SPECIFICATION

DEVICE NAME : Power MOSFET

TYPE NAME : 2SK2834-01

SPEC. No. :

Fuji Electric Co., Ltd.
Matsumoto Factory

This Specification is subject to change without notice.

	DATE	NAME	APPROVED
DRAWN			
CHECKED			

Fuji Electric Co.,Ltd.

DWG.NO.

1. Scope
This specifies Fuji power MOSFET 2SK2834-01

2. Construction N-channel enhancement mode power MOSFET

3. Application 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	
Drain-source voltage	V_{DS}	600	V	
Continuous Drain current	I_D	± 9	A	
Pulsed drain current	I_{Dpulse}	± 32	A	
Gate-source voltage	V_{GS}	± 35	V	
Repetitive or non-repetitive	I_{AR}	9	V	Tch ≦150 ℃
Avalanche energy	E_{AS}	162.3	mJ	See page 12/12※
Maximum power dissipation	P_D	80	W	
Operating and storage	T_{ch}	150	℃	
temperature range	T_{stg}	-55 ～ +150	℃	

※ L=3.67mH 、Vcc=60V

6. Electrical characteristics at Tc=25℃ (unless otherwise specified)
Static ratings

Description	Symbol	Conditions		Characteristics			Unit
				Min.	Typ.	Max.	
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
	I_{DSS}		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	Characteristics			Unit
			Min.	Typ.	Max.	
Forward transconductance	gfs	I_D =4.5A V_{DS}= 25V	2.5	5.0		S
Input capacitance	Ciss	V_{DS}=25V V_{GS}= 0V f =1MHz		900	1400	pF
Output capacitance	Coss			150	230	pF
Reverse transfer capacitance	Crss			70	110	pF
Turn-on time	td(on)	V_{CC}=300V V_{GS}= 10V I_D = 9A R_{GS}= 10Ω		25	40	ns
	tr			70	110	ns
Turn-off time	td(off)			60	90	ns
	tf			35	60	ns

Reverse diode

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Avalanche capability	I_{AV}	L =3.67mH, T_{ch}=25℃ *See Fig.1 and 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	t_{rr}	I_F = I_{DR} V_{GS}=0V -dI_F/dt=100A/μs T_{ch}=25℃		550		ns
Reverse recovery charge	Q_{rr}			7.0		μC

7. Thermal resistance

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Thermal resistance	$R_{th(ch-c)}$				1.56	℃/W
	$R_{th(ch-a)}$				35.0	℃/W

