

SPECIFICATION

DEVICE NAME : Power MOSFET

TYPE NAME : 2SJ472-01L,S

SPEC. NO. :

Fuji Electric Co.,Ltd.

This Specification is subject to change without notice.

	DATE	NAME	APPROVED	Fuji Electric Co.,Ltd.	
DRAWN				DWG. NO.	1/13
CHECKED					

1.Scope This specifies Fuji Power MOSFET 2SJ472-01L,S

2.Construction P-Channel enhancement mode power MOSFET

3.Applications for Switching

4.Outview K-Pack L-Type : Outview See to 5/13 page
S-Type : Outview See to 6/13 page

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

Description	Symbol	Characteristics	Unit	Remarks
Drain-Source Voltage	V_{DS}	-30	V	
Continuous Drain Current	I_D	± 5	A	
Pulsed Drain Current	I_{DP}	± 20	A	
Gate-Source Voltage	V_{GS}	± 16	V	
Maximum Avalanche Energy	E_{AV}	191.8	mJ	*1
Maximum Power Dissipation	P_D	15	W	
Operating and Storage	T_{ch}	150	°C	
Temperature range	T_{stg}	-55 to +150	°C	

*1 L=10.23mH, Vcc=-12V

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

Static Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -1mA$ $V_{GS} = 0V$	-30			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}	$V_{DS} = -30V$ $V_{GS} = 0V$				μA
		$T_{ch} = 25^\circ C$		-10	-500	μA
		$T_{ch} = 125^\circ C$		-0.2	-1.0	mA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V$ $V_{DS} = 0V$		10	100	nA
Drain-Source On-State Resistance	$R_{DS(on)}$	$I_D = -2.5A$				m Ω
		$V_{GS} = -4V$		480	850	
		$V_{GS} = -10V$		210	400	

Dynamic Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Forward Transconductance	g_{fs}	$I_D = -2.5A$ $V_{DS} = -25V$	1.5	3		S
Input Capacitance	C_{iss}	$V_{DS} = -25V$		250	380	pF
Output Capacitance	C_{oss}	$V_{GS} = 0V$		150	230	
Reverse Transfer Capacitance	C_{rss}	$f = 1MHz$		85	130	
Turn-On Time	$t_{d(on)}$	$V_{cc} = -12V$		10	15	ns
	t_r	$V_{GS} = -10V$		20	30	
Turn-Off Time	$t_{d(off)}$	$I_D = -5A$		25	40	
	t_f	$R_{GS} = 10\Omega$		20	30	

Reverse Diode

Description	Symbol	Conditions	min.	typ.	max.	Unit
Avalanche Capability	I_{AV}	$L = 100\mu H$ $T_{ch} = 25^\circ C$ See Fig.1 and Fig.2	-5			A
Diode Forward On-Voltage	V_{SD}	$I_F = 2 \times I_{DR}$ $V_{GS} = 0V$ $T_{ch} = 25^\circ C$		-2.5	-3.8	V
Reverse Recovery Time	t_{rr}	$I_F = I_{DR}$		90		ns
Reverse Recovery Charge	Q_{rr}	$di/dt = 100A/\mu s$ $T_{ch} = 25^\circ C$		0.3		μC

7. Thermal Resistance

Description	Symbol	min.	typ.	max.	Unit
Channel to Case	$R_{th(ch-c)}$			8.33	$^\circ C/W$
Channel to Ambient	$R_{th(ch-a)}$			150	$^\circ C/W$

