SPECIFICATION

DEVICE NAME : Power MOSFET .

TYPE NAME : 2SK2827-01 .

SPEC. NO. : .

Fuji Electric Co.,Ltd.

This Specification is subject to change without notice.

	DATE	NAME	APPROVED
DRAWN			
CHECKED			

Fuji Electric Co.,Ltd.

DWG. NO.

Y 0257-R-004a

1.Scope This specifies Fuji Power MOSFET 2SK2827-01

2.Construction N-Channel enhancement mode power MOSFET

3.Applications for Switching

4.Outview TO-220 Outview See to 5/12 page

5.Absolute Maximum Ratings at Tc=25℃ (unless otherwise specified)

Description	Symbol	Characteristics	Unit	Remarks
Drain-Source Voltage	V_{DS}	600	V	
Continuous Drain Current	I_D	±9	A	
Pulsed Drain Current	I_{DP}	±32	A	
Gate-Source Voltage	V_{GS}	±35	V	
Repetitive or non-repetitive	I_{AV}	9	A	$T_{ch} \leq 150℃$
Maximum Avalanche Energy	E_{AV}	144.4	mJ	*1
Maximum Power Dissipation	P_D	60	W	
Operating and Storage	T_{ch}	150	℃	
Temperature range	T_{stg}	-55 to +150	℃	

*1 L=3.27mH,Vcc=60V

6.Electrical Characteristics at Tc=25℃ (unless otherwise specified)

Static Ratings

Description	Symbol	Conditions		min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=1mA V_{GS}=0V		600			V
Gate Threshold Voltage	$V_{GS}(th)$	I_D=1mA $V_{DS}=V_{GS}$		3.5	4.0	4.5	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V V_{GS}=0V	T_{ch}=25℃		10	500	μA
			T_{ch}=125℃		0.2	1.0	mA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±35V V_{DS}=0V			10	100	nA
Drain-Source On-State Resistance	$R_{DS}(on)$	I_D=4.5A V_{GS}=10V			1.0	1.2	Ω

Dynamic Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Forward Transconductance	g_{fs}	I_D=4.5A V_{DS}=25V	2.5	5.0		S
Input Capacitance	Ciss	V_{DS}=25V		900	1400	pF
Output Capacitance	Coss	V_{GS}=0V		150	230	
Reverse Transfer Capacitance	Crss	f=1MHz		70	110	
Turn-On Time	td(on)	V_{cc}=300V		25	40	ns
	tr	V_{GS}=10V		70	110	
Turn-Off Time	td(off)	I_D=9A		60	90	
	tf	R_{GS}=10Ω		35	60	

Reverse Diode

Description	Symbol	Conditions	min.	typ.	max.	Unit
Avalanche Capability	I_{AV}	L=3.27mH Tch=25℃ See Fig.1 and Fig.2	9			A
Diode Forward On-Voltage	V_{SD}	I_F=2×I_{DR} V_{GS}=0V T_{ch}=25℃		1.0	1.5	V
Reverse Recovery Time	trr	I_F=2×I_{DR} -di/dt=100A/μs T_{ch}=25℃		550		ns
Reverse Recovery Charge	Qrr			7		μc

7.Thermal Resistance

Description	Symbol	min.	typ.	max.	Unit
Channel to Case	Rth(ch-c)			2.08	℃/W
Channel to Ambient	Rth(ch-a)			75.0	℃/W

