SPECIFICATION

Device Name : POWER MOSFET

Type Name : 2SK2879-01

Spec. No. :

Fuji Electric Co.,Ltd.
Matsumoto Factory

	DATE	NAME	APPROVED
DRAWN			
CHECKED			

Fuji Electric Co.,Ltd.

DWG.NO.

H04-004-07

1.Scope This specifies Fuji Power MOSFET 2SK2879-01

2.Construction N-Channel enhancement mode power MOSFET

3.Applications for Switching

4.Outview TO-3P 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}	500	V	
Continuous Drain Current	I_D	±20	A	
Pulsed Drain Current	I_{DP}	±80	A	
Gate-Source Voltage	V_{GS}	±30	V	
Repetitive or non-repetitive	I_{AR}	20	A	T_{ch}≦150℃
Maximum Avalanche Energy	E_{AV}	761	mJ	*1
Maximum Power Dissipation	P_D	150	W	
Operating and Storage	T_{ch}	150	℃	
Temperature range	T_{stg}	-55 to +150	℃	

*1 L=3.49mH,Vcc=50V

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		500	-	-	V
Gate Threshold Voltage	$V_{GS}(th)$	I_D=1mA V_{DS}=V_{GS}		2.5	3.0	3.5	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V 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}=±30V V_{DS}=0V		-	10	100	nA
Drain-Source On-State Resistance	$R_{DS}(on)$	ID=10A VGS=10V		-	0.33	0.38	Ω

Dynamic Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Forward Transconductance	g_{fs}	I_D=10A V_{DS}=25V	7.5	15	-	S
Input Capacitance	Ciss	V_{DS}=25V	-	2200	3300	pF
Output Capacitance	Coss	V_{GS}=0V	-	330	500	pF
Reverse Transfer Capacitance	Crss	f=1MHz	-	140	210	pF
Turn-On Time	td(on)	V_{cc}=300V	-	20	30	ns
	tr	V_{GS}=10V	-	130	200	ns
Turn-Off Time	td(off)	I_D=20A	-	160	240	ns
	tf	R_{GS}=10Ω	-	105	160	ns

Reverse Diode

Description	Symbol	Conditions	min.	typ.	max.	Unit
Avalanche Capability	I_{AV}	L=3.49mH Tch=25℃ See Fig.1 and Fig.2	20	-	-	A
Diode Forward On-Voltage	V_{SD}	I_F=2×I_{DR} V_{GS}=0V T_{ch}=25℃	-	1.1	1.65	V
Reverse Recovery Time	trr	I_F=I_{DR} -di/dt=100A/μs T_{ch}=25℃	-	650	-	ns
Reverse Recovery Charge	Qrr		-	10.0	-	μc

7.Thermal Resistance

Description	Symbol	min.	typ.	max.	Unit
Channel to Case	Rth(ch-c)			0.83	℃/W
Channel to Ambient	Rth(ch-a)			35.0	℃/W

