SPECIFICATION

DEVICE NAME : Power MOSFET

TYPE NAME : 2SK2954-MR

SPEC. No. : - - -

Fuji Electric Co.,Ltd.
Matsumoto Factory

	DATE	NAME	APPROVED
DRAWN			
CHECKED			

Fuji Electric Co.,Ltd.

DWG.NO. - -

1. Scope
This specifies Fuji power MOSFET 2SK2954-MR

2. Construction N-channel enhancement mode power MOSFET

3. Application for switching

4. Outview TO-220F Outview See to 4/10 page

5. Absolute maximum ratings at Tc=25℃ (unless otherwise specified)

Description	Symbol	Characteristics	Unit	
Drain-source voltage	V_{DS}	100	V	
Drain-gate voltage	V_{DGR}	100	V	
Continuous Drain current	I_D	± 30	A	
Pulsed drain current	I_{Dpulse}	± 120	A	
Gate-source voltage	V_{GS}	± 20	V	
Maximum power dissipation	P_D	50	W	
Operating and storage temperature range	T_{ch}	150	℃	
	T_{stg}	-55 ～ +150	℃	

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		100			V
Gate threshold voltage	$V_{GS(th)}$	I_D =1mA V_{DS}=V_{GS}		1.0	1.5	2.5	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=100V 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}=±20V V_{DS}= 0V			10	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	I_D =15A	V_{GS}= 4V		40	70	mΩ
			V_{GS}=10V		30	55	

Dynamic ratings

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Forward transconductance	gfs	I_D = 15A V_{DS} = 25V	15	30		S
Input capacitance	Ciss	V_{DS}=25V V_{GS}= 0V f =1MHz		2500	3700	pF
Output capacitance	Coss			500	750	pF
Reverse transfer capacitance	Crss			250	380	pF
Turn-on time	td(on)	V_{CC}= 30V V_{GS}= 10V I_D = 30A R_{GS}= 25Ω		20	30	ns
	tr			140	210	ns
Turn-off time	td(off)			500	750	ns
	tf			260	390	ns