Fig. 1 Test Circuit

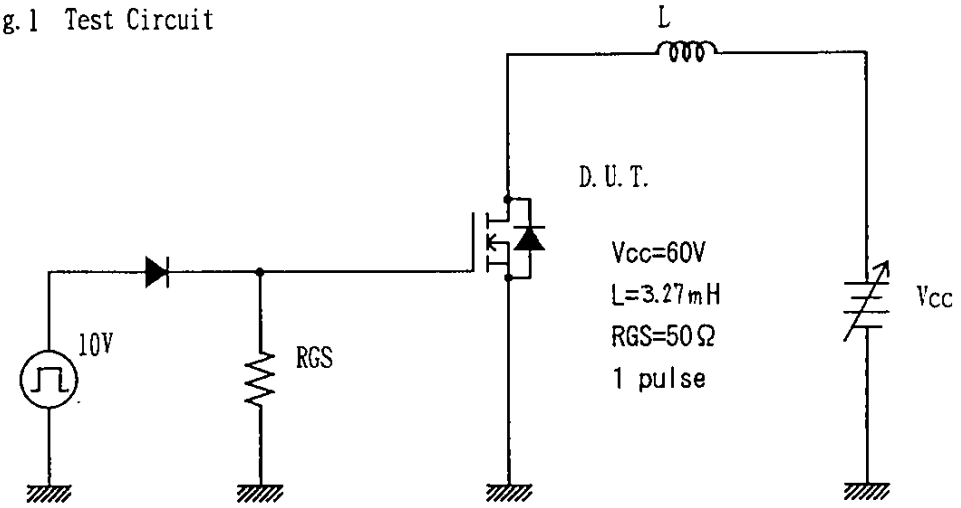
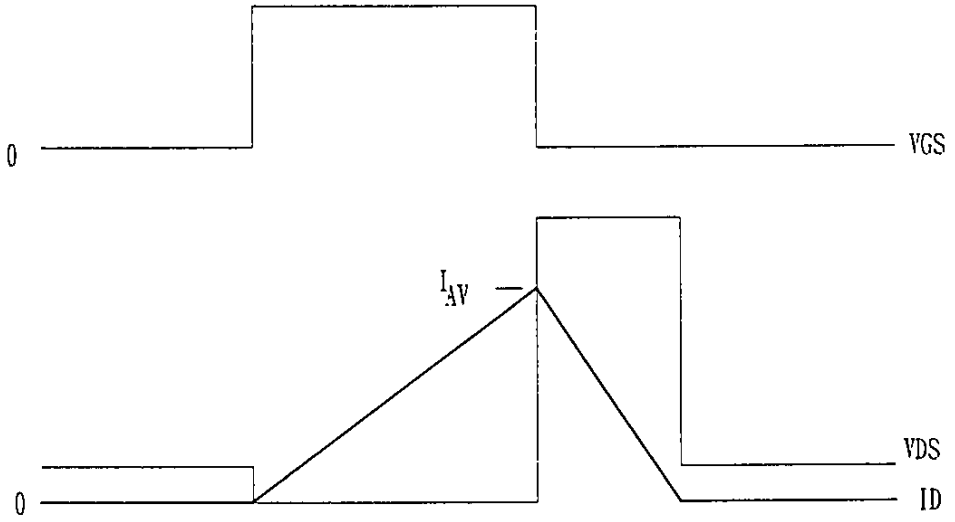
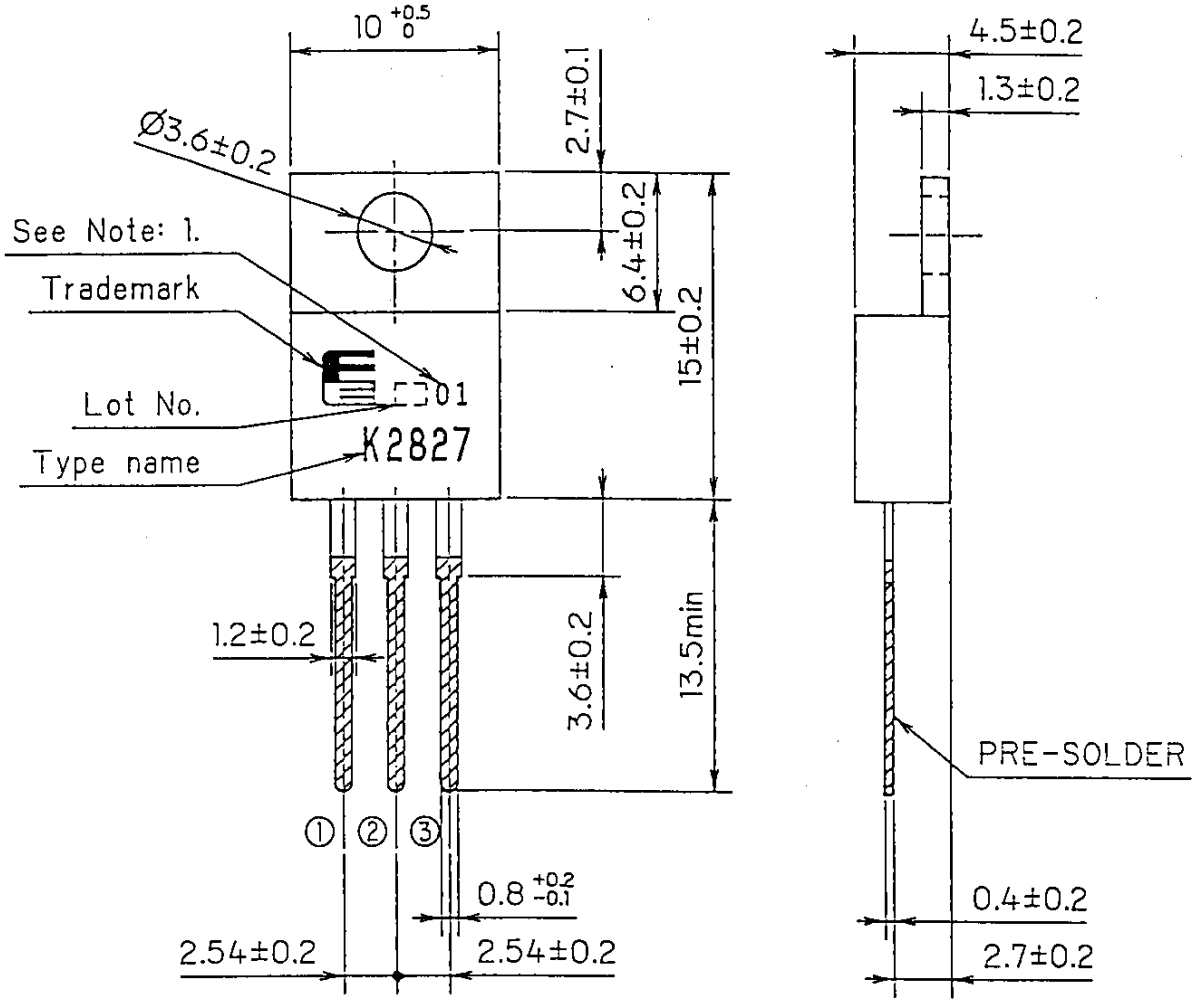