Fig.1 Test circuit

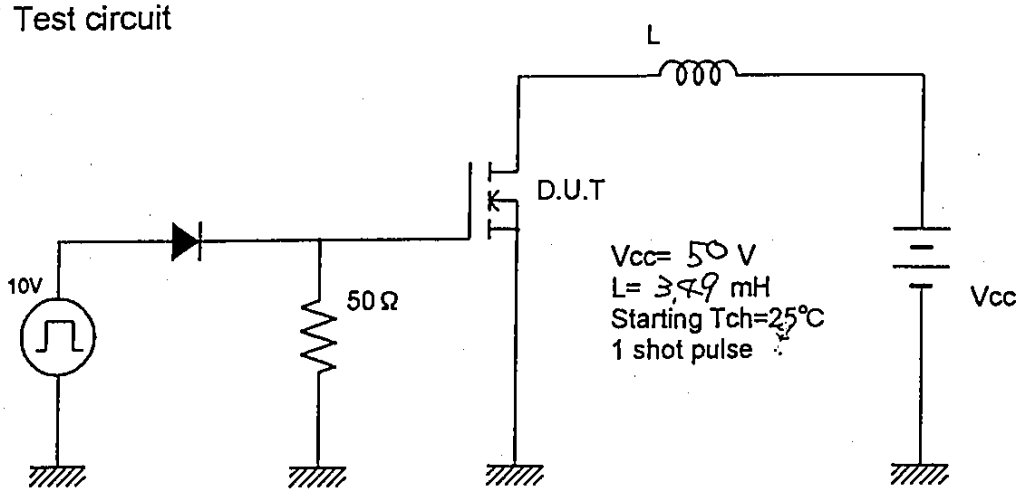
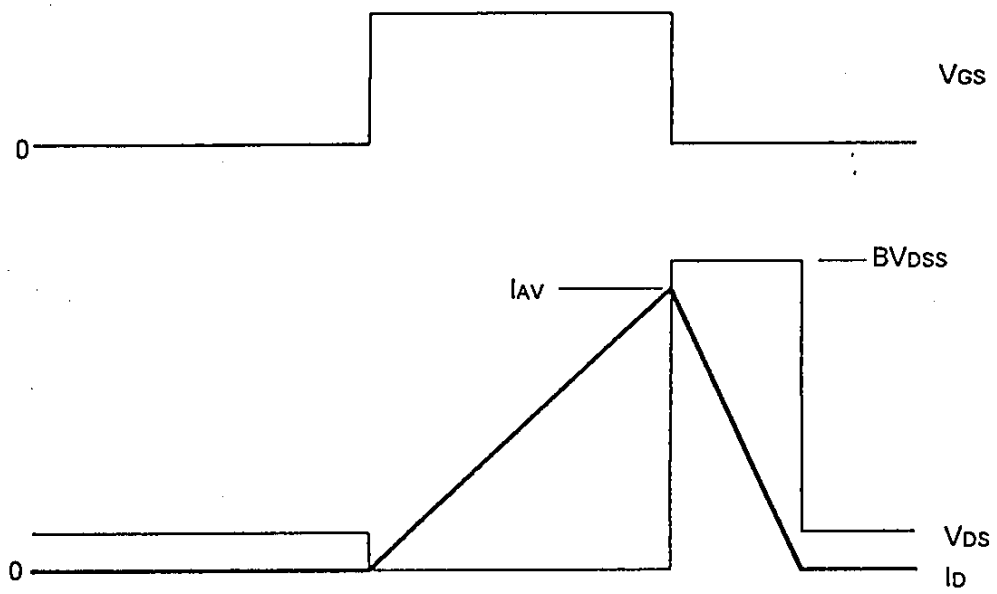
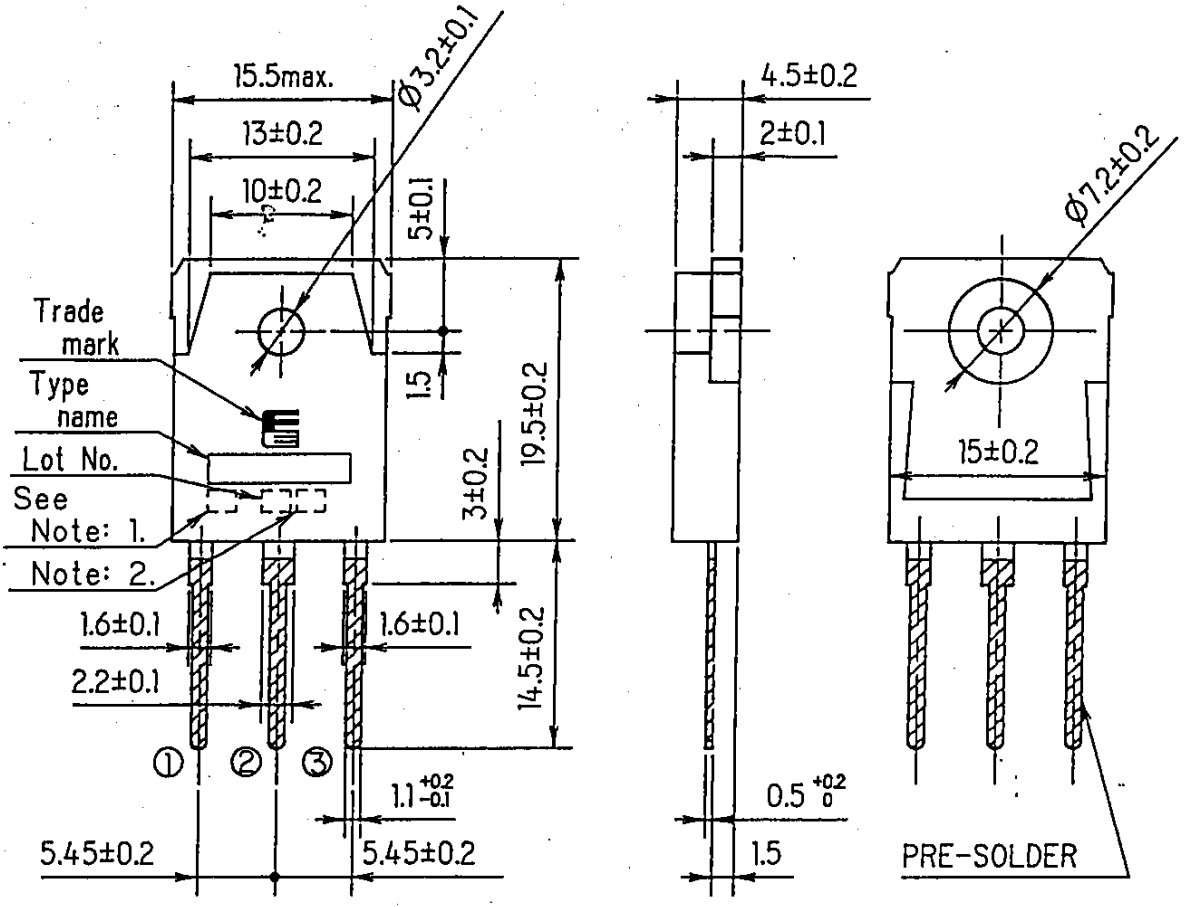


Fig.2 Operating waveforms

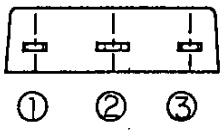


FUJI POWER MOS FET

TYPE :



DIMENTIONS ARE IN MILLIMETERS.