Fig.1 Test circuit

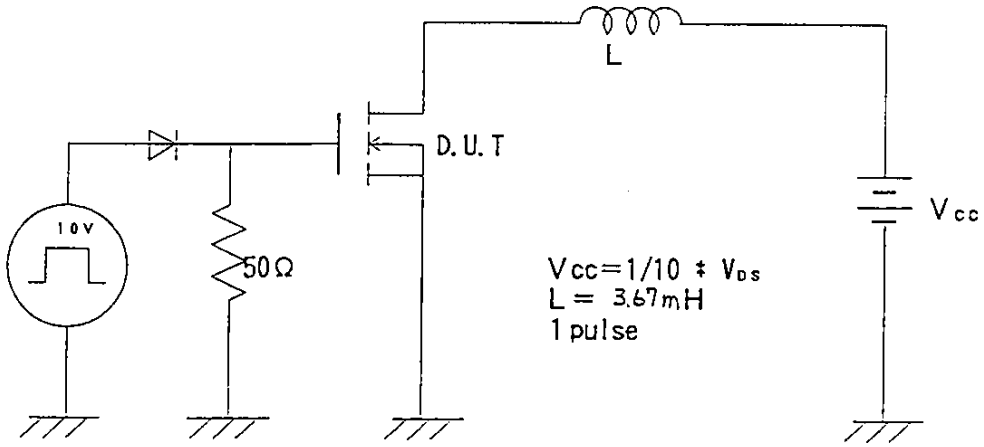
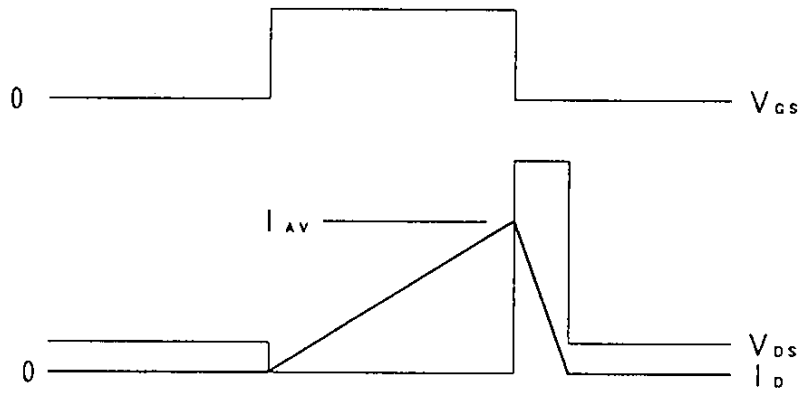
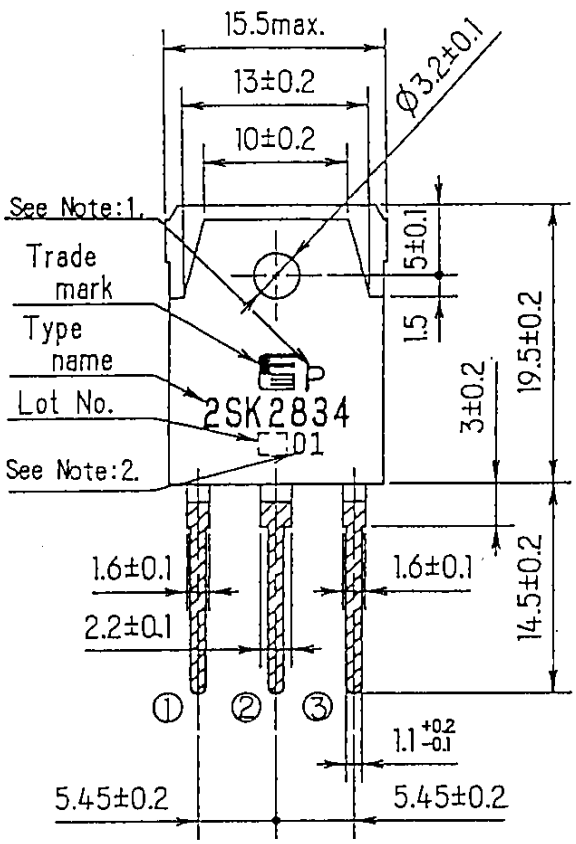


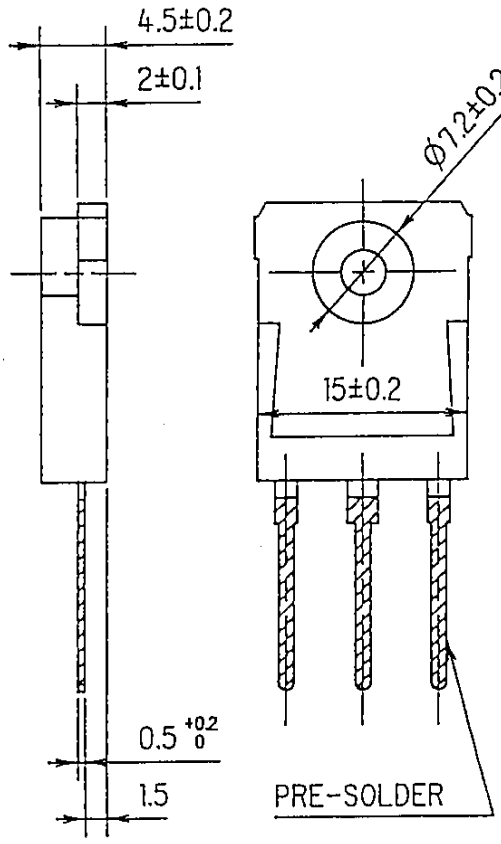
Fig.2 Operating waveforms



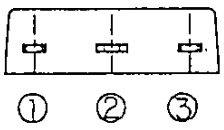
FUJI POWER MOS FET

TYPE : 2SK2834-01P





DIMENSIONS ARE IN MILLIMETERS.