Reverse diode

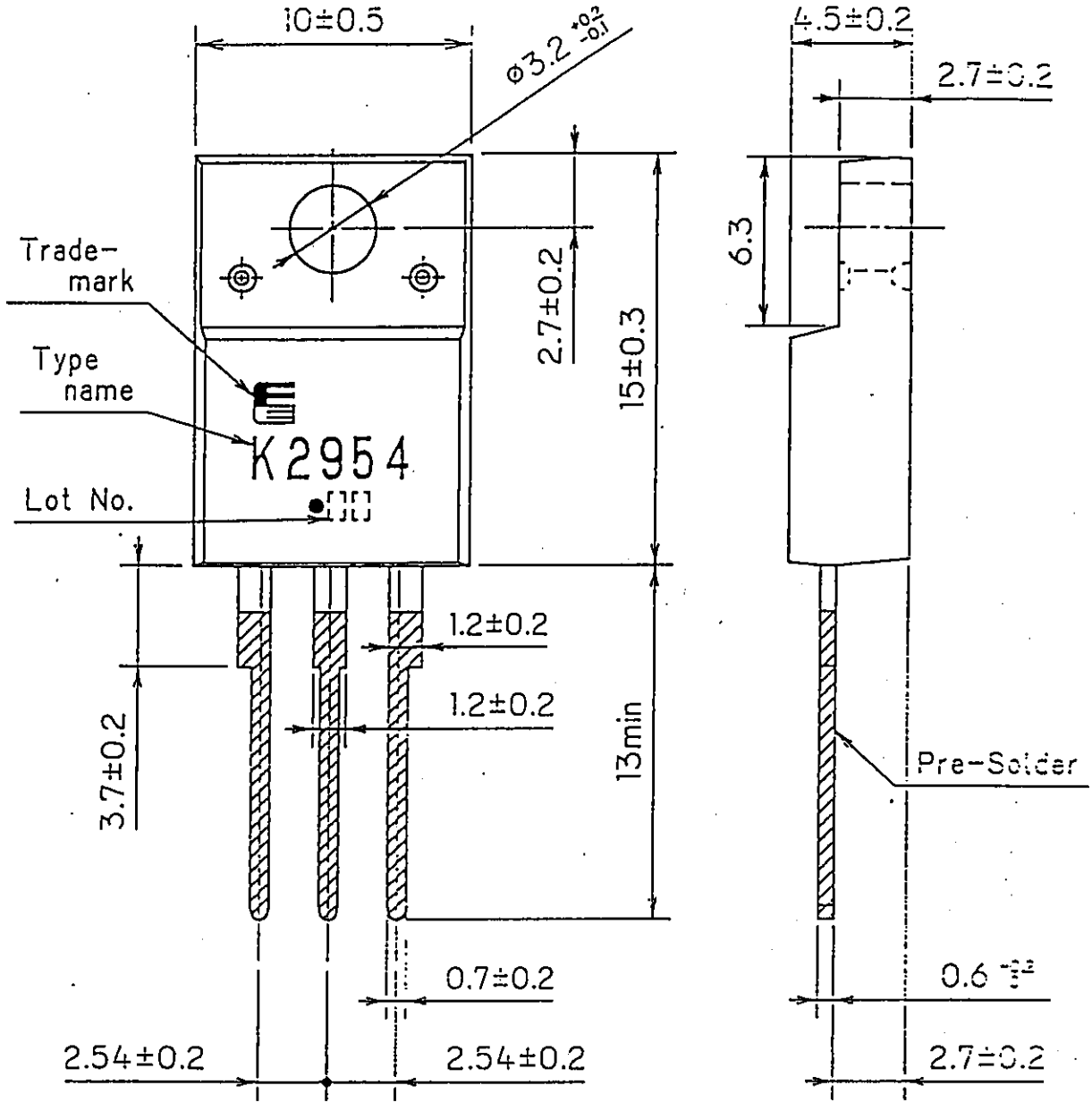
Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Diode forward on-voltage	V_{SD}	I_F = 2 × I_{DR} V_{GS}=0V, T_{ch}=25℃		0.9	1.5	V
Reverse recovery time	t_{rr}	I_F = I_{DR} V_{GS}=0V $-dI_F/dt$=100A/μs T_{ch}=25℃		130		ns
Reverse recovery charge	Q_{rr}			1		μC

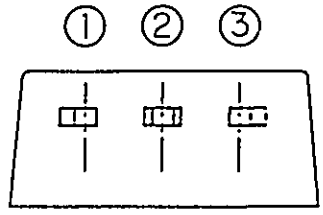
7. Thermal resistance

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Thermal resistance	$R_{th(ch-c)}$				2.5	℃/W
	$R_{th(ch-a)}$				62.5	℃/W