Fig.1 Test circuit

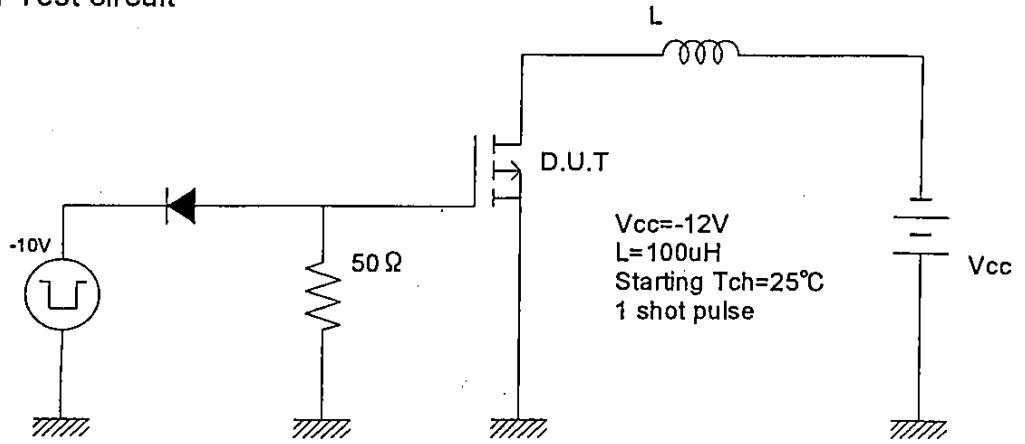
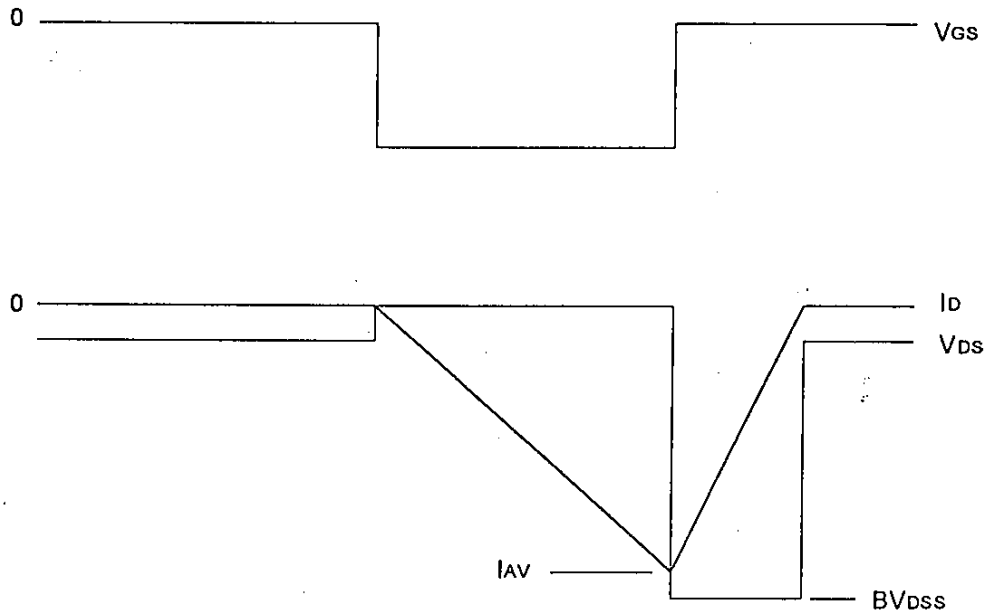
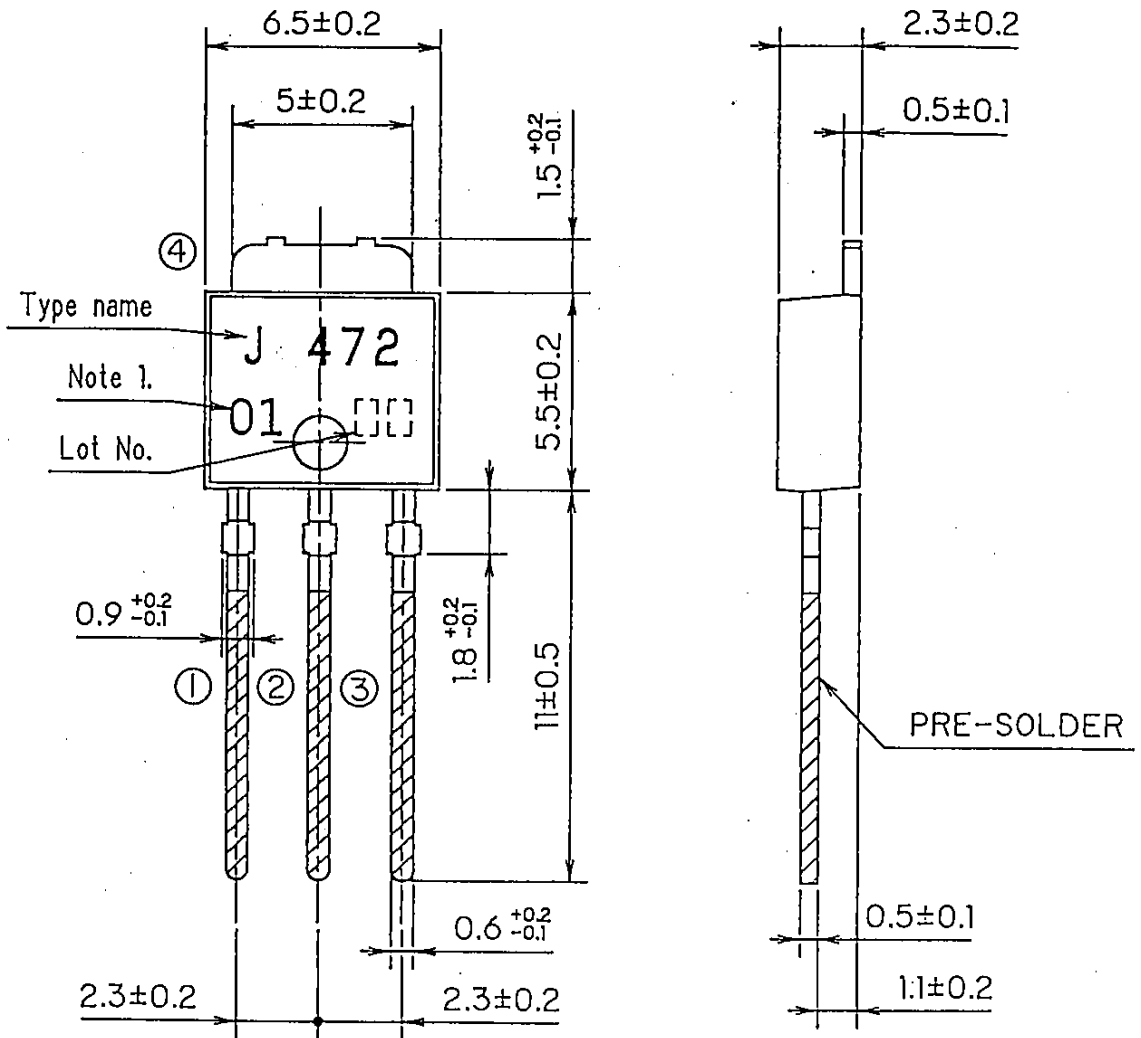