CONNECTION

① GATE
② DRAIN
③ SOURCE

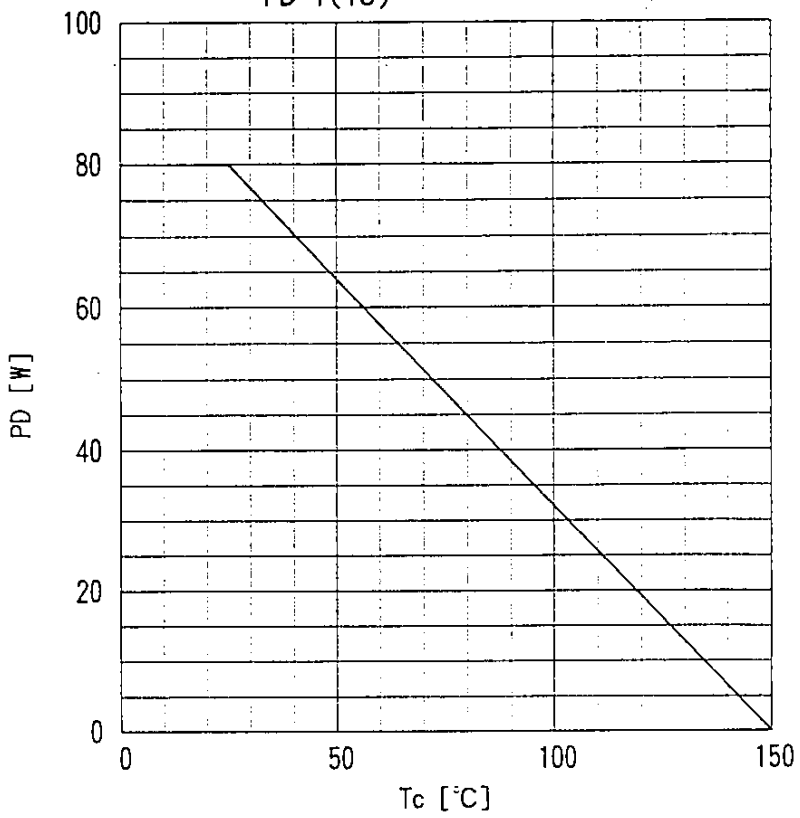
Note:1. Country of origin mark.
No mark is Made in JAPAN.
「P」 is Made in PHILIPPINES.

2. Guaranteed mark of avalanche ruggedness.

JEDEC : TO-247
EIAJ : SC-65

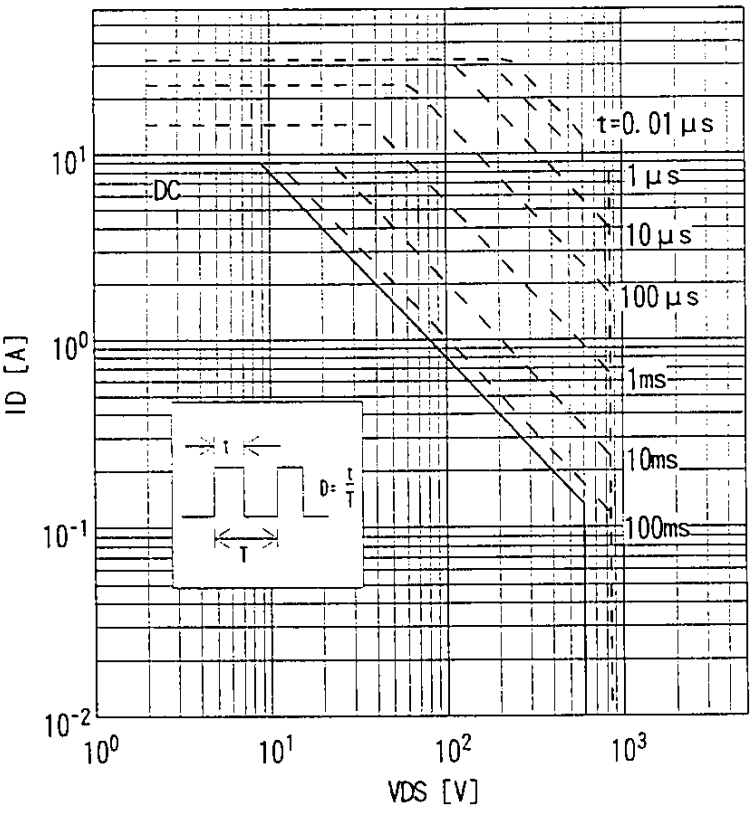
Power Dissipation

PD=f(Tc)