CONNECTION

① GATE
② DRAIN
③ SOURCE

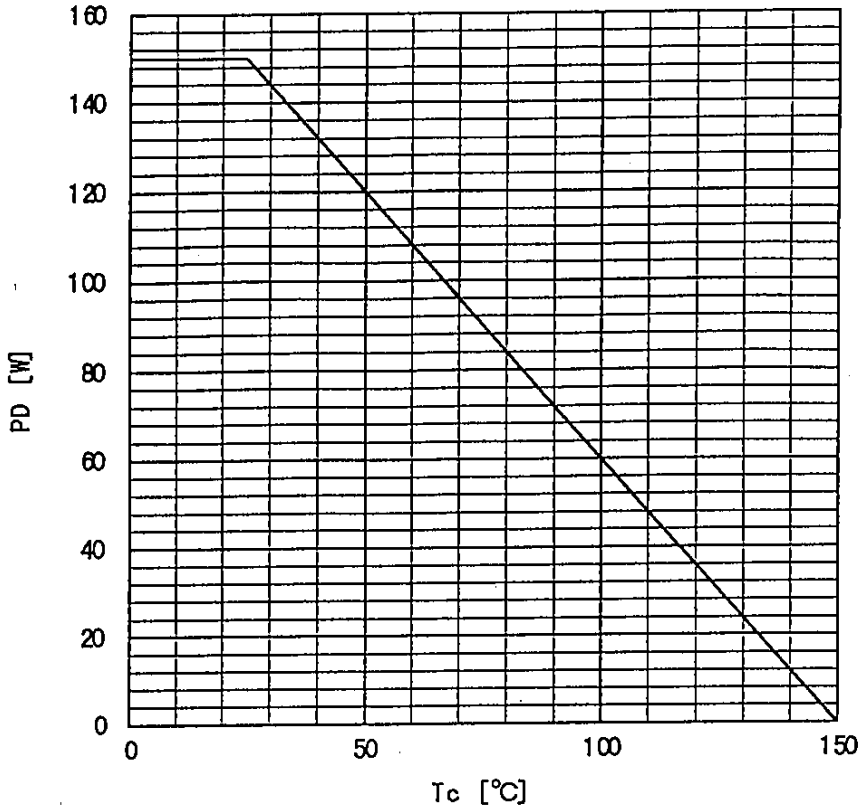
Note: 1. $V_{GS(th)}$ selected code.

Note: 2. Guaranteed mark of avalanche ruggedness.

JEDEC : TO-247
EIAJ : SC-65

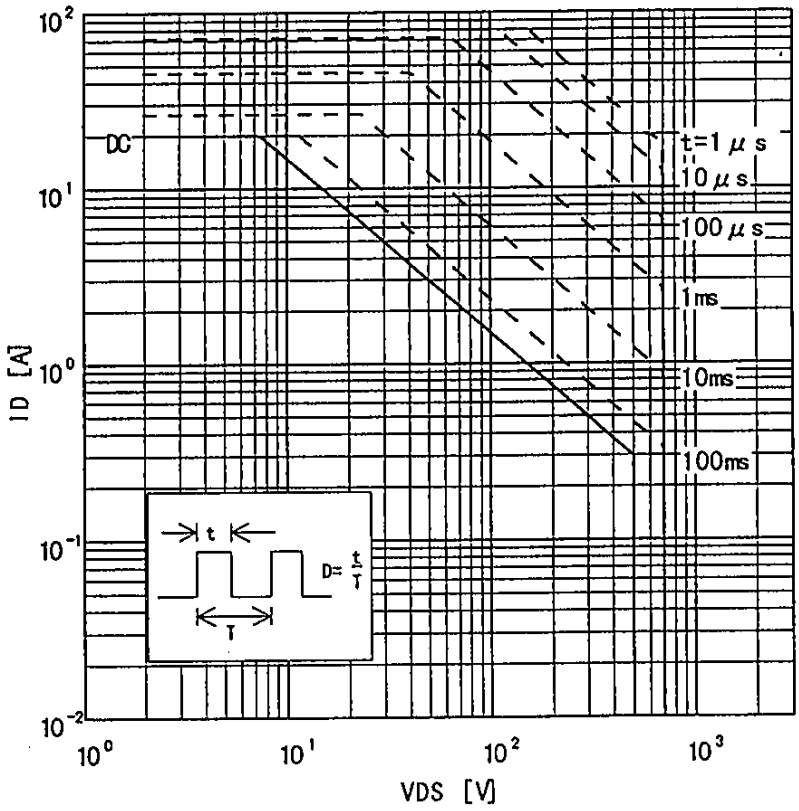
Power Dissipation

PD=f(Tc)