FUJI POWER MOS FET

TYPE : 2SK2954-MR





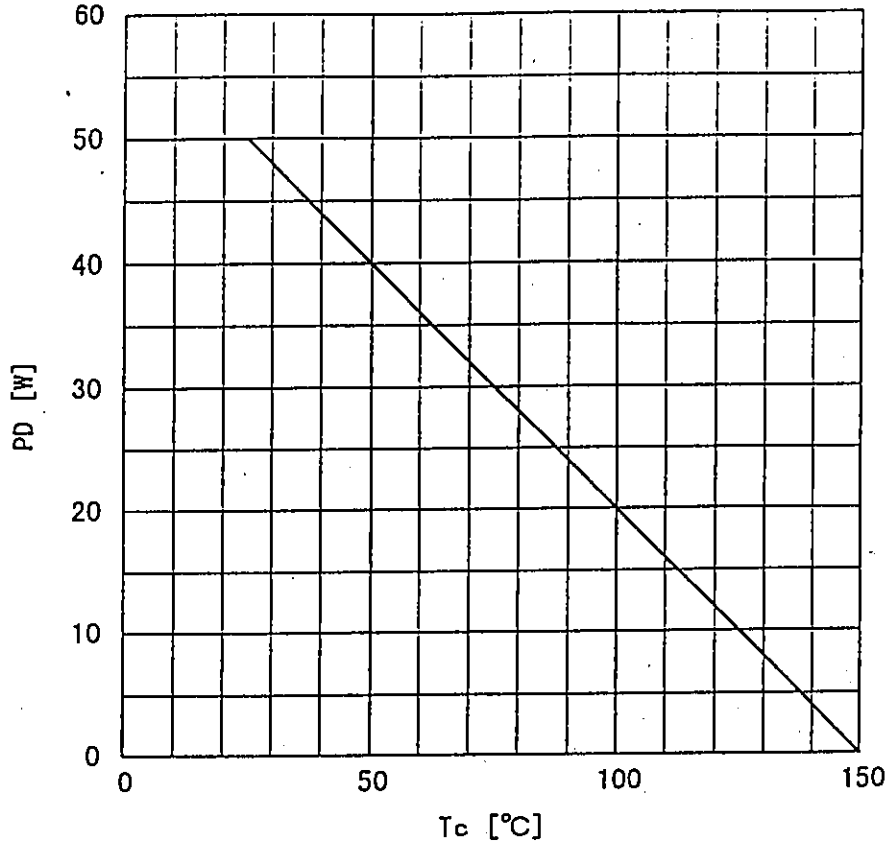
CONNECTION

① GATE
② DRAIN
③ SOURCE

DIMENSIONS ARE IN MILLIMETERS.

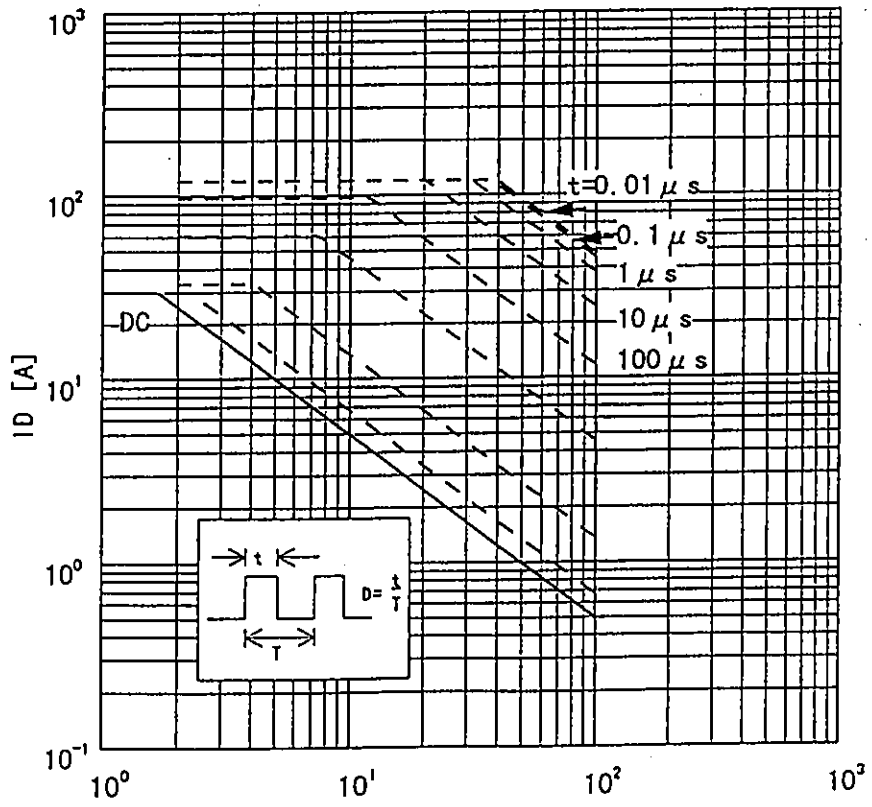
Power Dissipation

PD=f (Tc)