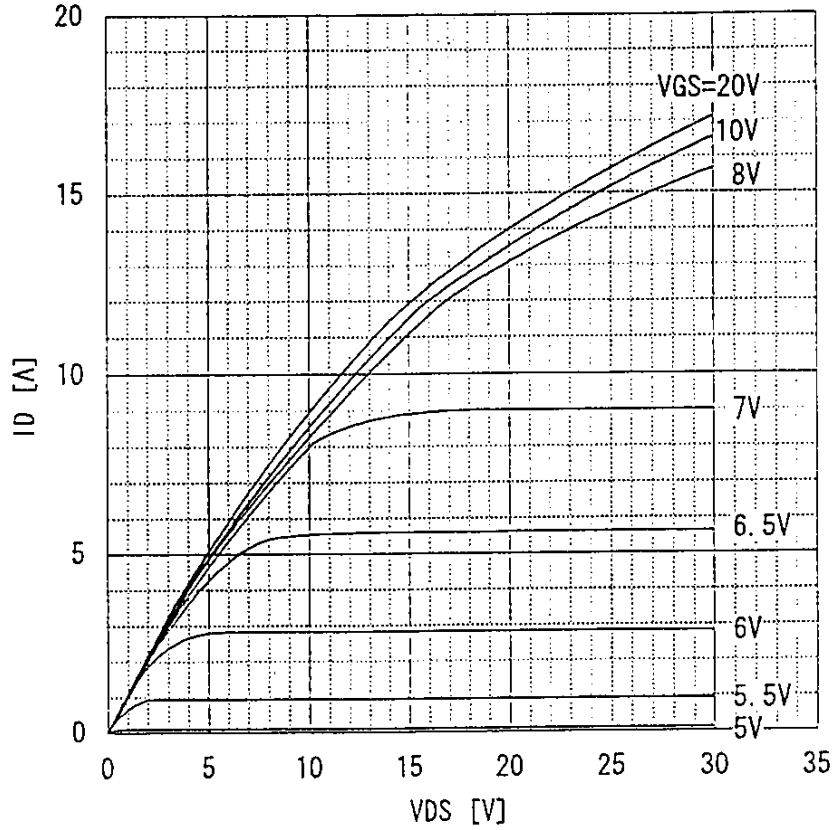


Safe operating area

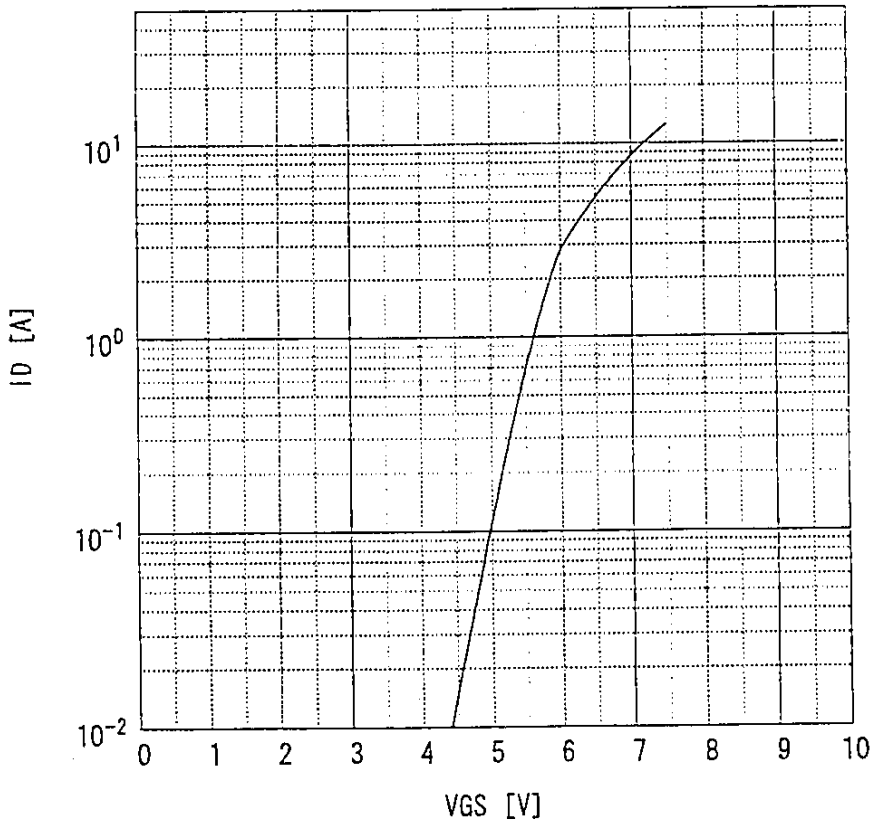
ID=f(VDS):D=0.01, Tc=25°C



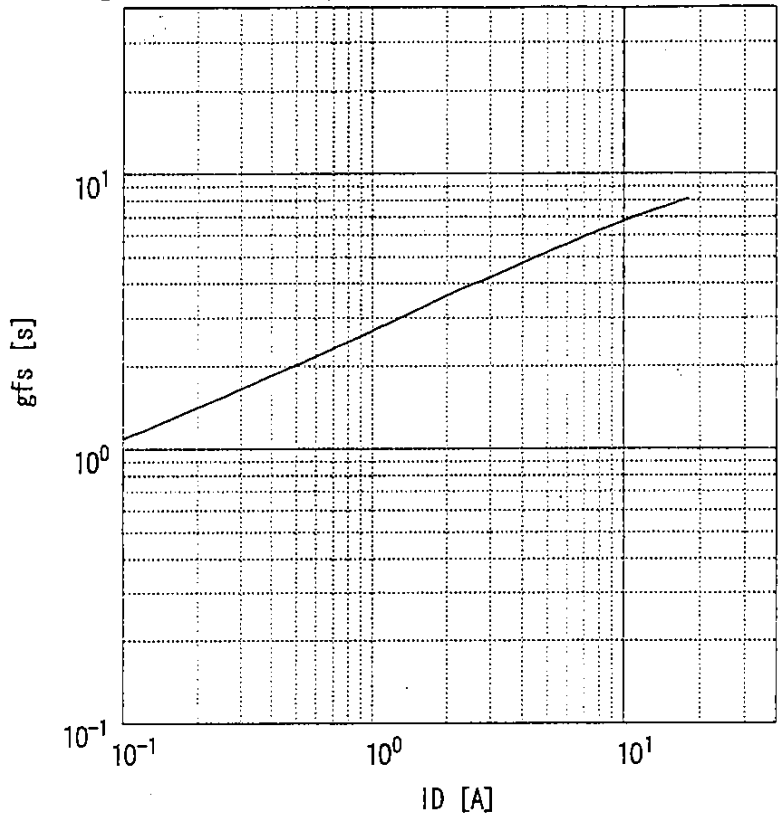