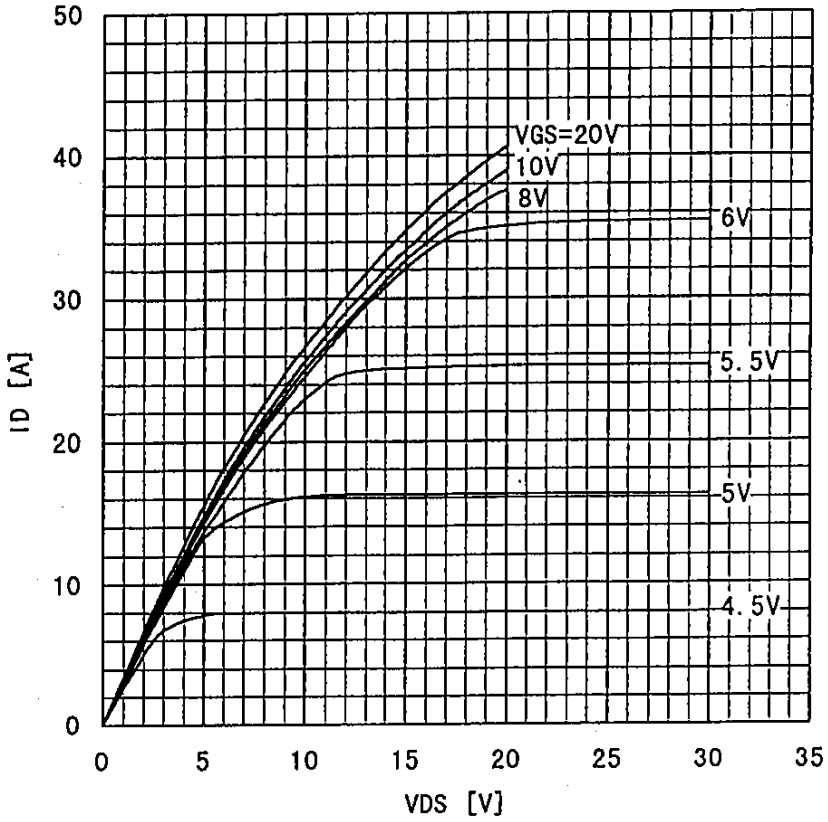
Safe operating area

ID=f(VDS) : D=0.01, Tc=25°C



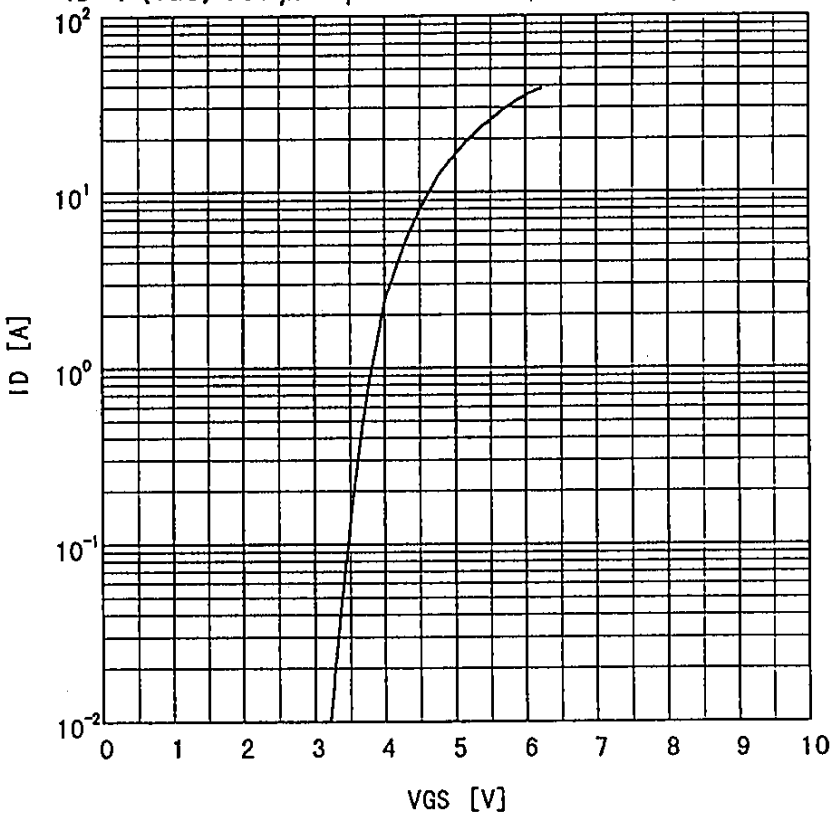
Typical output characteristics

ID=f(VDS) : 80μs pulse test, Tc=25°C



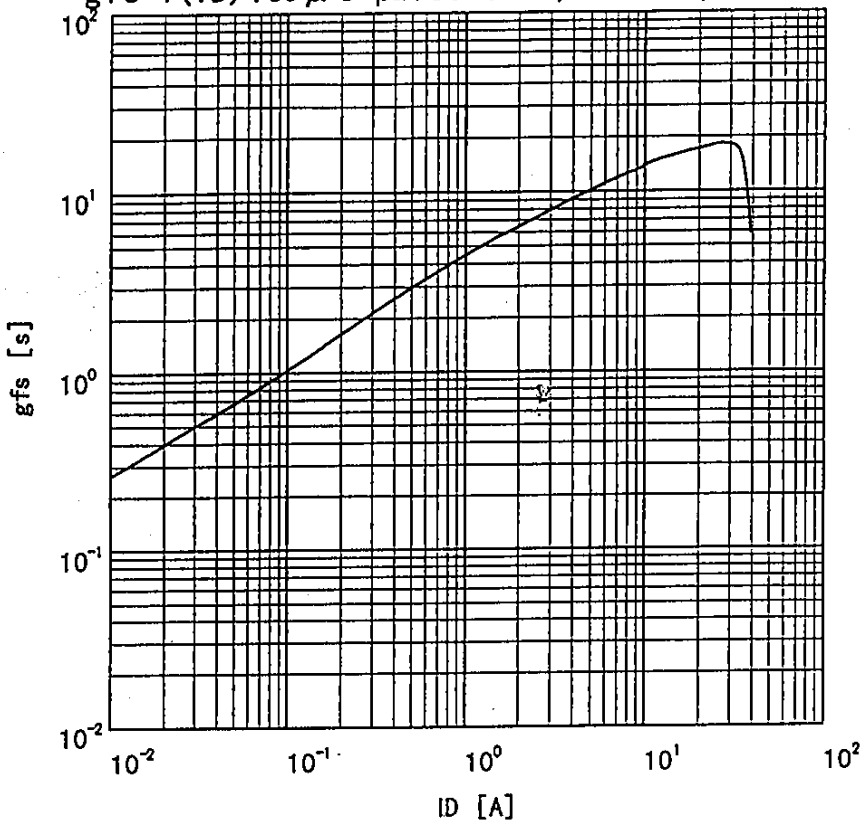
Typical transfer characteristic