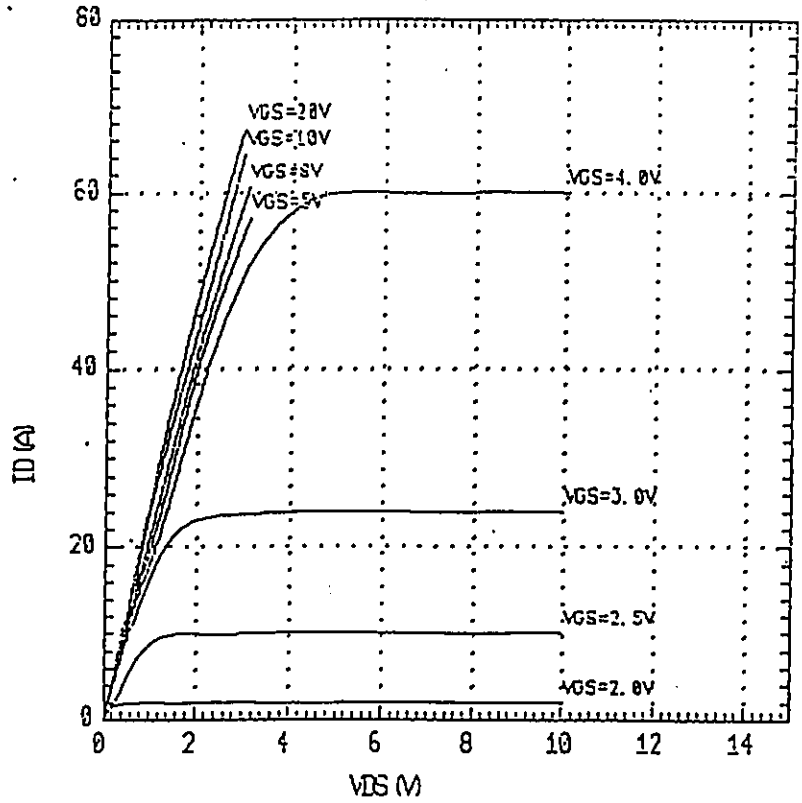


Safe operating area

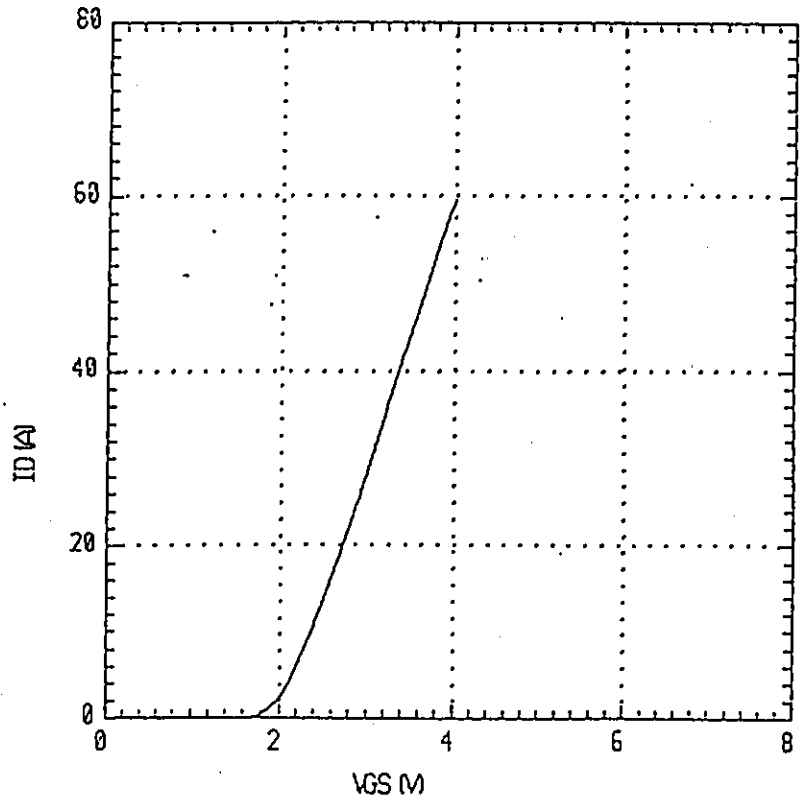
ID=f (VDS) : D=0.01, Tc=25°C



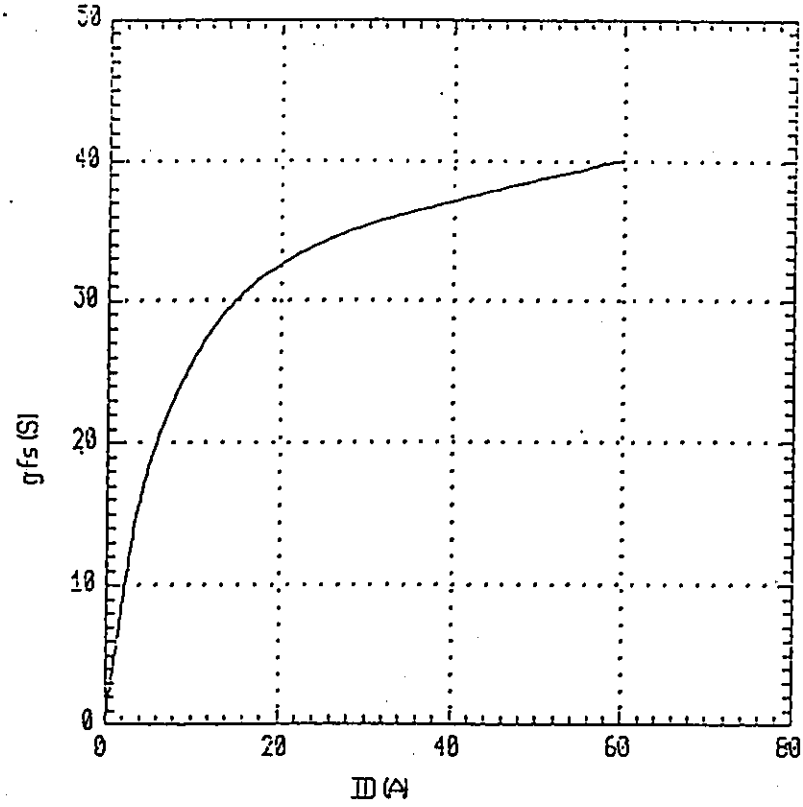