Fig.2 Operating waveforms



MOSFET Type : 2SJ472-01L

OUT VIEW



CONNECTION

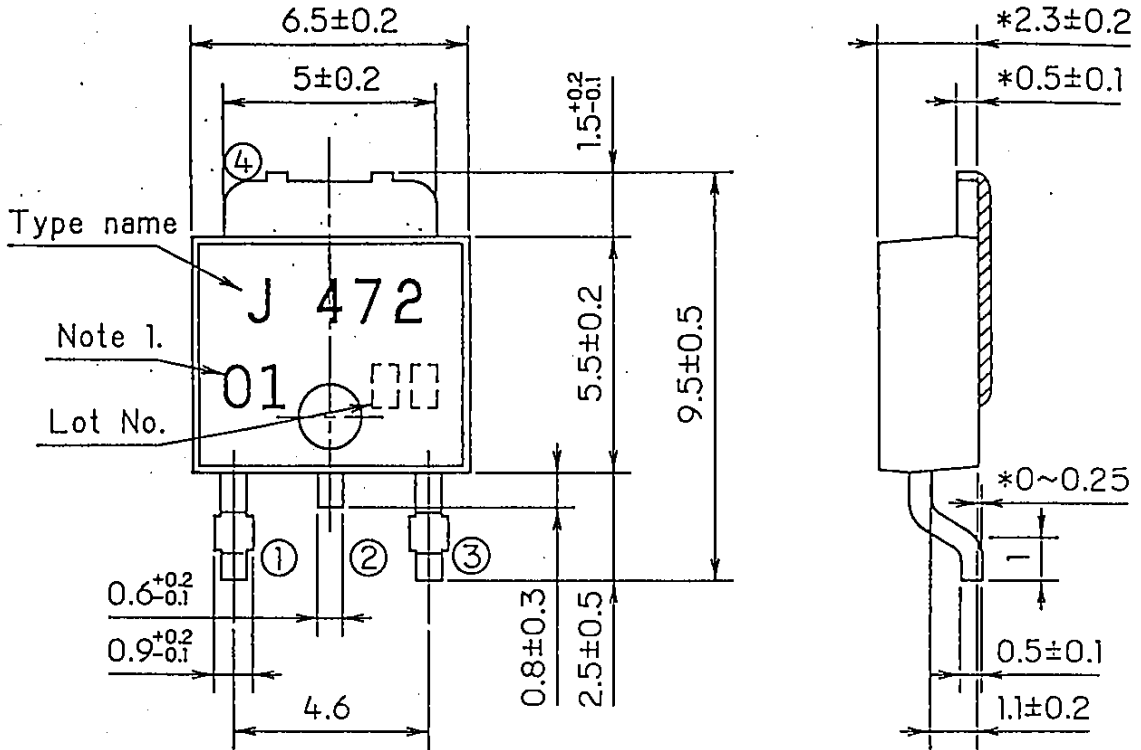
- ① GATE
 - ②④ DRAIN
 - ③ SOURCE
- JEDEC:TO-252
EIAJ:SC-64

Note 1. Guaranteed mark of avalanche ruggedness.

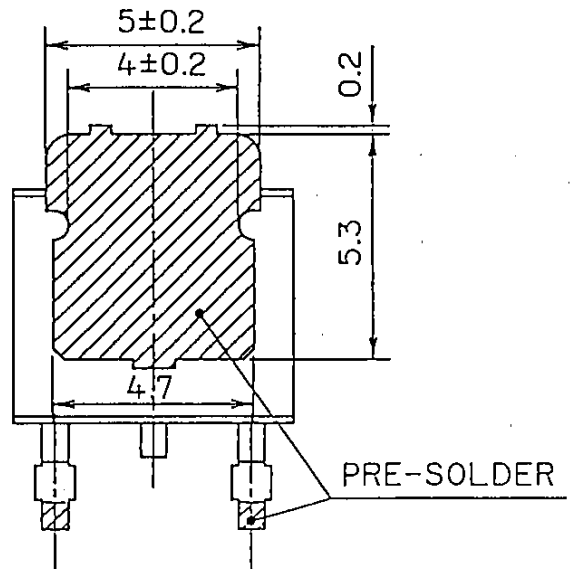
DIMENSIONS ARE IN MILLIMETERS.