Typical output characteristics
ID=f(VDS):80μs pulse test, Tc=25℃



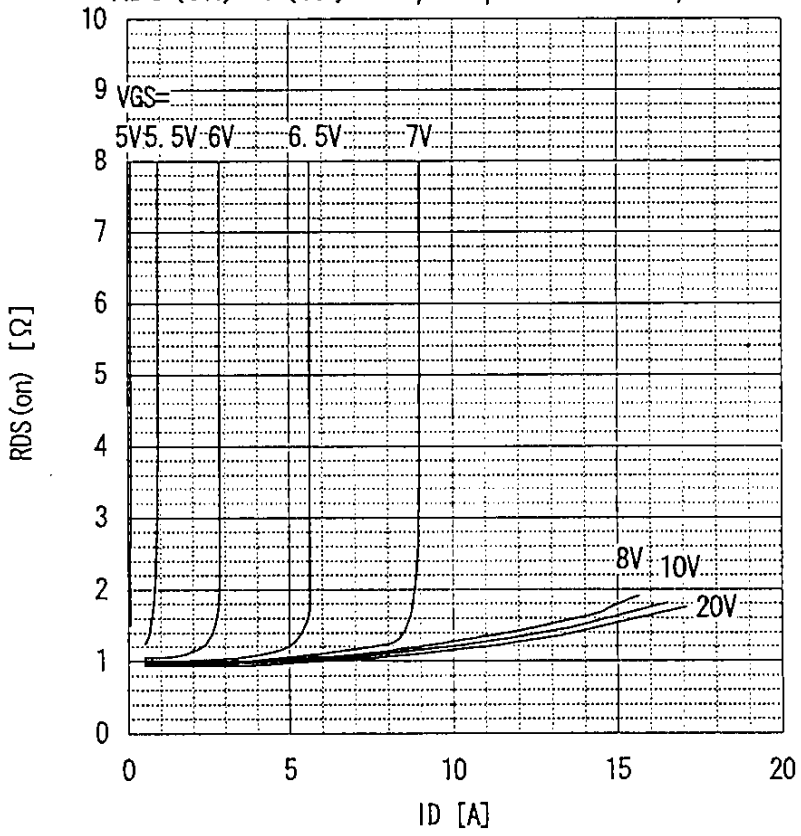
Typical transfer characteristic
ID=f(VGS):80μs pulse test, VDS=25V, Tch=25℃