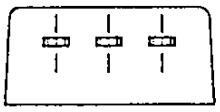
Fig. 2 Operating waveforms



FUJI POWER MOS FET

TYPE : 2SK2827-01





① ② ③

CONNECTION

① GATE
② DRAIN
③ SOURCE

JEDEC : TO-220AB

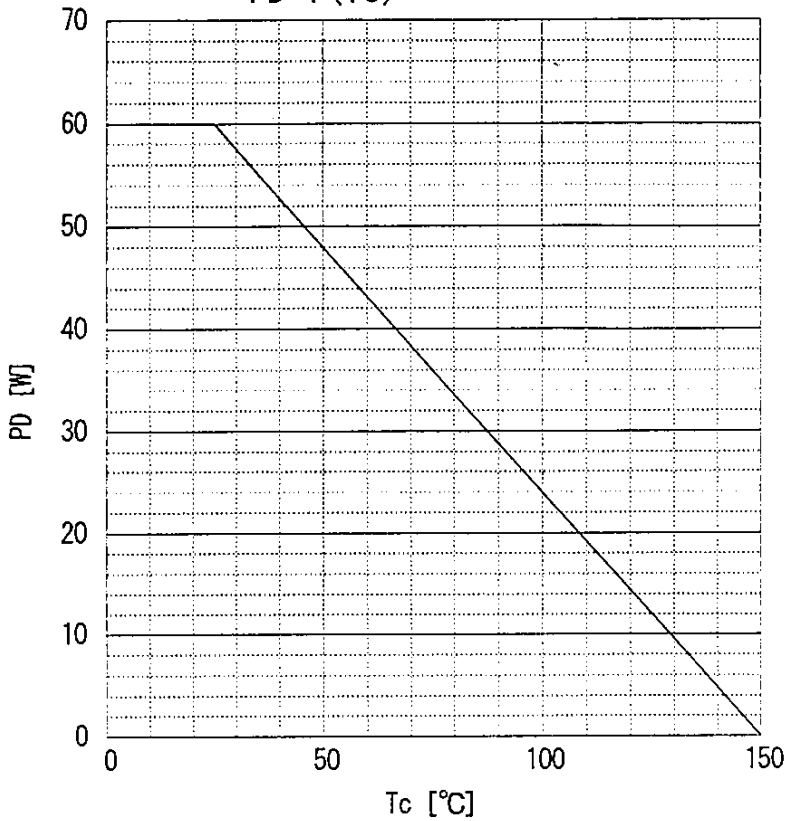
Note: 1. Guaranteed mark of avalanche ruggedness.

DIMENSIONS ARE IN MILLIMETERS.