MOSFET Type : 2SJ472-01S

OUT VIEW



BACK VIEW



CONNECTION

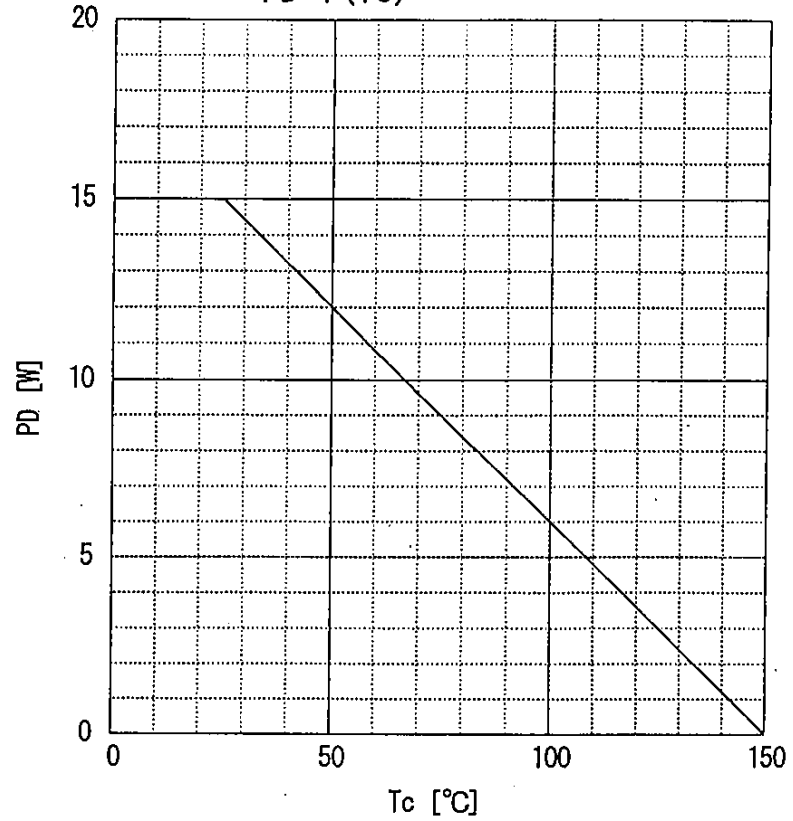
- ① GATE
- ②④ DRAIN
- ③ SOURCE

JEDEC:TO-252
EIAJ:SC-63

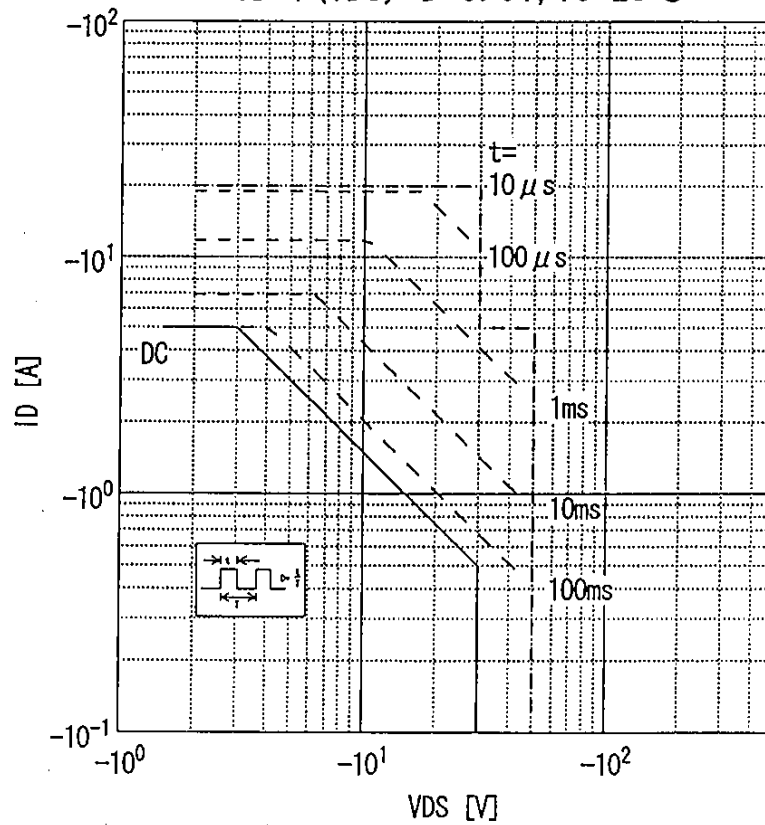
Dimension of * marks are excluded the thickness solder.
Note 1. Guaranteed mark of avalanche ruggedness.

DIMENSIONS ARE IN MILLIMETERS.

