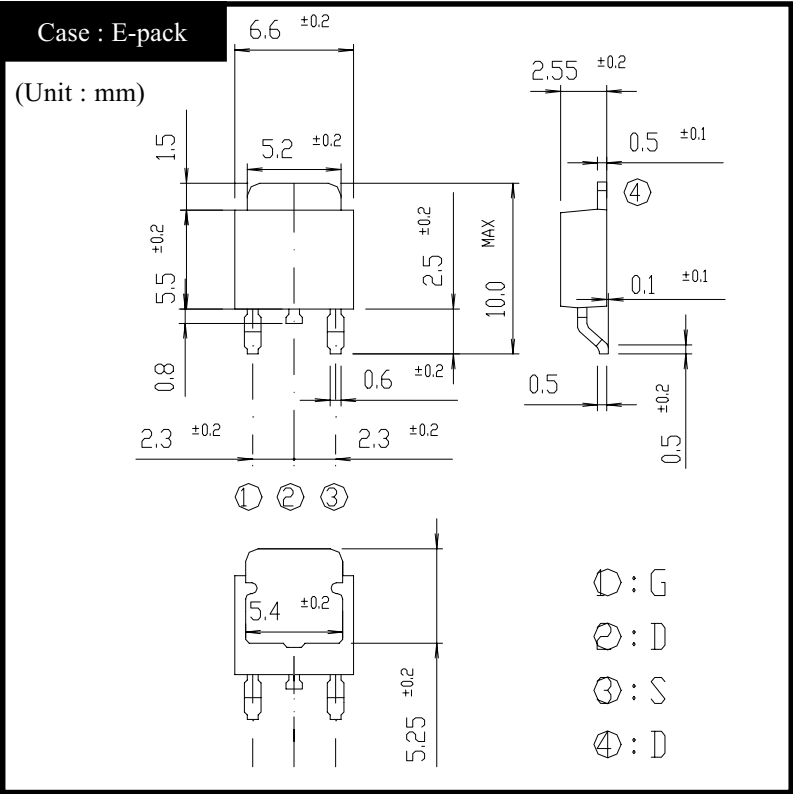
- Switching power supply of AC 100V input
- High voltage power supply
- Inverter

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		1	A
Continuous Drain Current (Peak)	I _{DP}		3	
Continuous Source Current (DC)	I _S		1	
Total Power Dissipation	P _T		10	W
Single Pulse Avalanche Current	I _{AS}	T _{ch} = 25°C	1	A