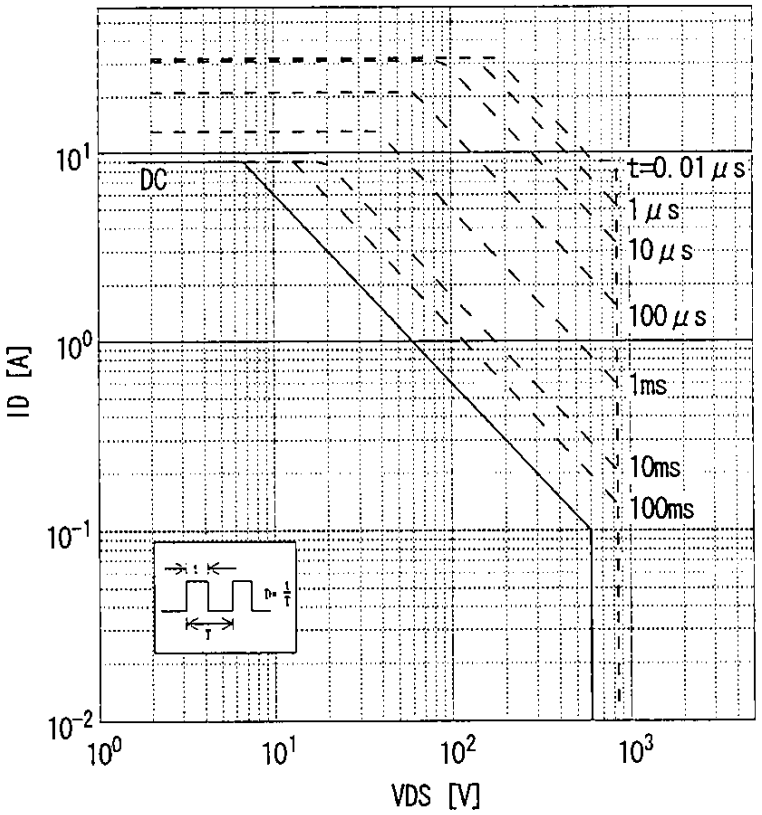
Fuji Electric Co.,Ltd.	DWG.NO.	5/12

Y 0257-R-003a

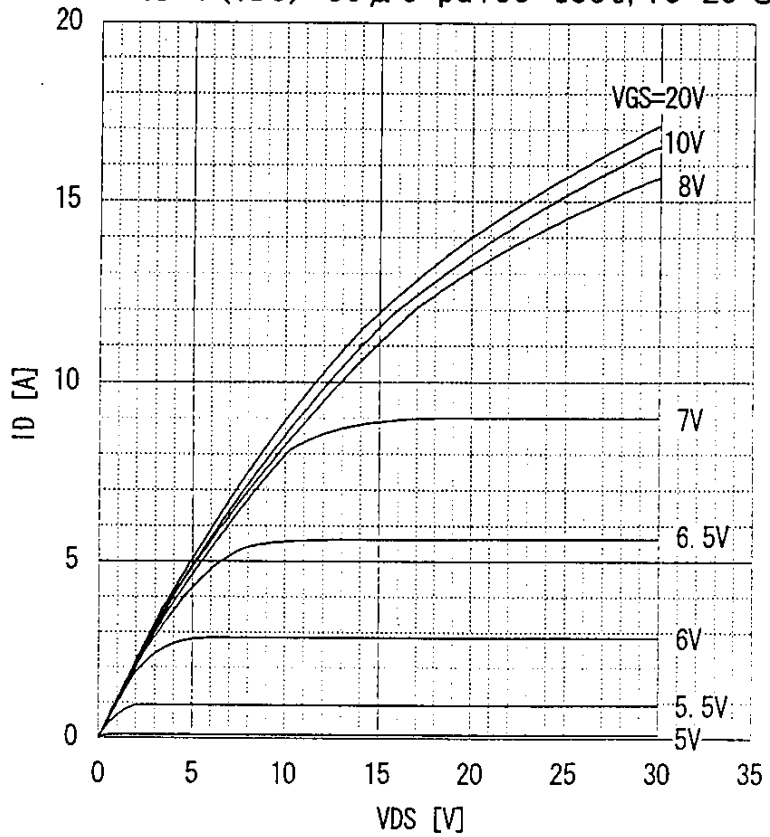
Power Dissipation
PD=f(Tc)



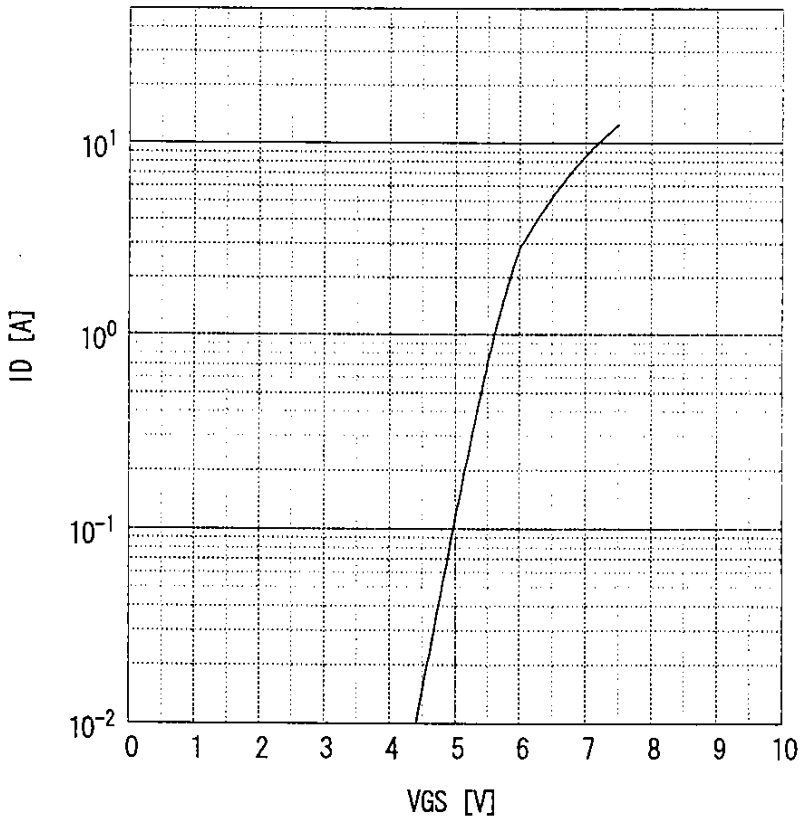
Safe operating area
ID=f(VDS) :D=0.01, Tc=25℃