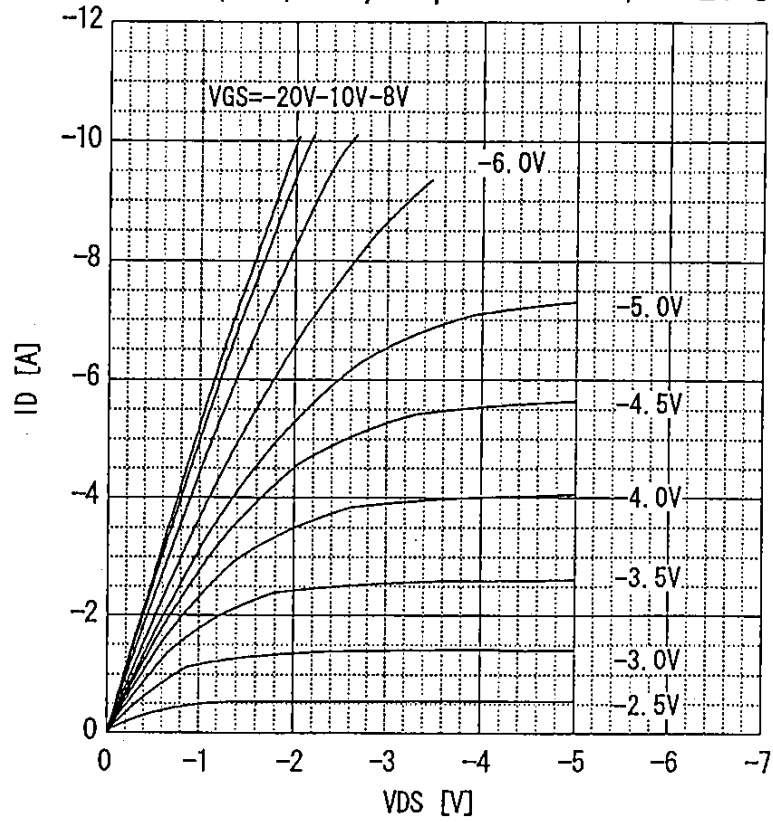
Power Dissipation
 $PD=f(T_c)$



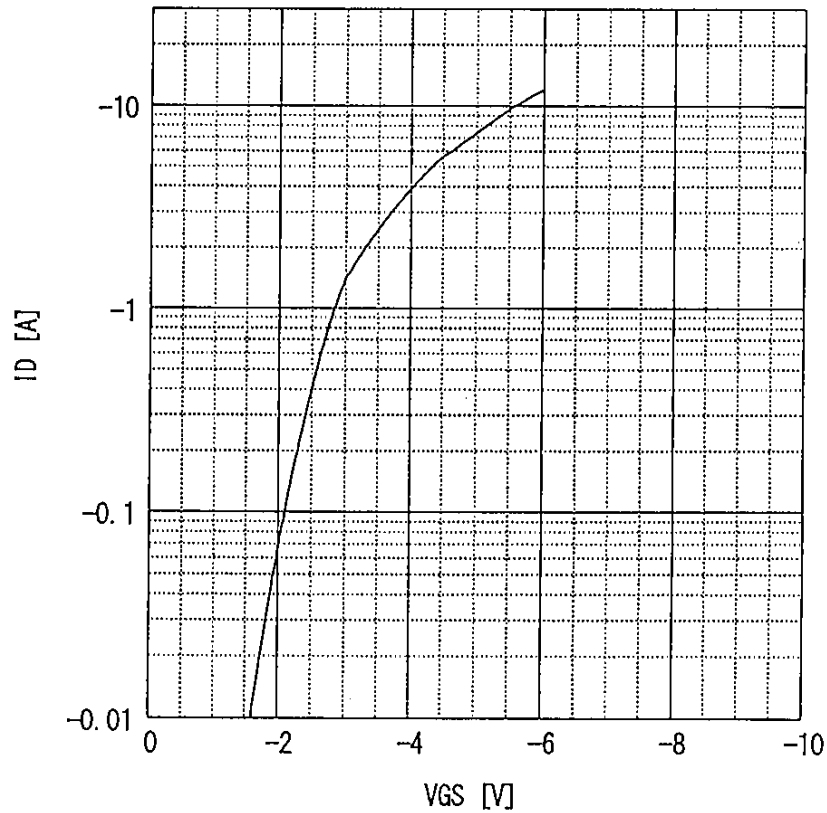
Safe operating area
 $ID=f(V_{DS}) : D=0.01, T_c=25^\circ\text{C}$



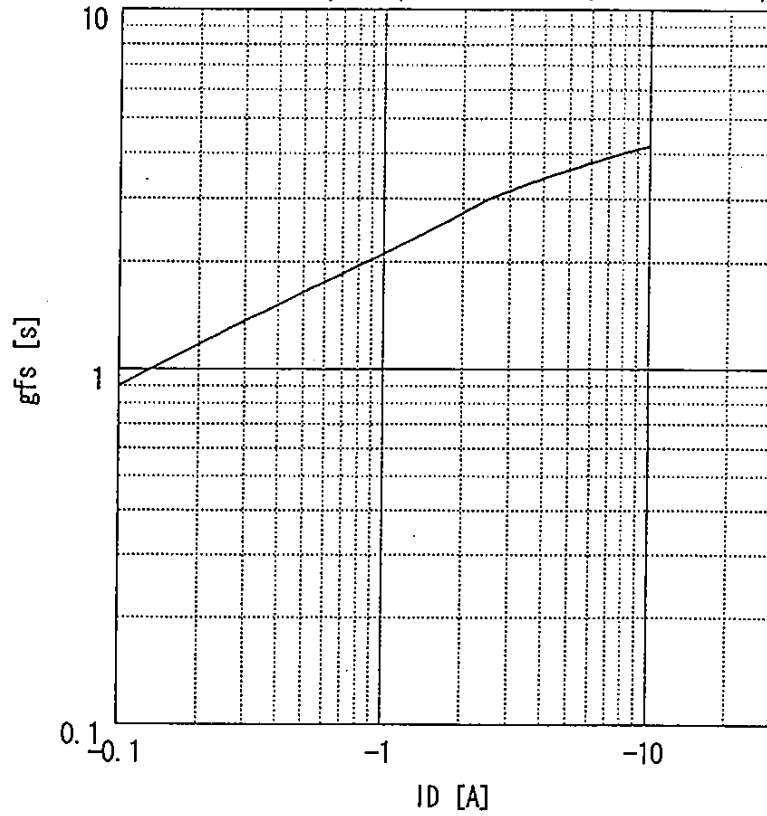
Typical output characteristics
 $I_D = f(V_{DS}) : 80 \mu s$ pulse test, $T_c = 25^\circ C$



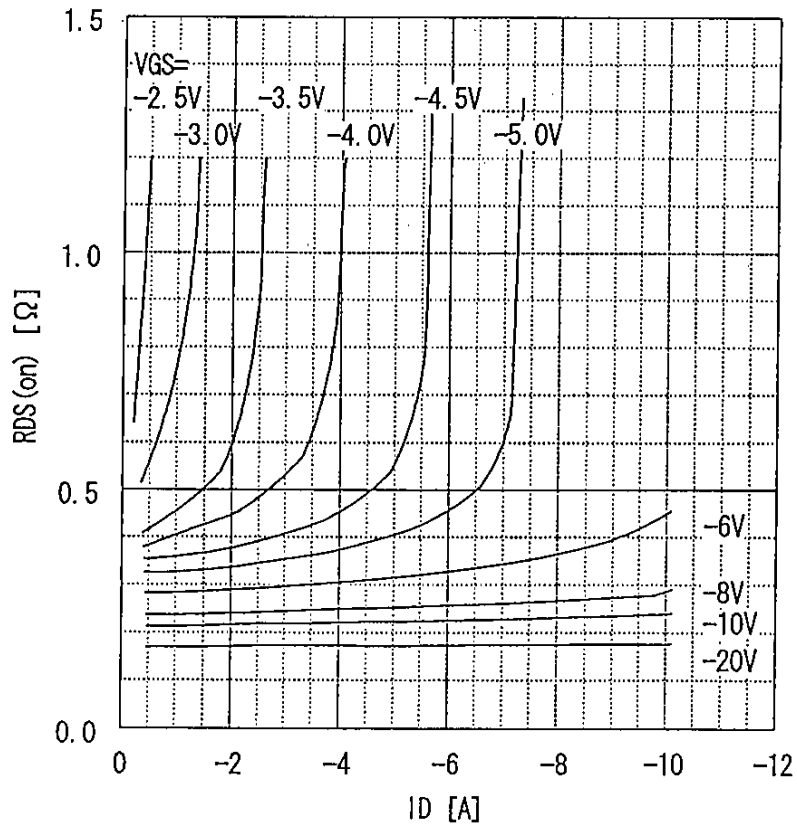
Typical transfer characteristic
 $I_D = f(V_{GS}) : 80 \mu s$ pulse test, $V_{DS} = -25V$, $T_{ch} = 25^\circ C$