Typical output characteristics
ID=f(VDS):80μs pulse test,Tch=25°C



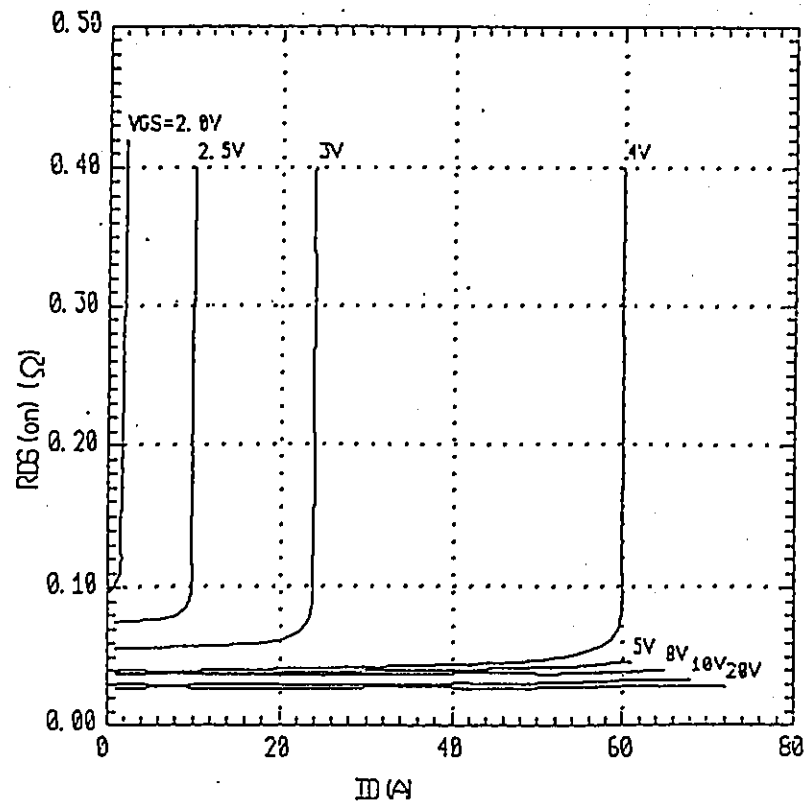
Typical Transfer Characteristics
ID=f(VGS):80μs pulse test,VDS=25V,Tch=25°C