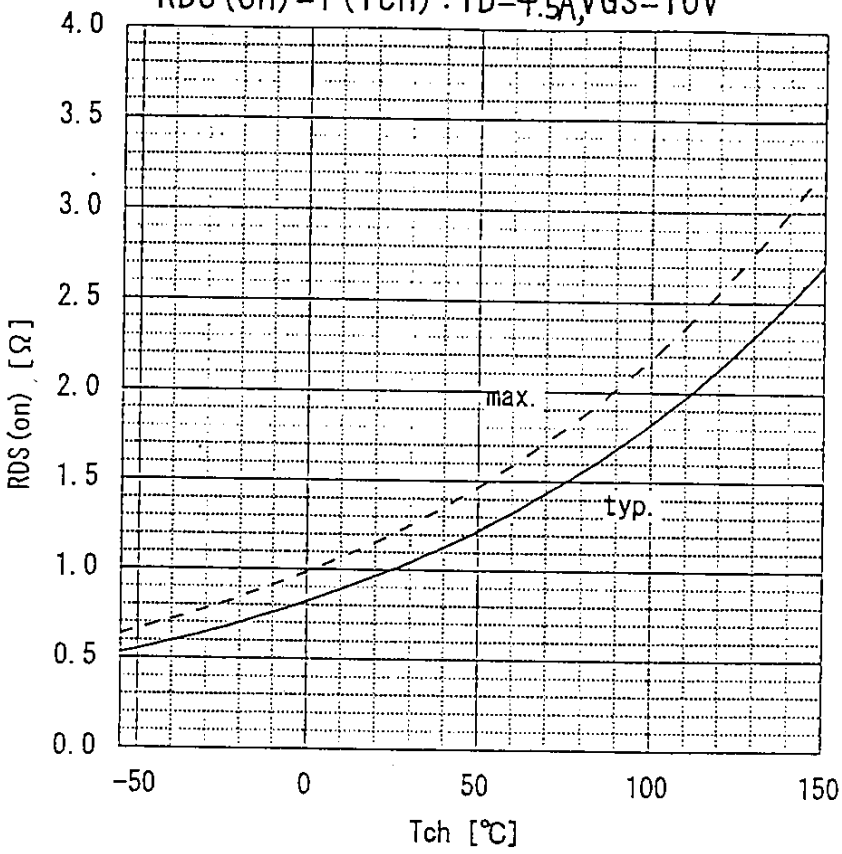
Typical forward transconductance
gfs=f(ID):80μs pulse test, VDS=25V, Tch=25℃



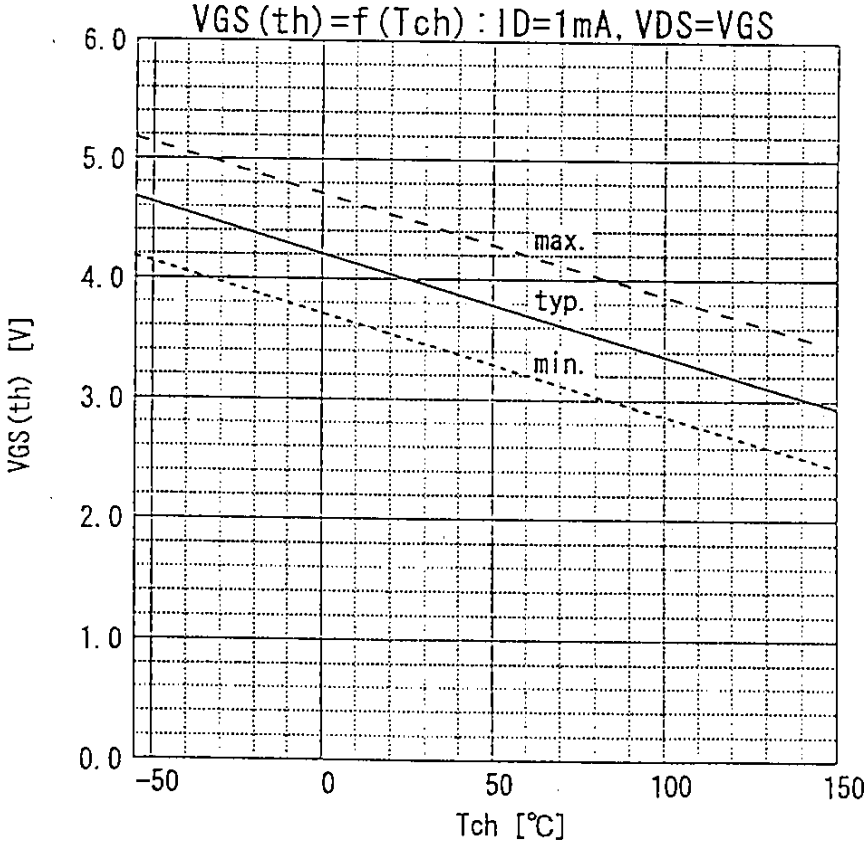
Typical drain-source on-state resistance
RDS(on)=f(ID):80μs pulse test, Tc=25℃