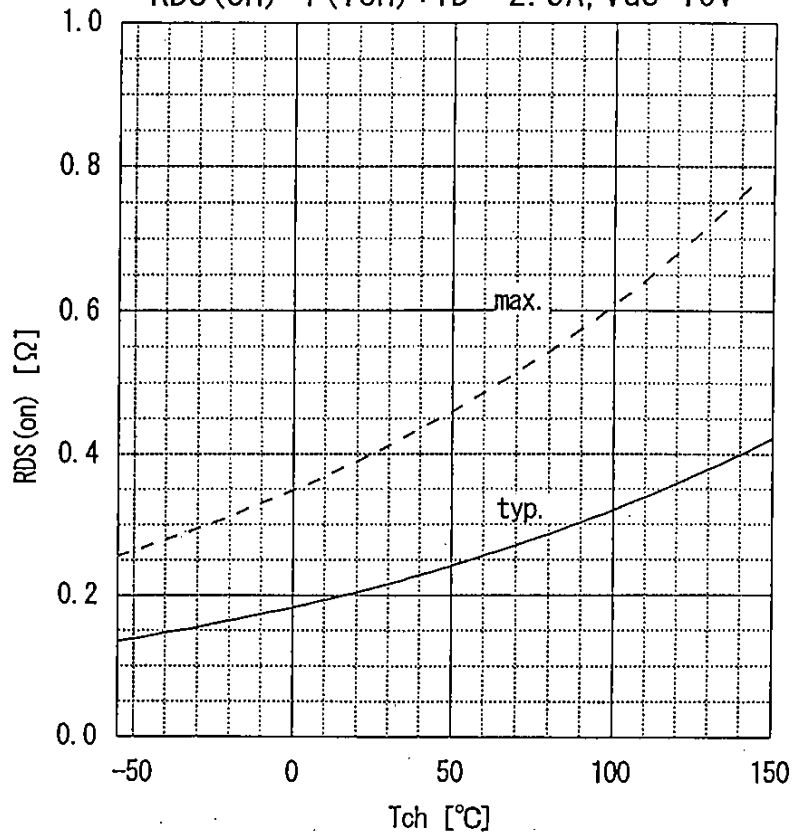
Typical forward transconductance
 $g_{fs}=f(I_D)$: $80\mu s$ pulse test, $V_{DS}=-25V$, $T_{ch}=25^\circ C$



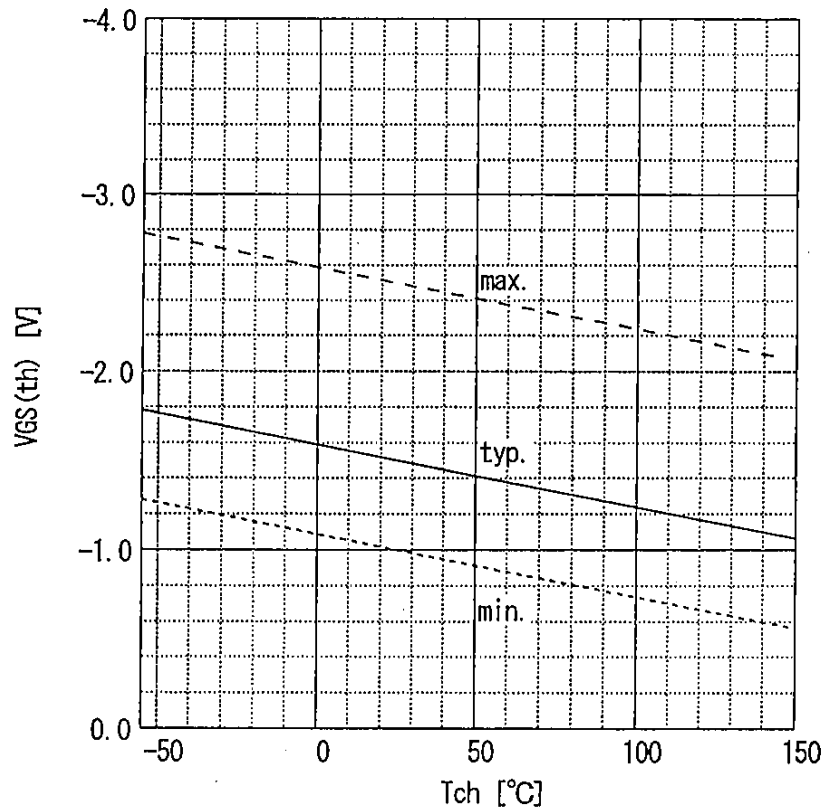
Typical drain-source on-state resistance
 $R_{DS(on)}=f(I_D)$: $80\mu s$ pulse test, $T_c=25^\circ C$