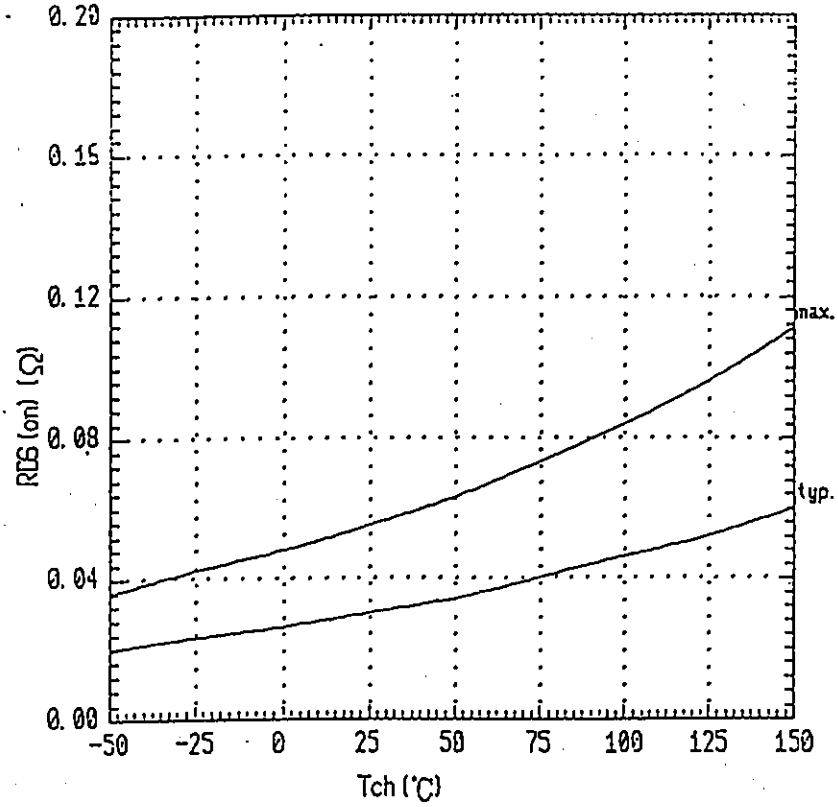
Typical Transconductance
gfs=f(ID):80μs pulse test,VDS=25V,Tch=25℃



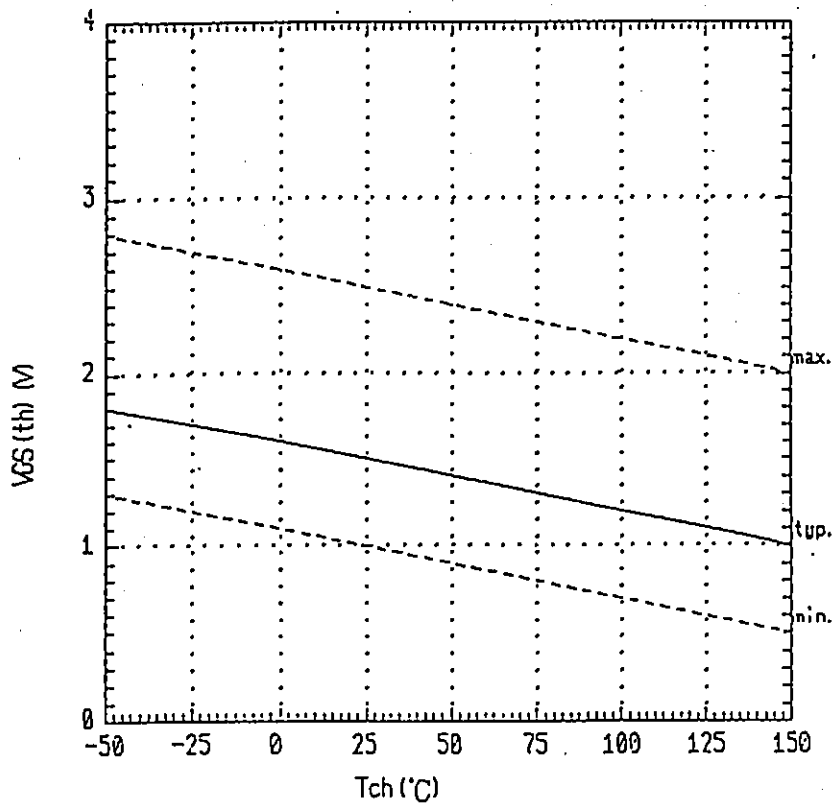
Typical Drain-source on-state resistance
RDS(on)=f(ID):80μs pulse test,Tch=25℃