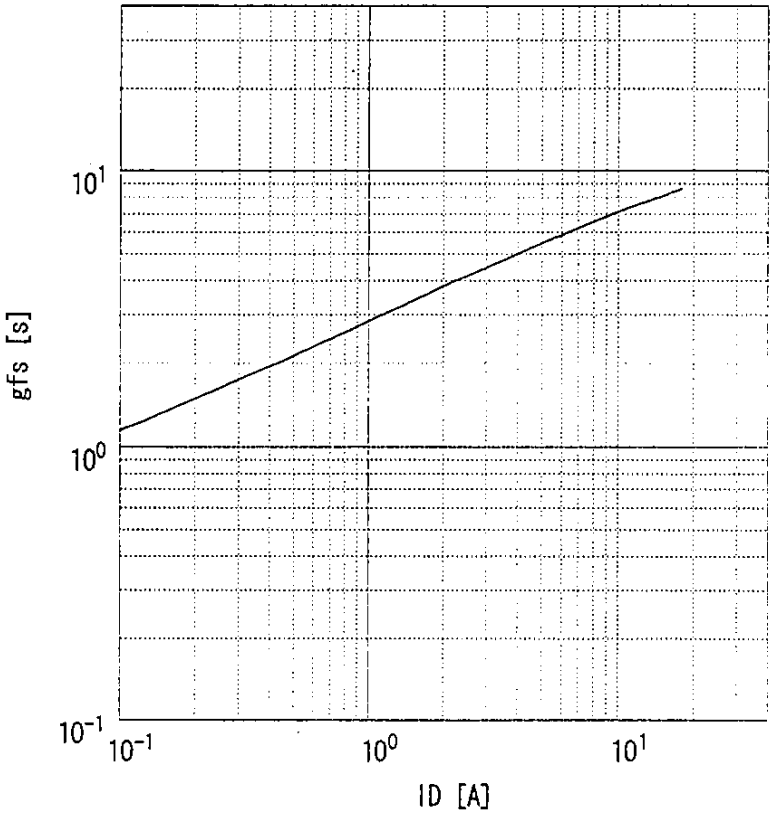
Typical output characteristics
ID=f(VDS):80μs pulse test, Tc=25℃



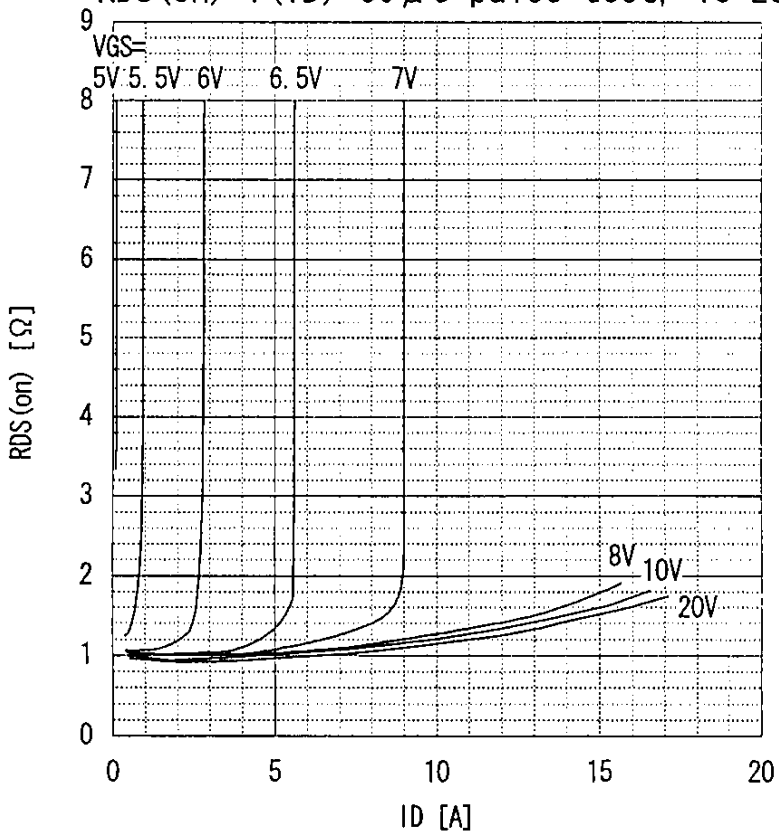
Typical transfer characteristic
ID=f(VGS):80μs pulse test, VDS=25V, Tch=25℃



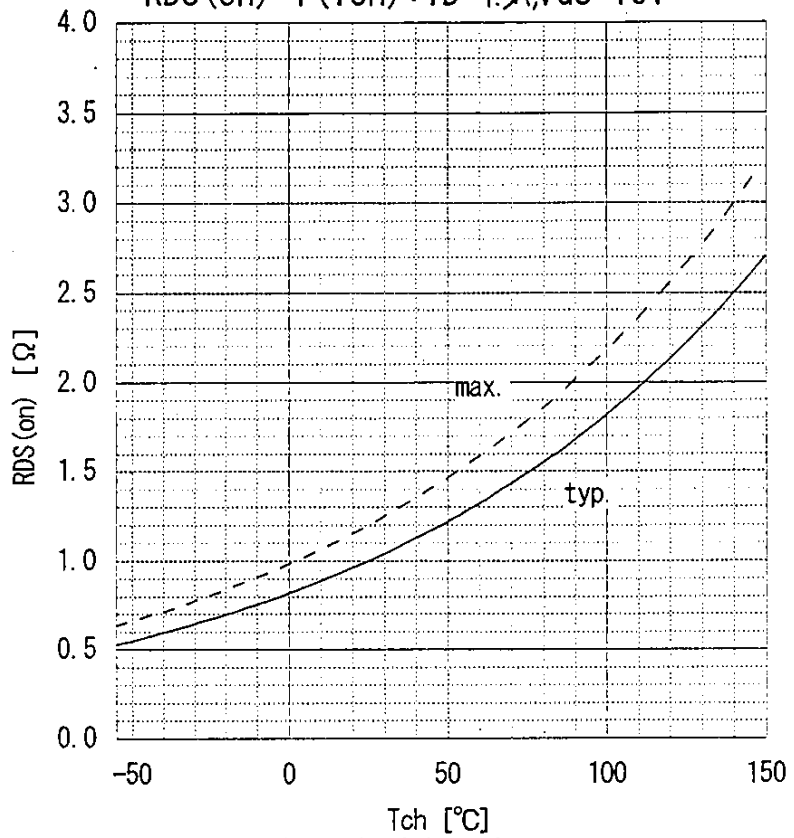
Typical forward transconductance
gfs=f(ID):80μs pulse test, VDS=25V, Tch=25℃