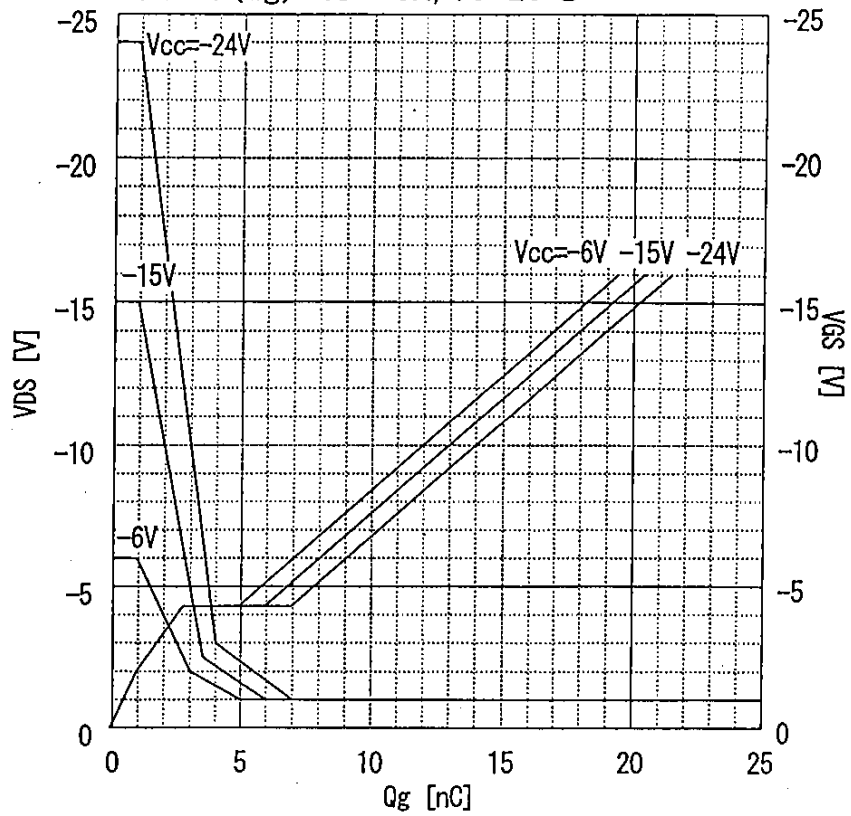
Drain-source on-state resistance
 $R_{DS(on)} = f(T_{ch}) : I_D = -2.5A, V_{GS} = 10V$



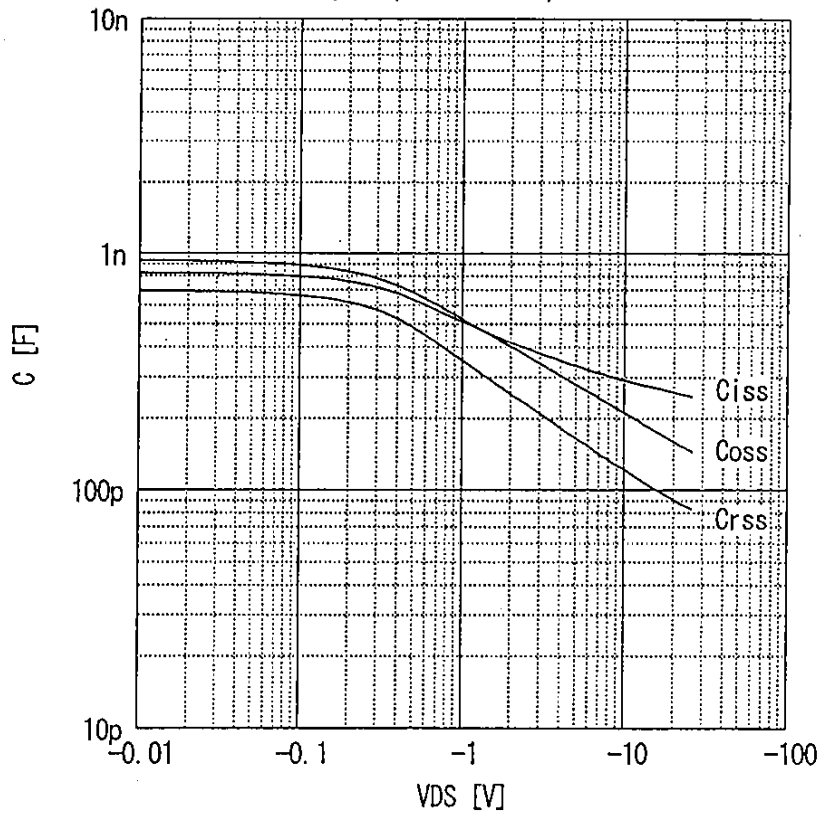
Gate threshold voltage
 $V_{GS(th)} = f(T_{ch}) : I_D = -1mA, V_{DS} = V_{GS}$



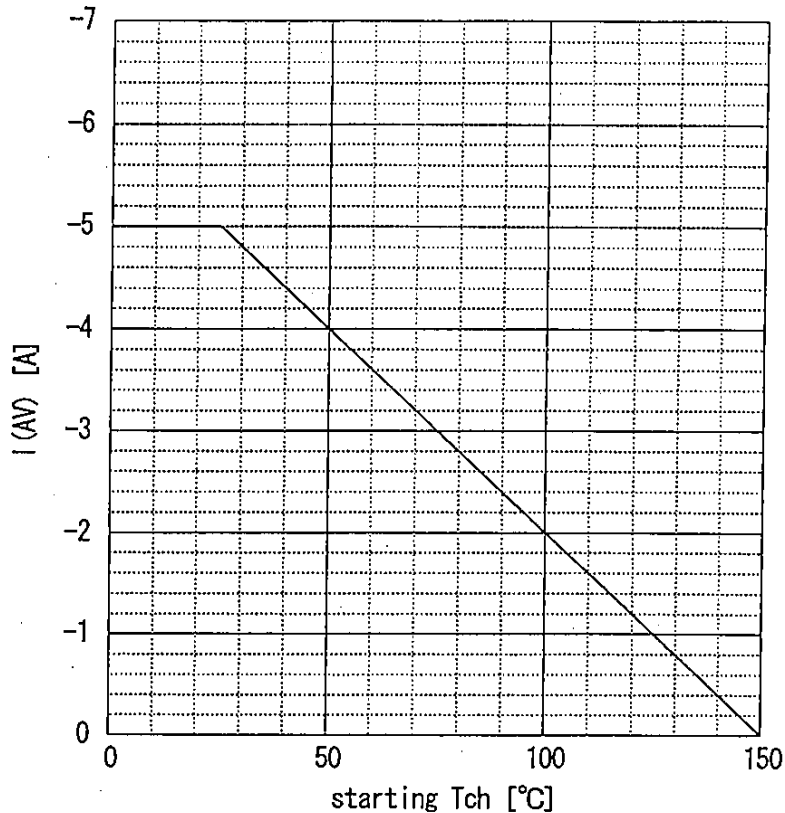
Typical gate charge characteristic
 $V_{GS} = f(Q_g) : I_D = -5A, T_c = 25^\circ C$