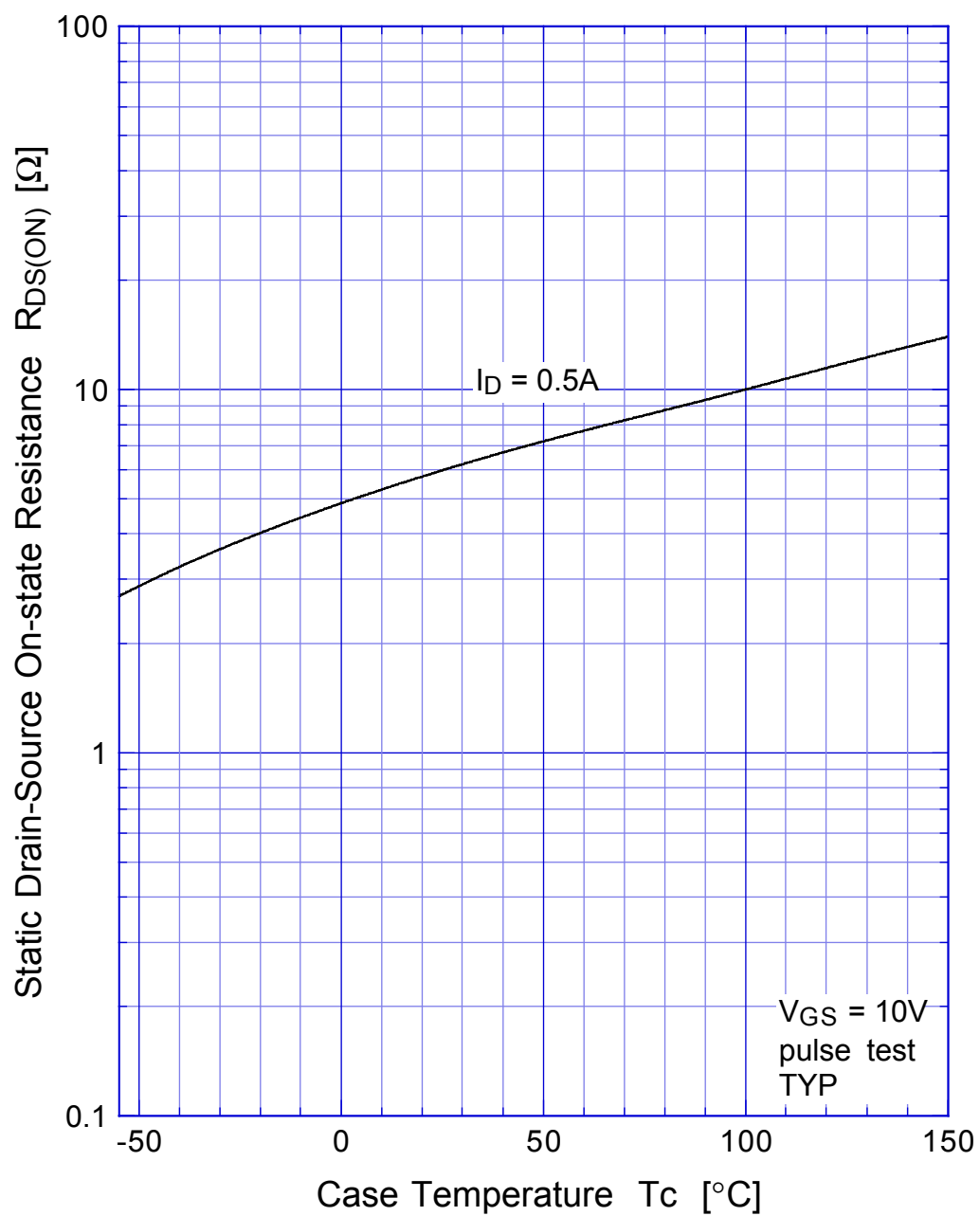
OUTLINE DIMENSIONS



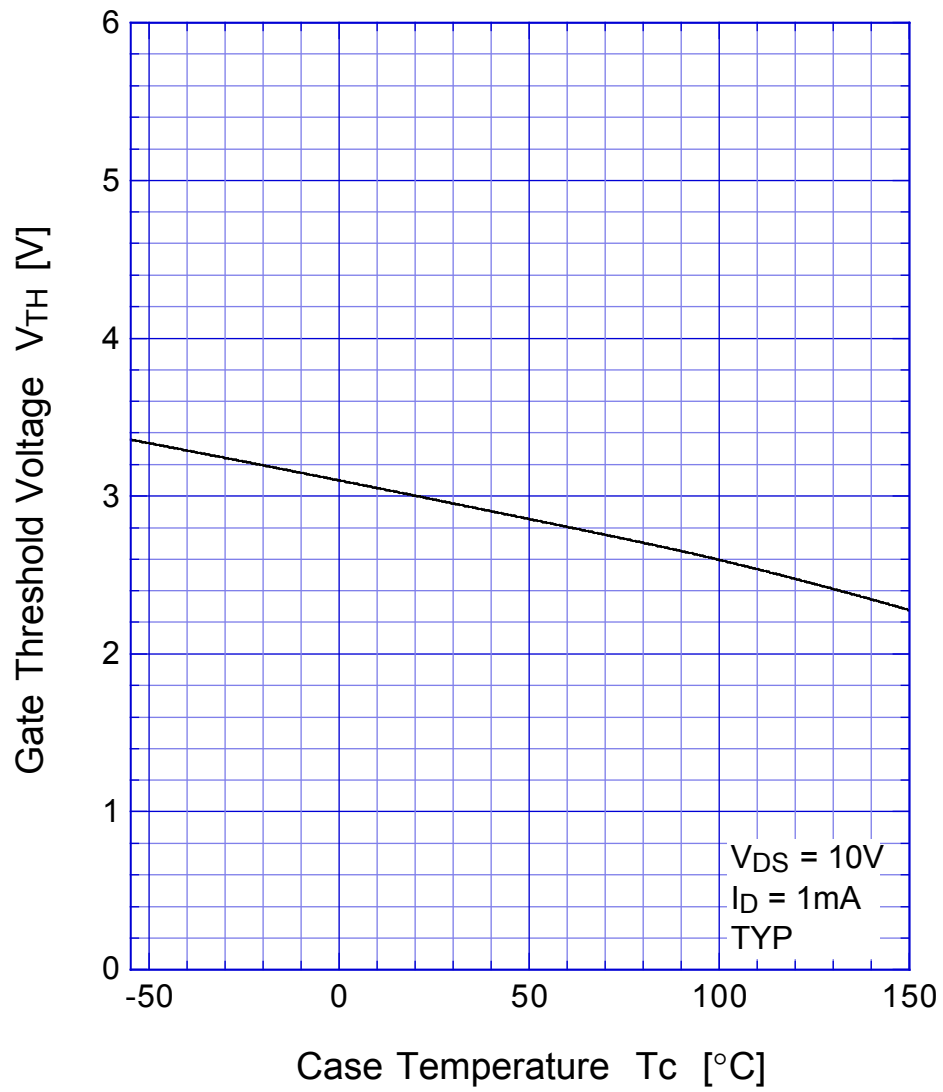
●Electrical Characteristics T_c = 25°C

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 = 0.5A, V _{DS} = 10V	0.3	0.7		S
Static Drain-Source On-state Resistance	R _{DS(ON)}	I _D = 0.5A, V _{GS} = 10V		5.8	7.0	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 = 0.5A, V _{GS} = 0V			1.5	
Thermal Resistance	θ _{jc}	junction to case			12.5	°C/W
