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SPECIFICATION

DEVICE NAME : Power MOSFET

TYPE NAME : 2SK2850-01

SPEC. NO. : [illegible]

Fuji Electric Co.,Ltd.

This Specification is subject to change without notice.

	DATE	NAME	APPROVED		Fuji Electric Co.,Ltd.
DRAWN					
CHECKED				DWG. NO.	
					1/12

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1.Scope This specifies Fuji Power MOSFET 2SK2850-01

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}	900	V	
Continuous Drain Current	I_D	±6	A	
Pulsed Drain Current	I_{DP}	±24	A	
Gate-Source Voltage	V_{GS}	±30	V	
Maximum Avalanche Energy	E_{AV}	277	mJ	*1
Maximum Power Dissipation	P_D	125	W	
Operating and Storage	T_{ch}	150	℃	
Temperature range	T_{stg}	-55 to +150	℃	

*1 L=14.1mH,Vcc=90V

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		900			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}=900V 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=3A VGS=10V			1.87	2.5	Ω

Dynamic Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Forward Transconductance	g_{fs}	I_D=3A V_{DS}=25V	2.0	4.0		S
Input Capacitance	Ciss	V_{DS}=25V		950	1450	pF
Output Capacitance	Coss	V_{GS}=0V		140	210	pF
Reverse Transfer Capacitance	Crss	f=1MHz		80	120	pF
Turn-On Time	td(on)	V_{cc}=600V		20	30	ns
	tr	V_{GS}=10V		50	80	ns
Turn-Off Time	td(off)	I_D=6A		110	170	ns
	tf	R_{GS}=10Ω		60	90	ns

Reverse Diode

Description	Symbol	Conditions	min.	typ.	max.	Unit
Avalanche Capability	I_{AV}	L=100μH Tch=25°C See Fig.1 and Fig.2	6			A
Diode Forward On-Voltage	V_{SD}	I_F=2×I_{DR} V_{GS}=0V T_{ch}=25°C		1.0	1.5	V
Reverse Recovery Time	trr	I_F=I_{DR} -di/dt=100A/μs T_{ch}=25°C		900		ns
Reverse Recovery Charge	Qrr			10		μc

7.Thermal Resistance

Description	Symbol	min.	typ.	max.	Unit
Channel to Case	Rth(ch-c)			1.00	°C/W
Channel to Ambient	Rth(ch-a)			35.0	°C/W