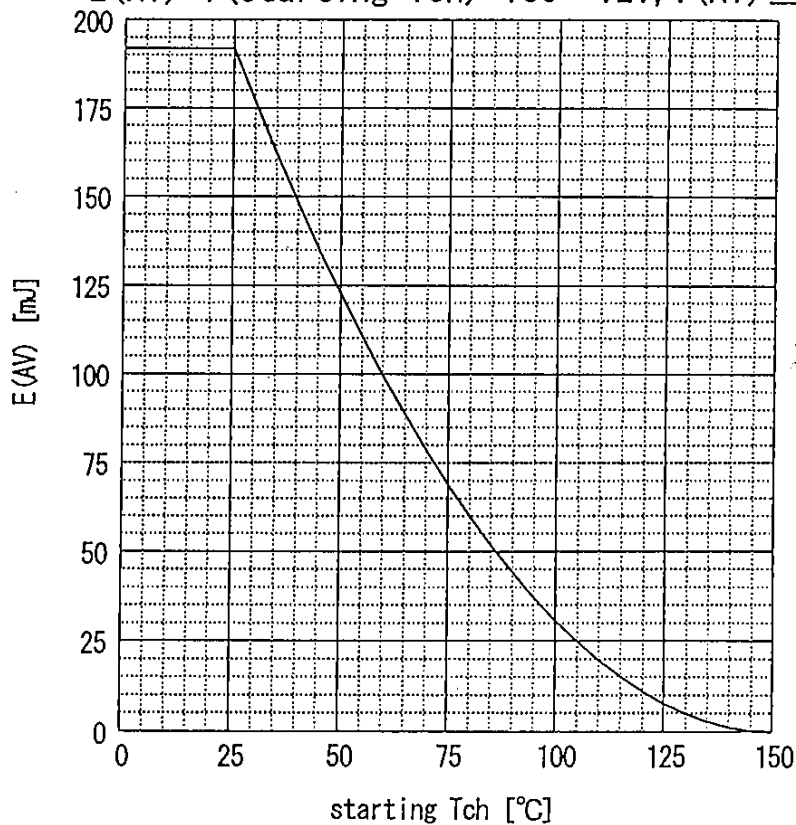
Typical capacitances
 $C = f(V_{DS}) : V_{GS} = 0V, f = 1MHz$



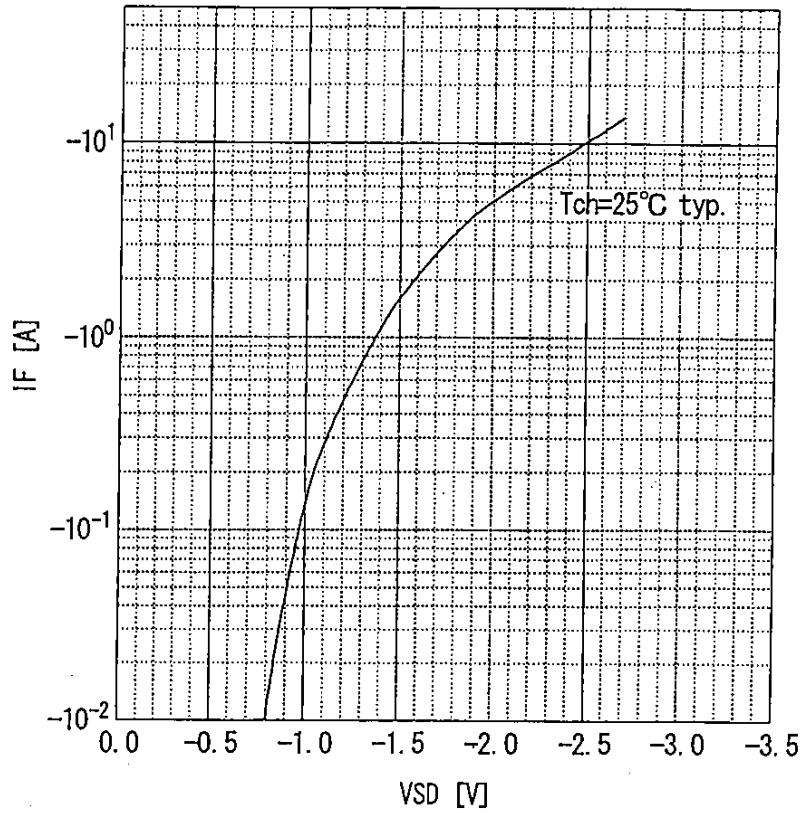
Maximum Avalanche Current vs. starting Tch
 $I(AV) = f(\text{starting Tch})$



Maximum Avalanche Energy vs. starting Tch
 $E(AV) = f(\text{starting Tch}) : V_{CC} = -12V, I(AV) \geq -5A$



Forward characteristic of reverse of diode
 $I_F = f(V_{SD}) : 80 \mu s$ pulses test, $V_{GS} = 0V$



Transient thermal impedande
 $Z_{thch} = f(t)$ parameter: $D = t/T$