Total Gate Charge	Q _g	V _{DD} = 400V, V _{GS} = 10V, I _D = 1A		6		nC
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		140		pF
Reverse Transfer Capacitance	C _{rss}			13		
Output Capacitance	C _{oss}			45		
Turn-On Time	t _{on}	I _D = 0.5A, V _{GS} = 10V, R _L = 300Ω		35	70	ns
Turn-Off Time	t _{off}			60	100	

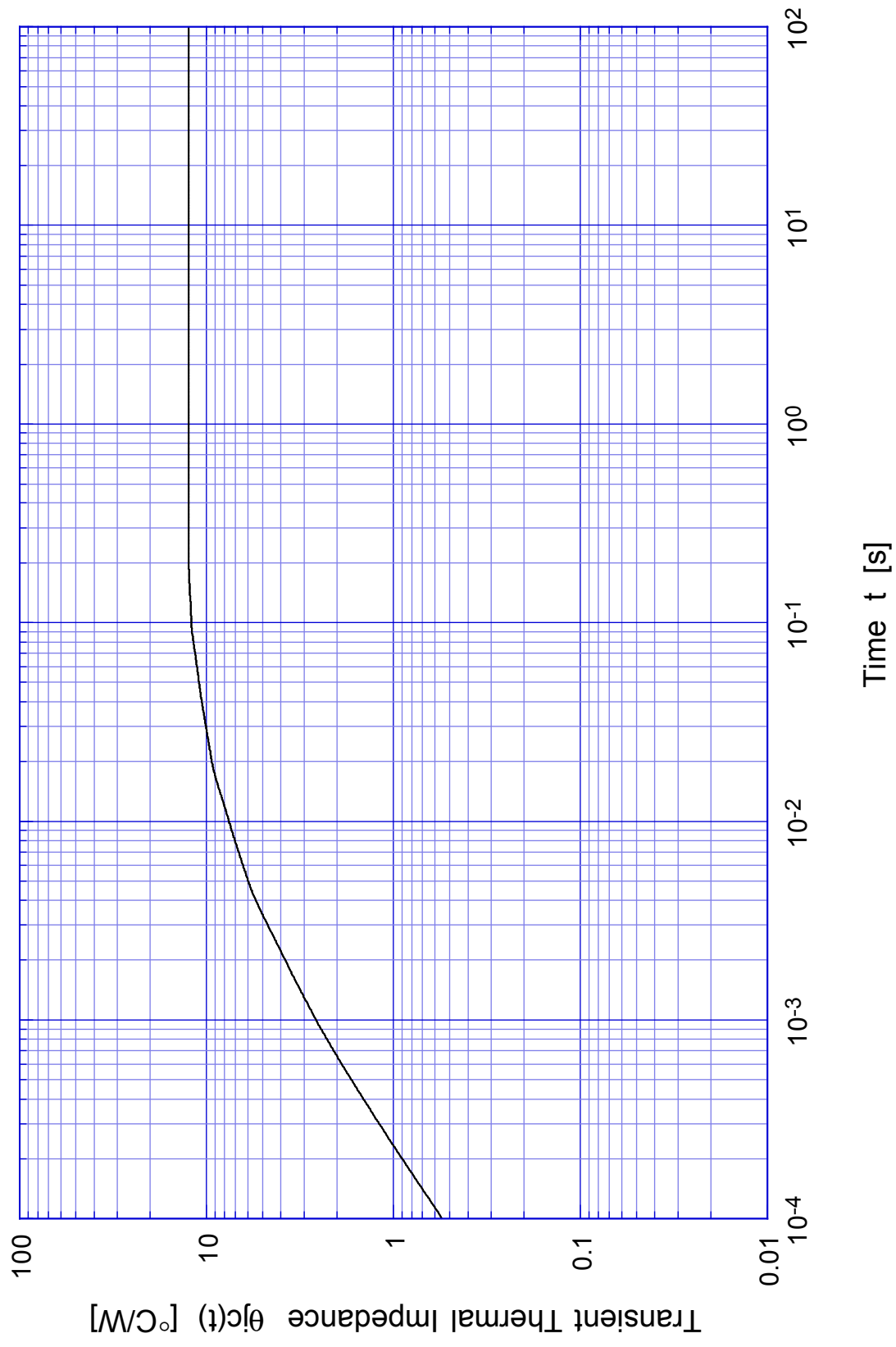
2SK2177 Static Drain-Source On-state Resistance



2SK2177 Gate Threshold Voltage



2SK2177 Transient Thermal Impedance



2SK2177

Power Derating