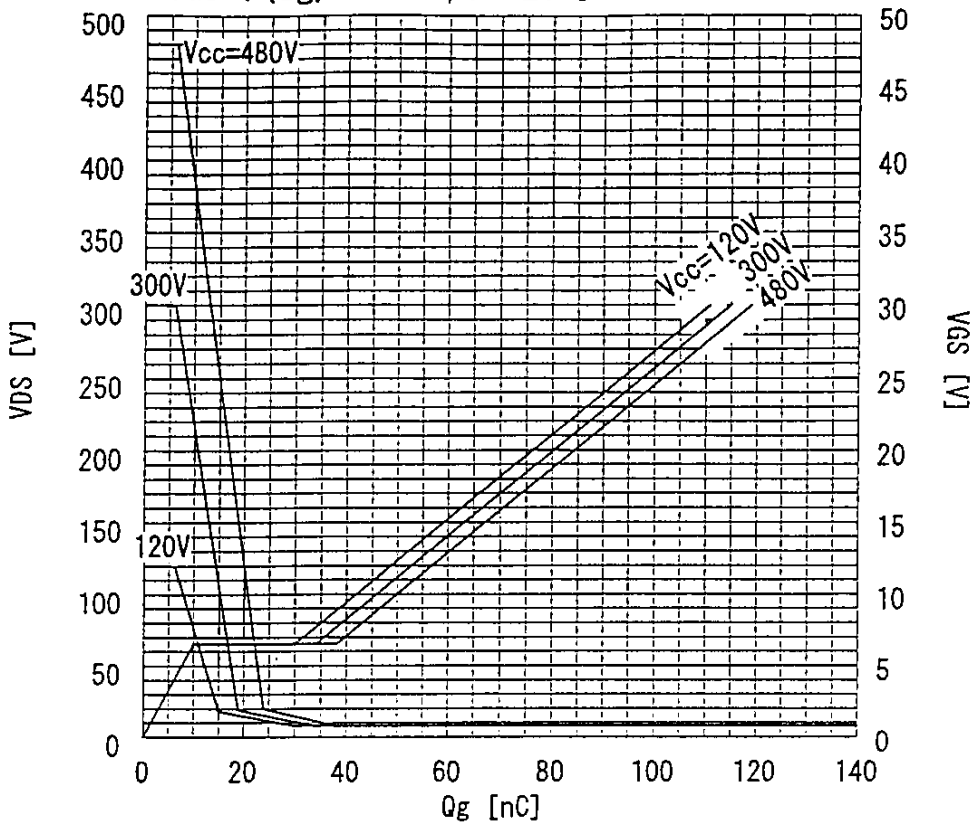
Drain-source on-state resistance
RDS(on)=f(Tch) : ID=4.5A, VGS=10V