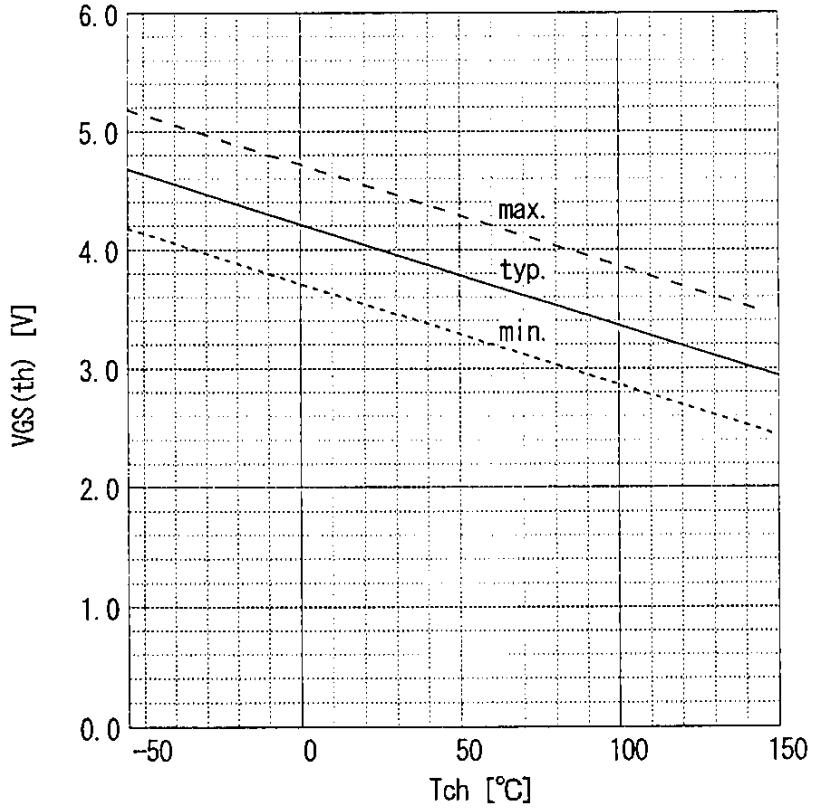
Typical drain-source on-state resistance
RDS(on)=f(ID):80μs pulse test, Tc=25℃



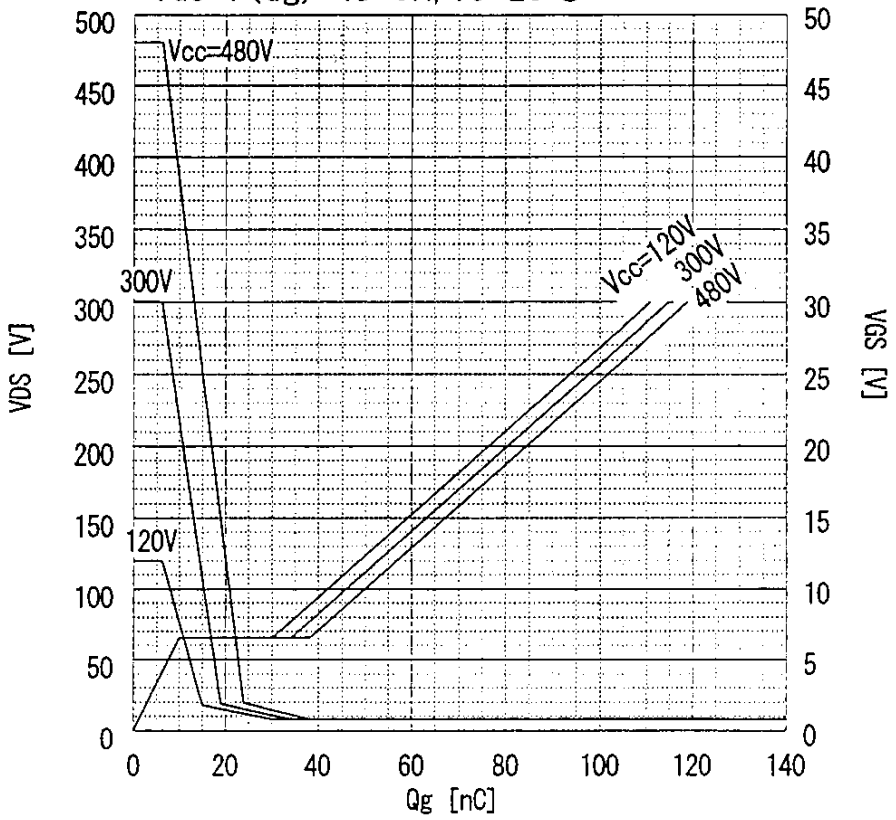
Drain-source on-state resistance
RDS(on)=f(Tch) : ID=4.5A,VGS=10V