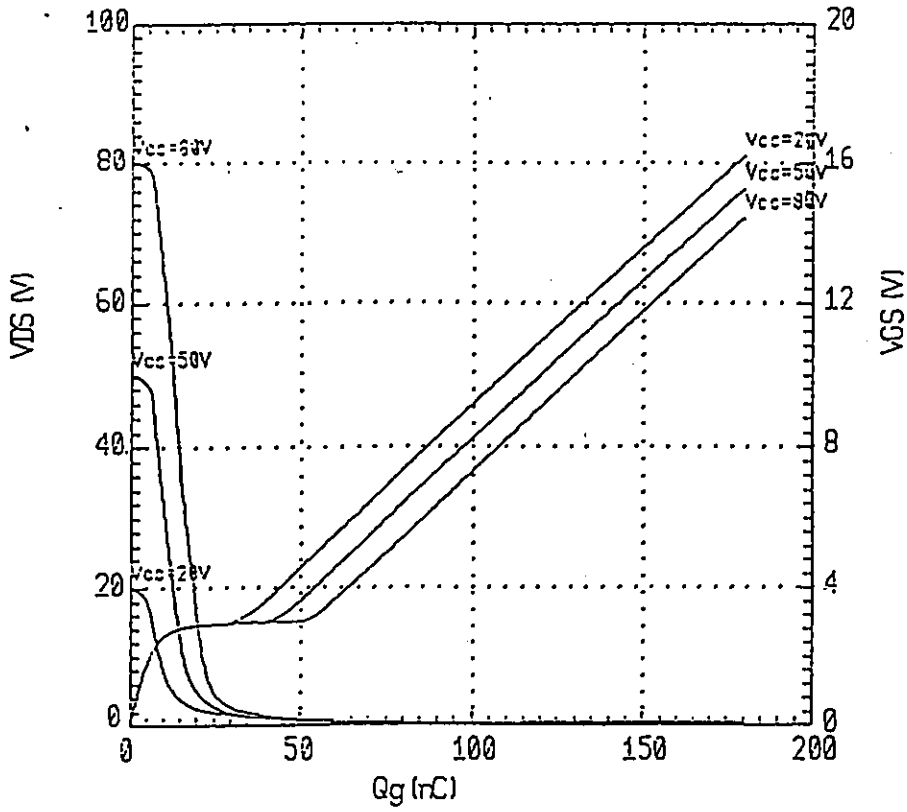
Drain-source on-state resistance
RDS(on)=f(Tch):ID=15A,VGS=10V