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Fig.1 Test Circuit

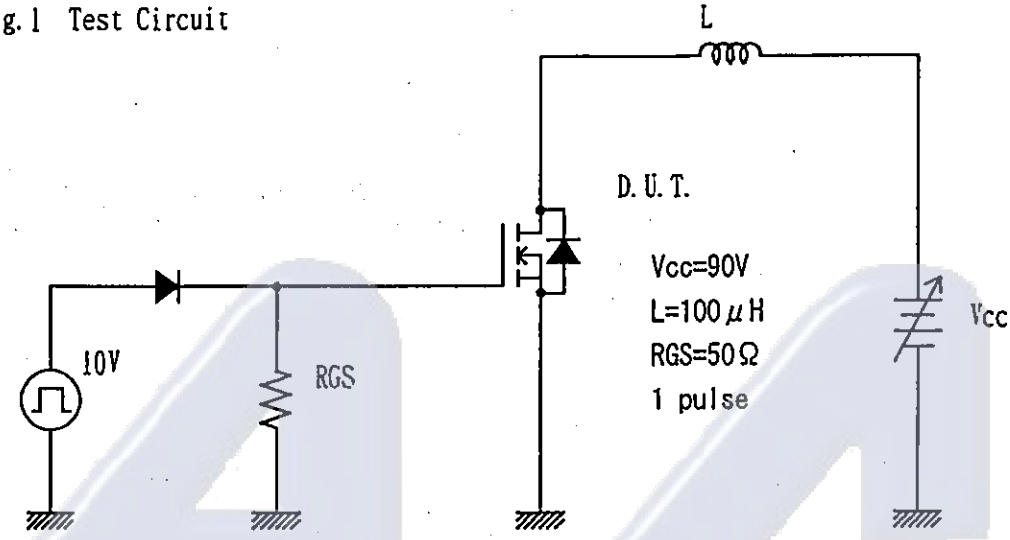
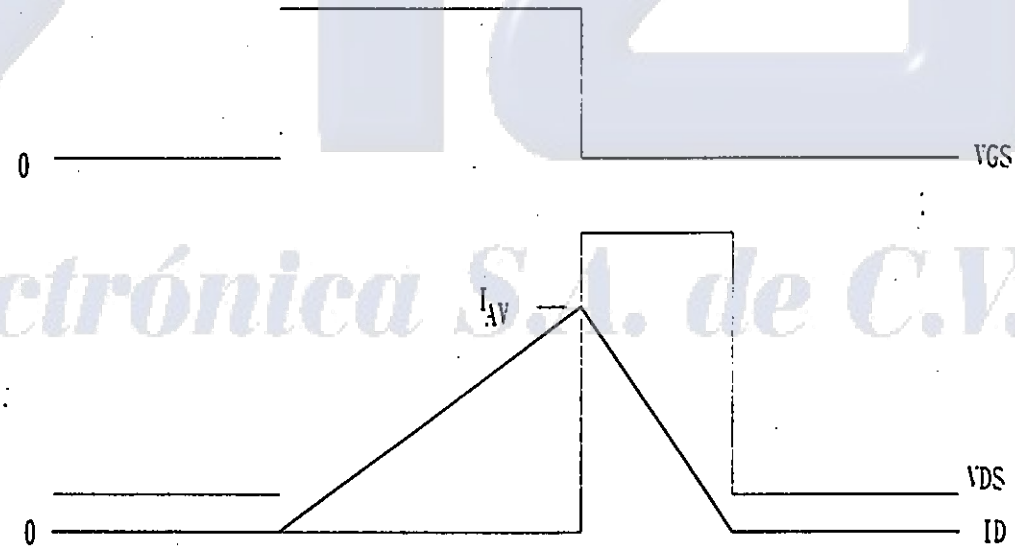
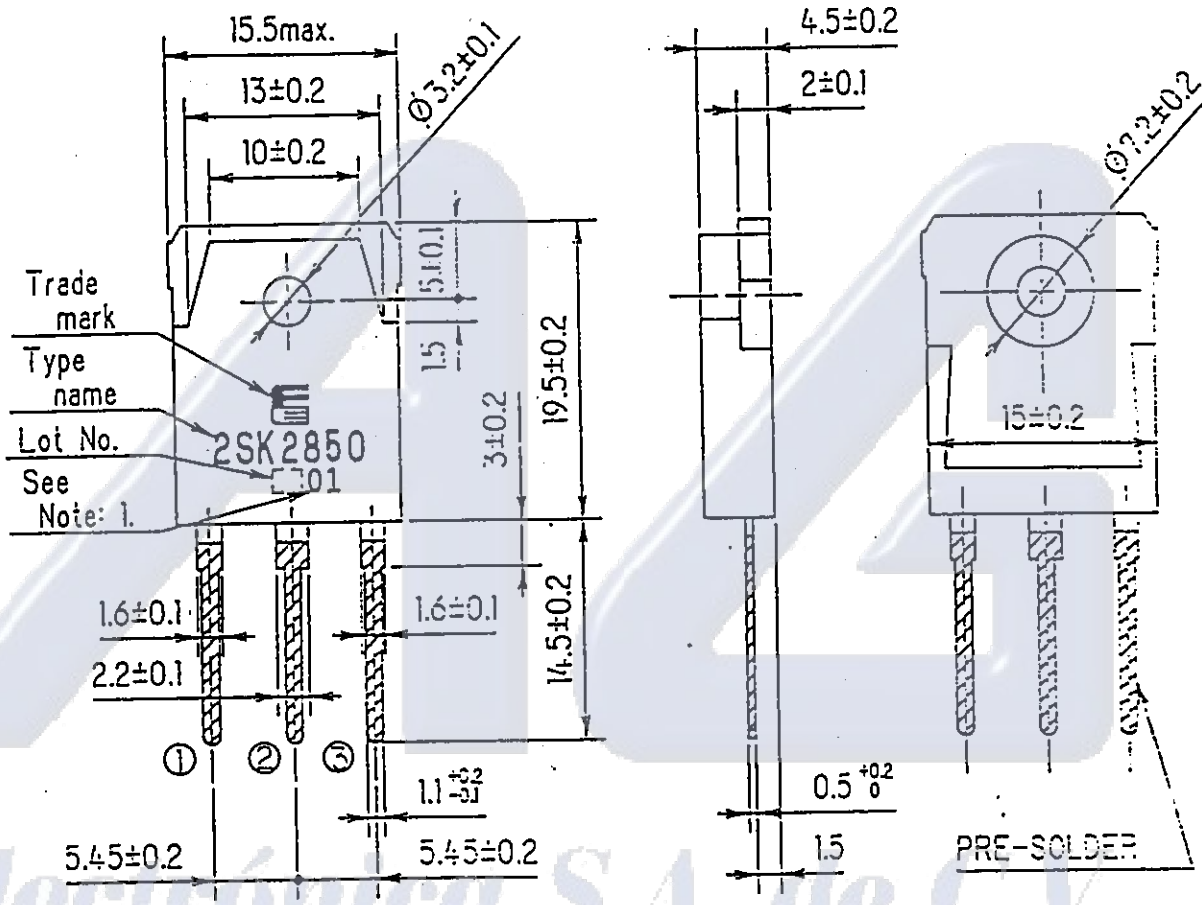


Fig.2 Operating waveforms

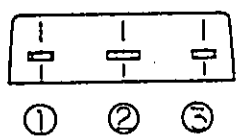


FUJI POWER MOS FET

TYPE : 2SK2850-01



DIMENSIONS ARE IN MILLIMETERS.