ID=f(VGS) : 80μs pulse test, VDS=25V, Tch=25°C



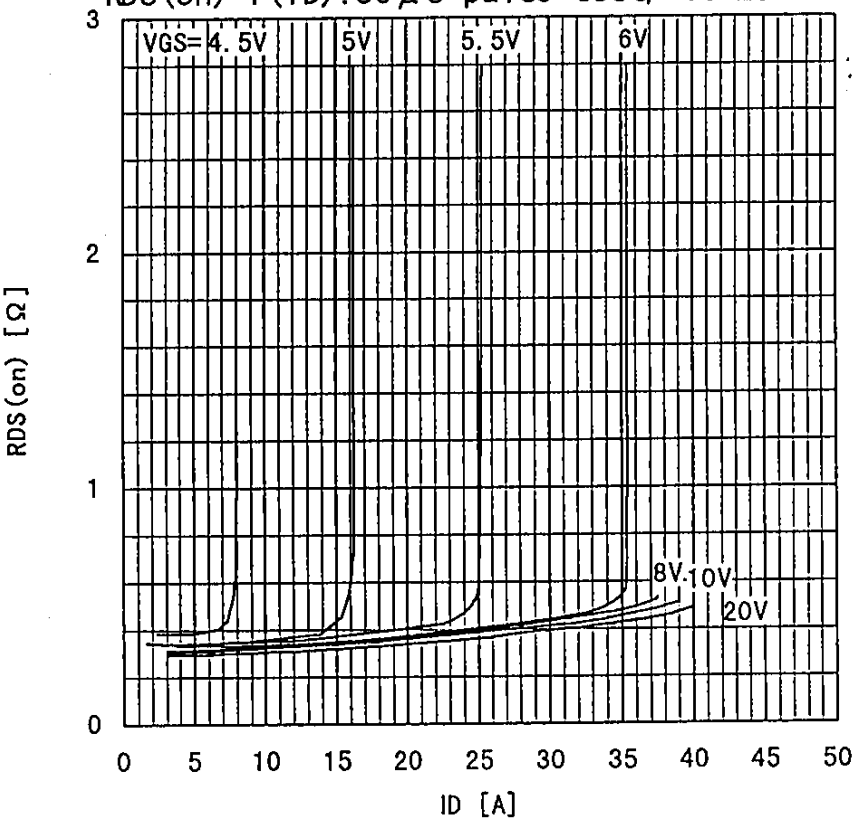
Typical forward transconductance

gfs=f(ID) : 80 μ s pulse test, VDS=25V, Tch=25°C



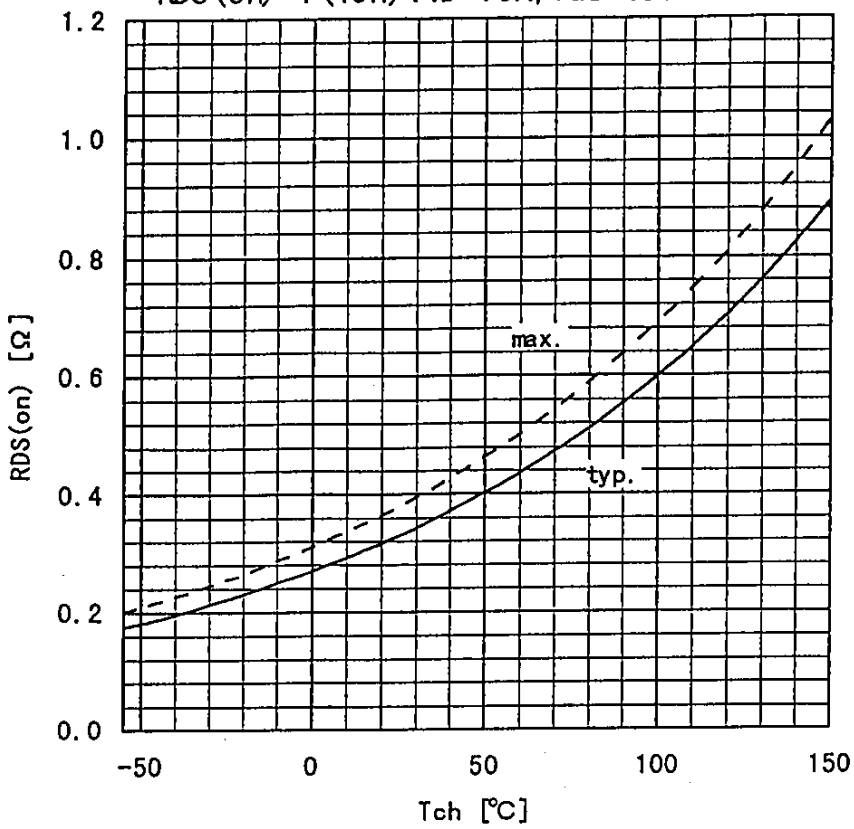
Typical drain-source on-state resistance