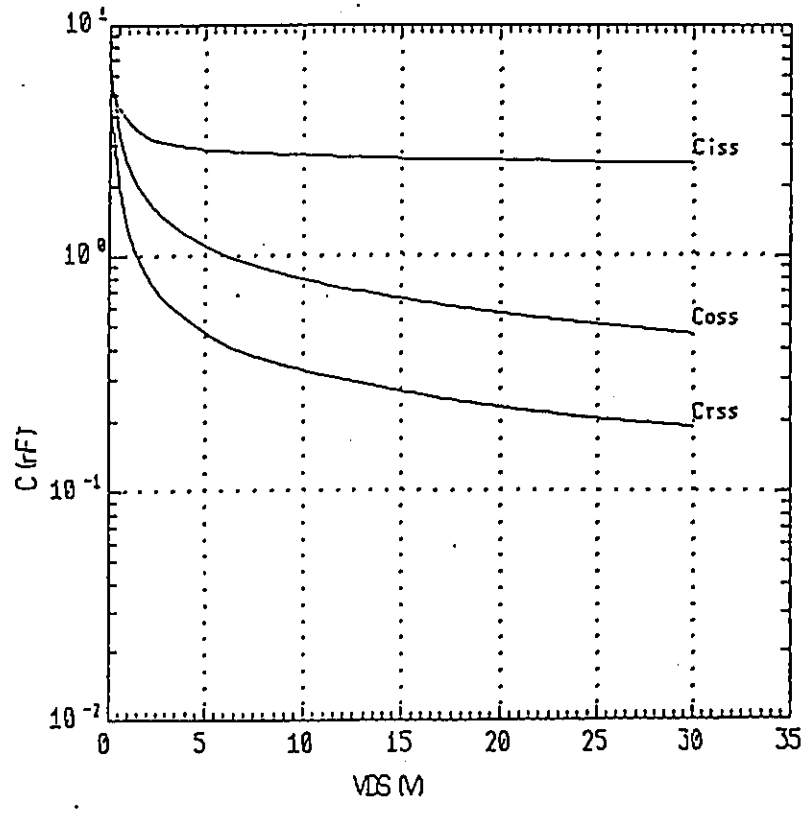
Gate threshold voltage
VGS(th)=f(Tch):VDS=VGS,ID=1mA



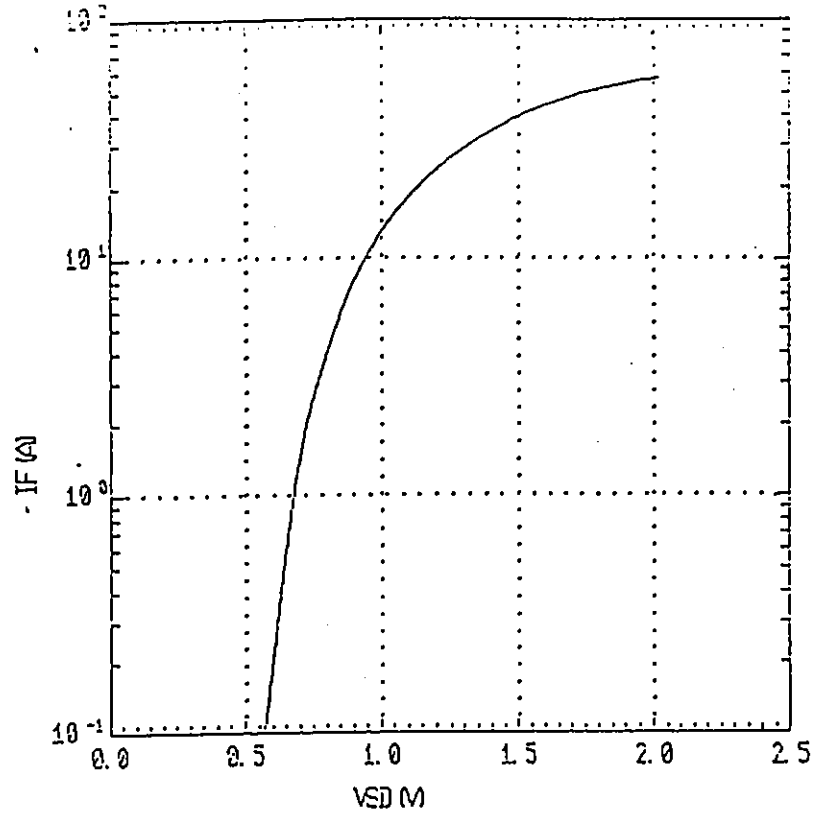
Typical gate charge characteristics
VGS=f(Qg):ID=30A



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



Farward characteristic of revese dicde
IF=f(VSD):80μs pulse test



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