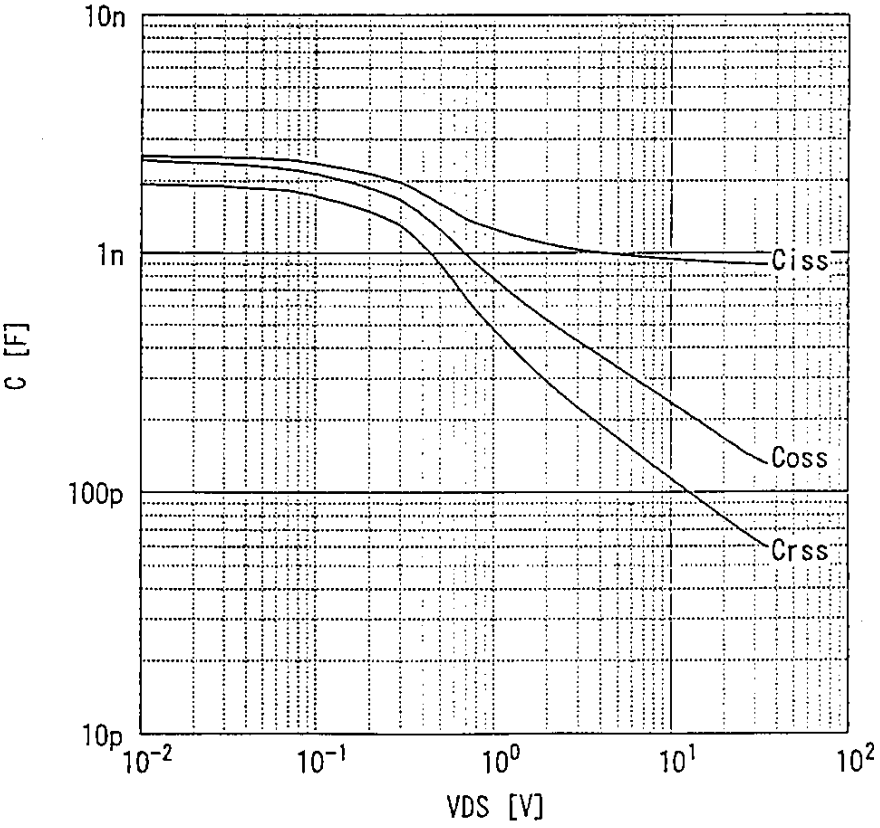
Gate threshold voltage
VGS(th)=f(Tch) : ID=1mA, VDS=VGS



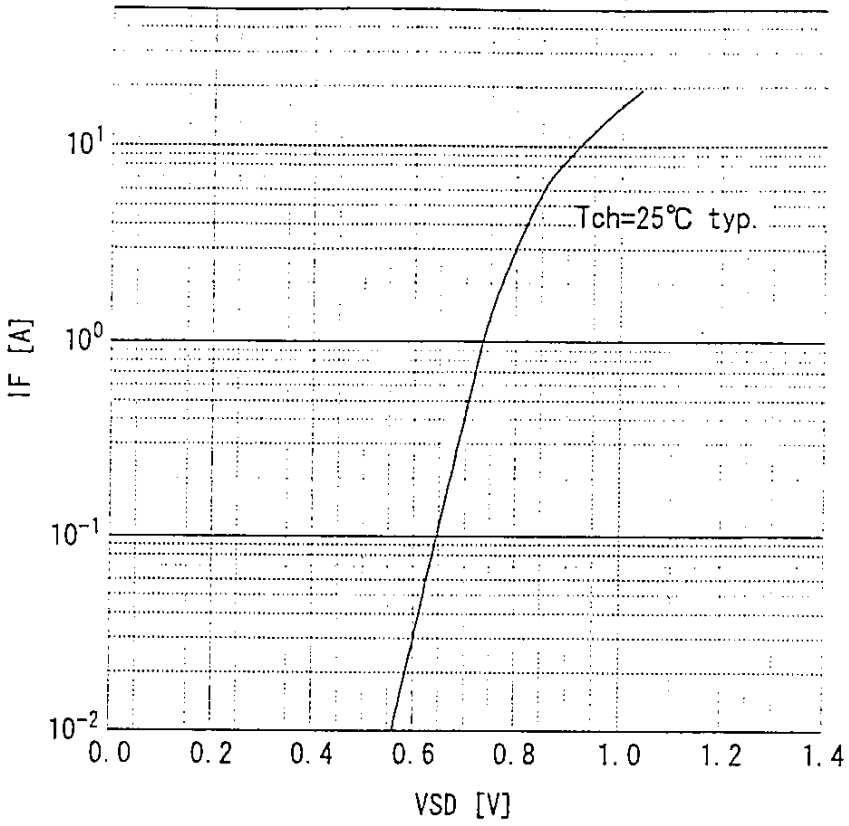
Typical gate charge characteristic
VGS=f(Qg) : ID=9A, Tc=25℃



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