RDS(on)=f(ID) : 80 μ s pulse test, Tc=25°C



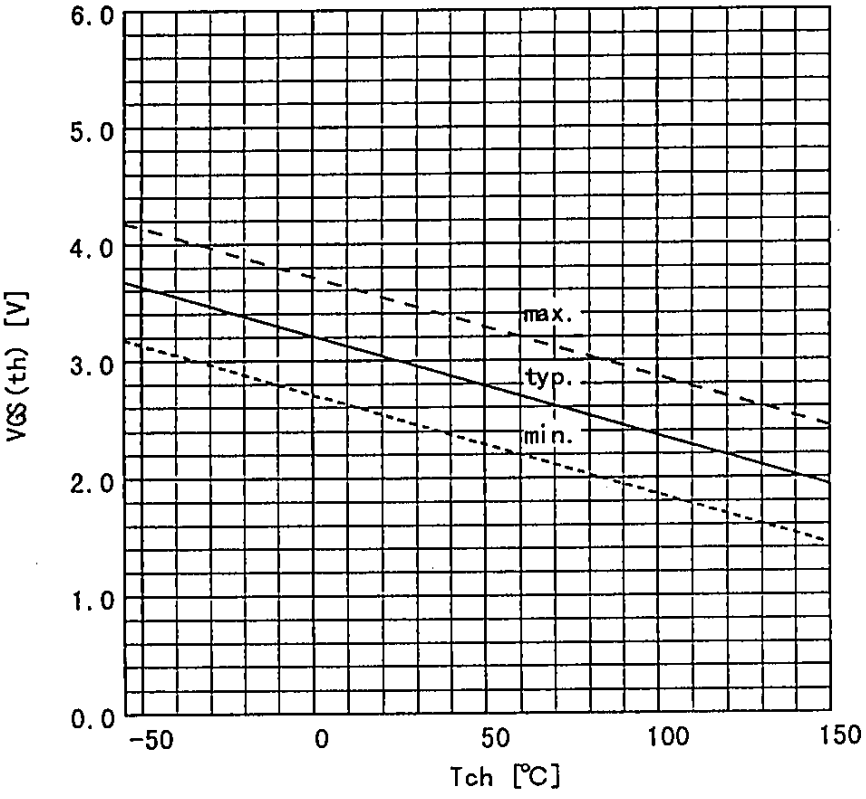
Drain-source on-state resistance

RDS(on)=f(Tch) : ID=10A, VGS=10V



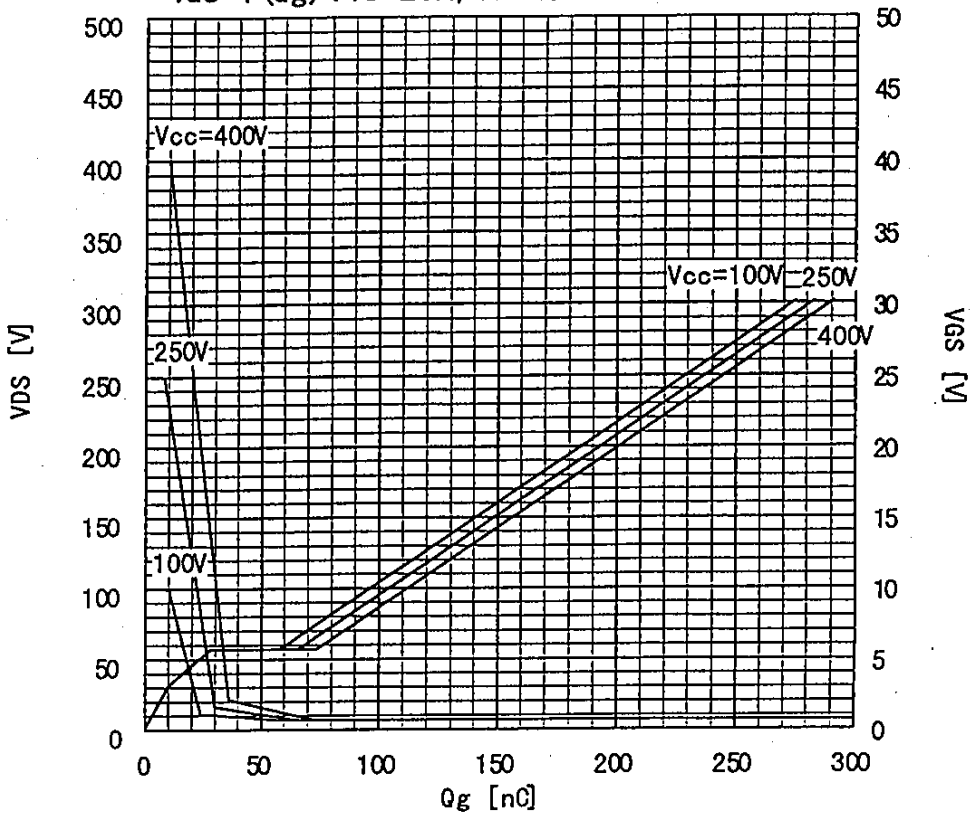
Gate threshold voltage

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