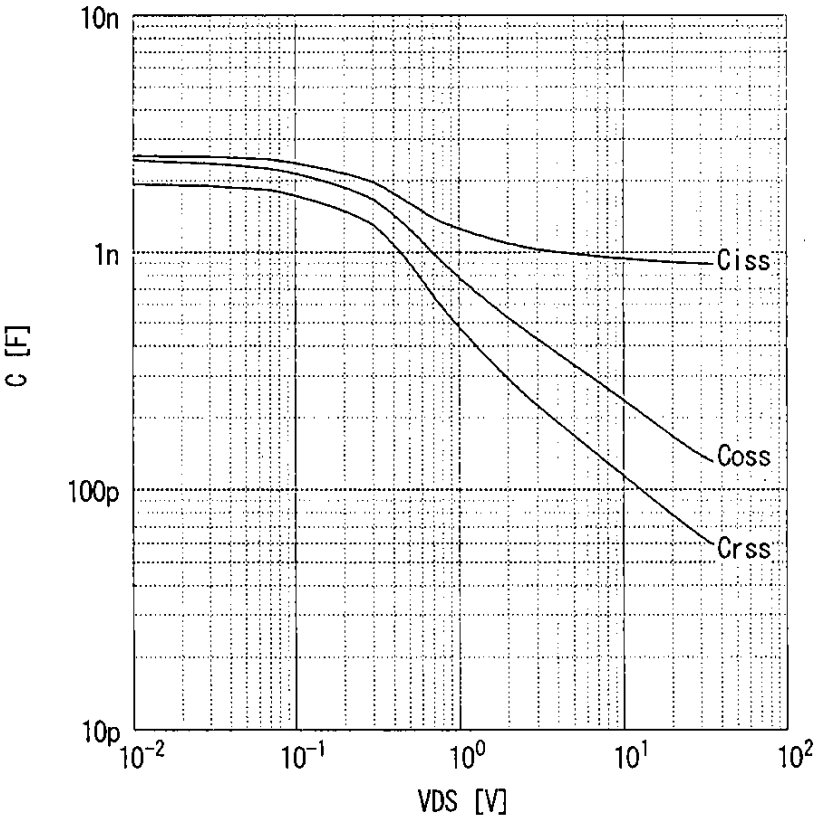
Gate threshold voltage
VGS(th)=f(Tch) : ID=1mA, VDS=VGS



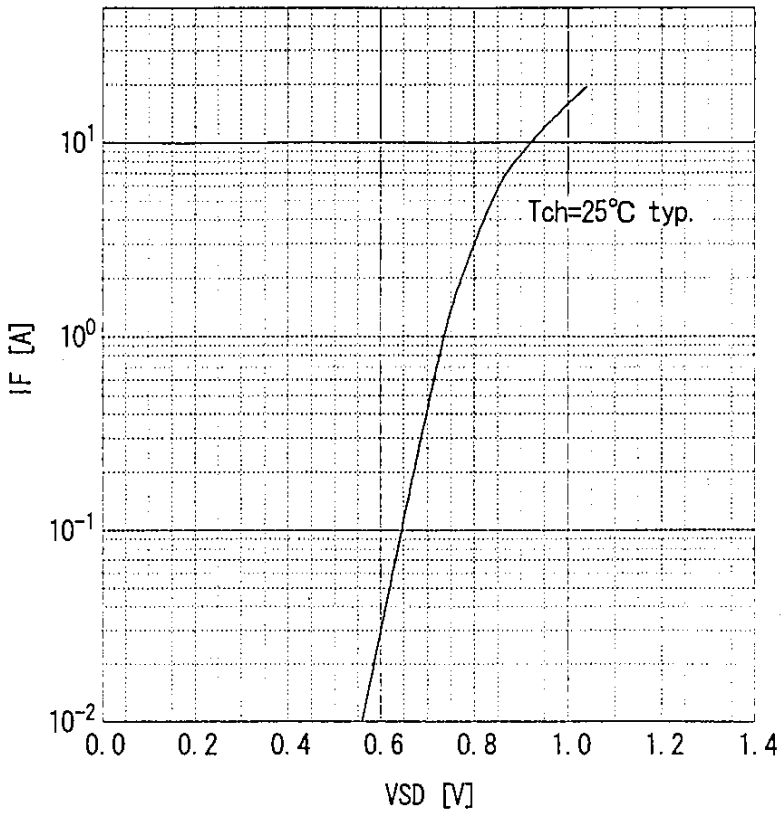
Typical gate charge characteristic
VGS=f(Qg) : ID=9A, Tc=25℃