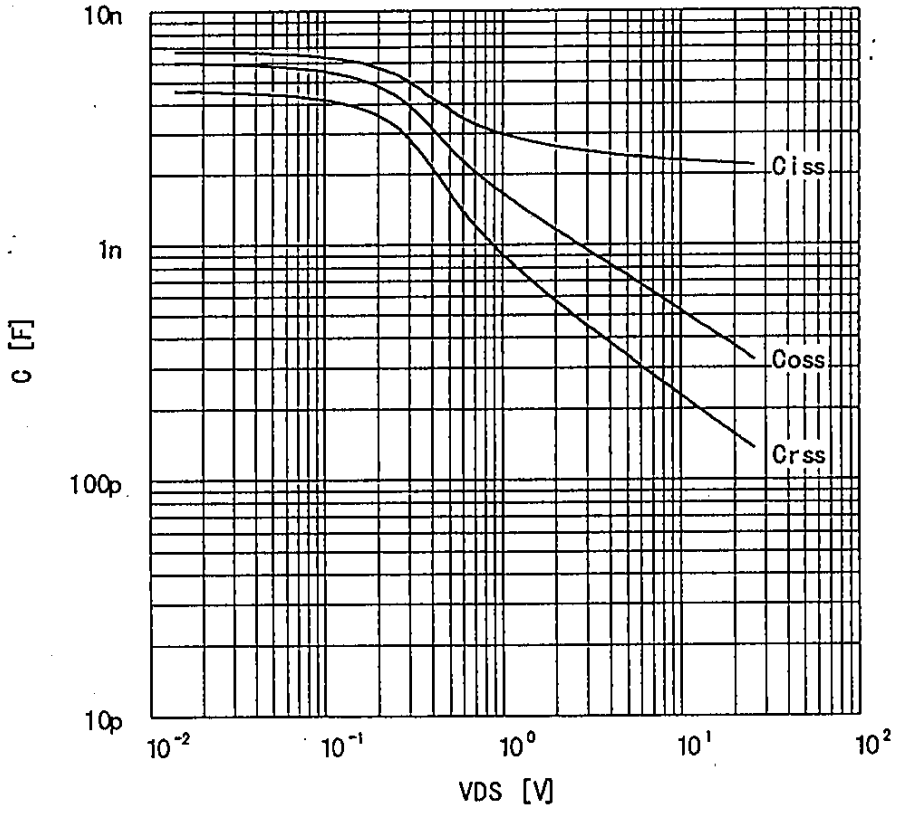
Typical gate charge characteristic

VGS=f(Qg) : ID=20A, Tc=25°C



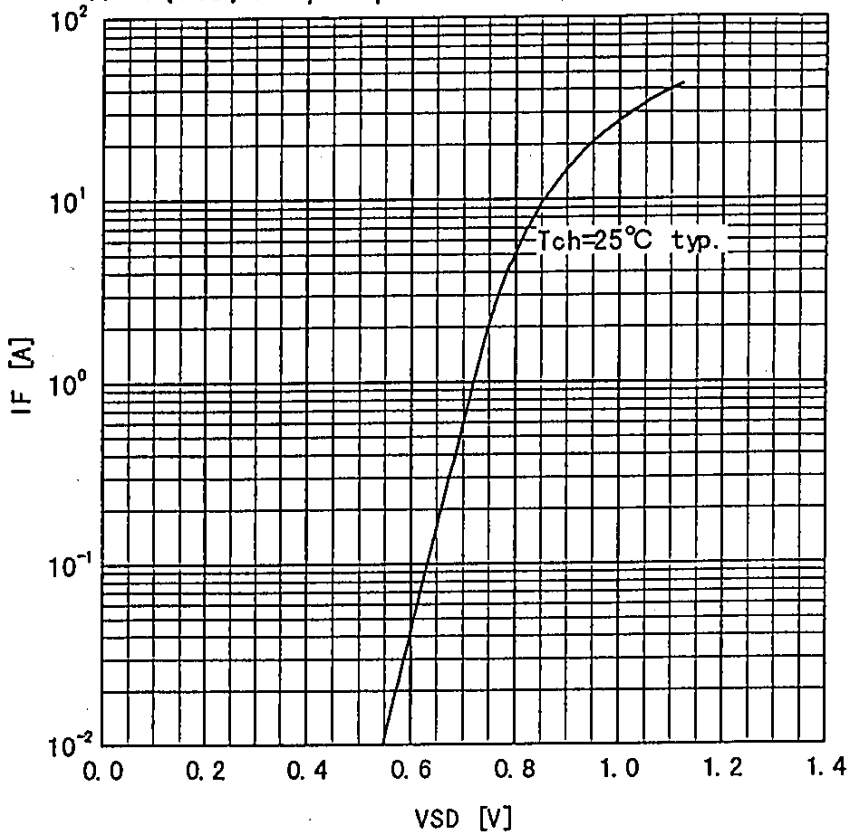
Typical capacitances

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



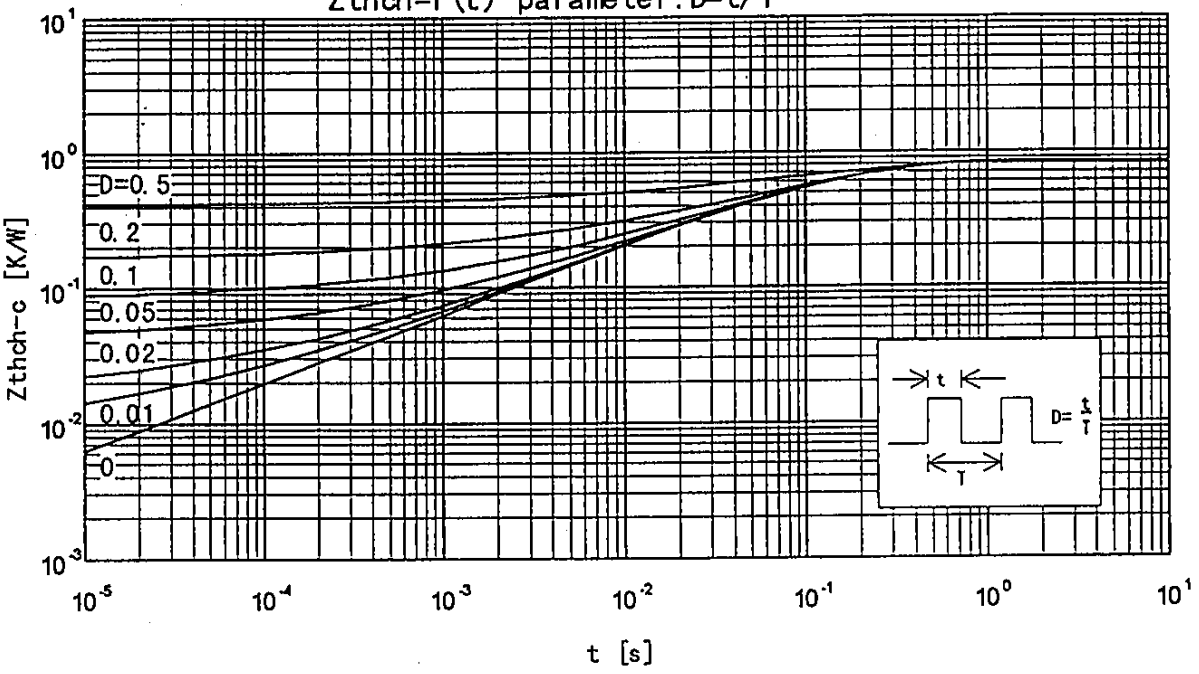
Forward characteristic of reverse of diode

IF=f(VSD) :80 μ s pules test, VGS=0V



Transient thermal impedance

Zthch=f(t) parameter: D=t/T



Avalanche energy derating

Eas=f(starting Tch):Vcc=50V, I_{AV}=20A