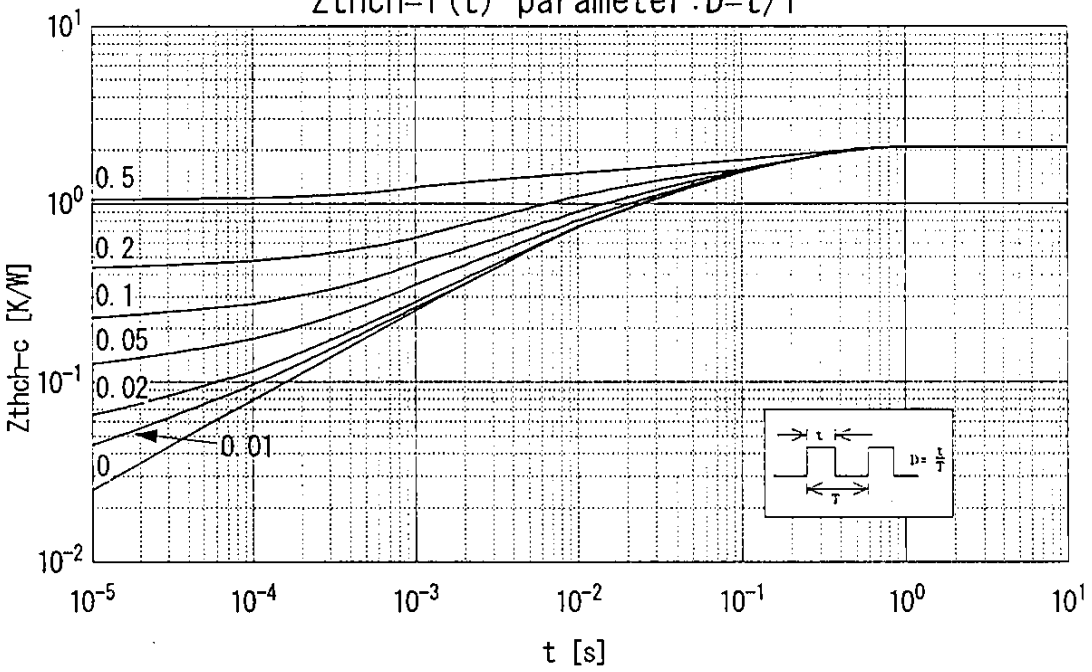
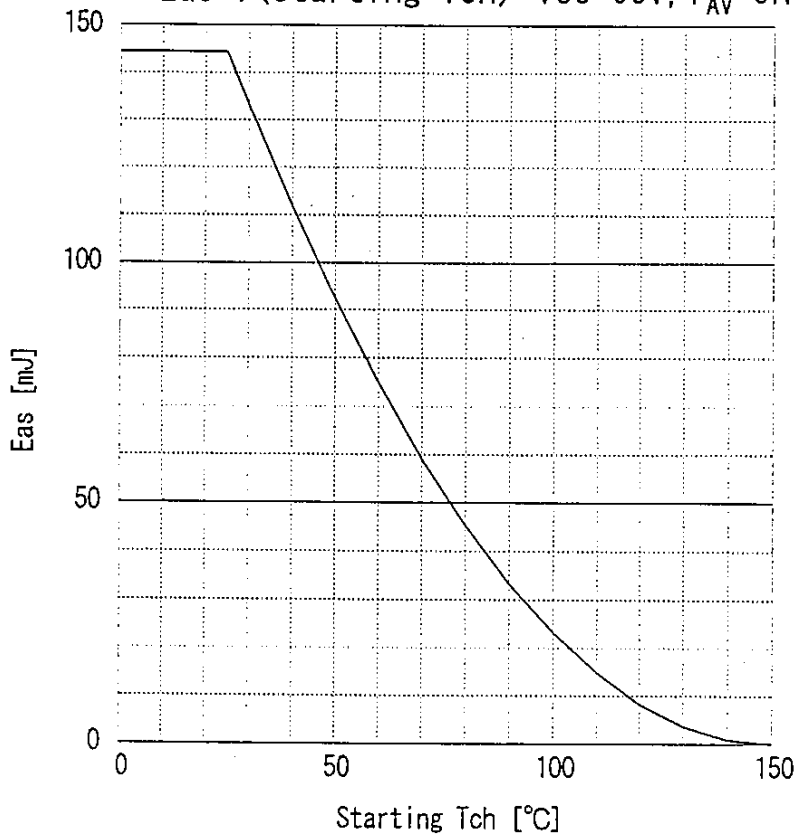
Typical capacitances
C=f(VDS) : VGS=0V, f=1MHz



Forward characteristic of reverse of diode
IF=f(VSD):80μs pules test, VGS=0V



Transient thermal impedance
Zthch=f(t) parameter:D=t/T



Avalanche energy derating
Eas=f(starting Tch):Vcc=60V, I_{AV}=9A