CONNECTION

① GATE
② DRAIN
③ SOURCE

JEDEC : TO-247
EIAJ : SC-65

Note: 1. Guaranteed mark of avalanche ruggedness.

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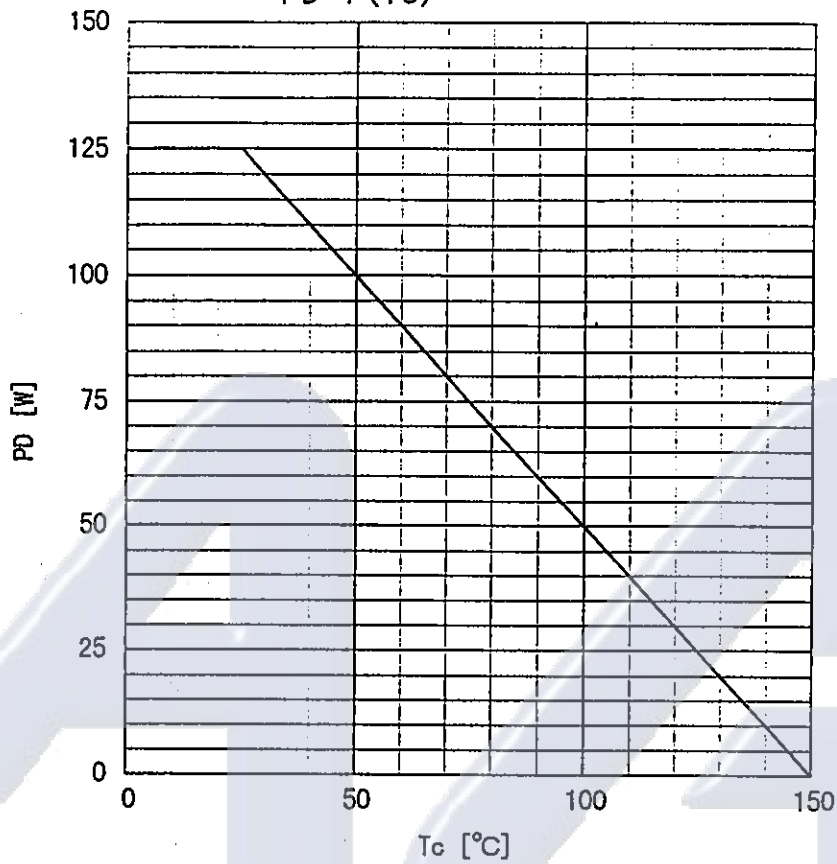
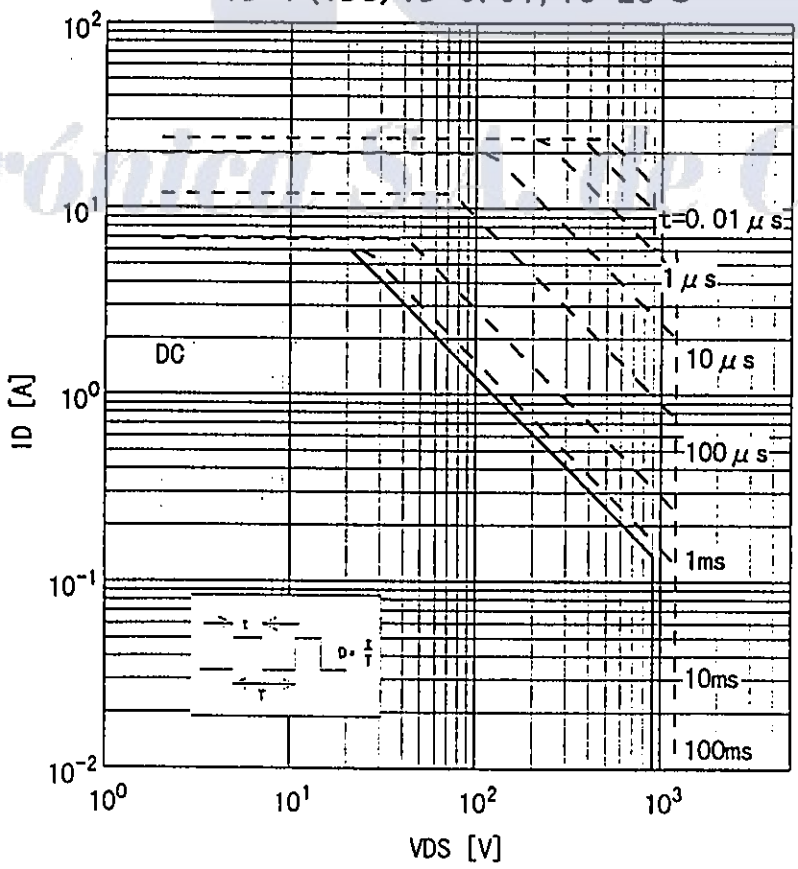
Power Dissipation

PD=f(Tc)



Safe operating area

ID=f(VDS) : D=0.01, Tc=25℃



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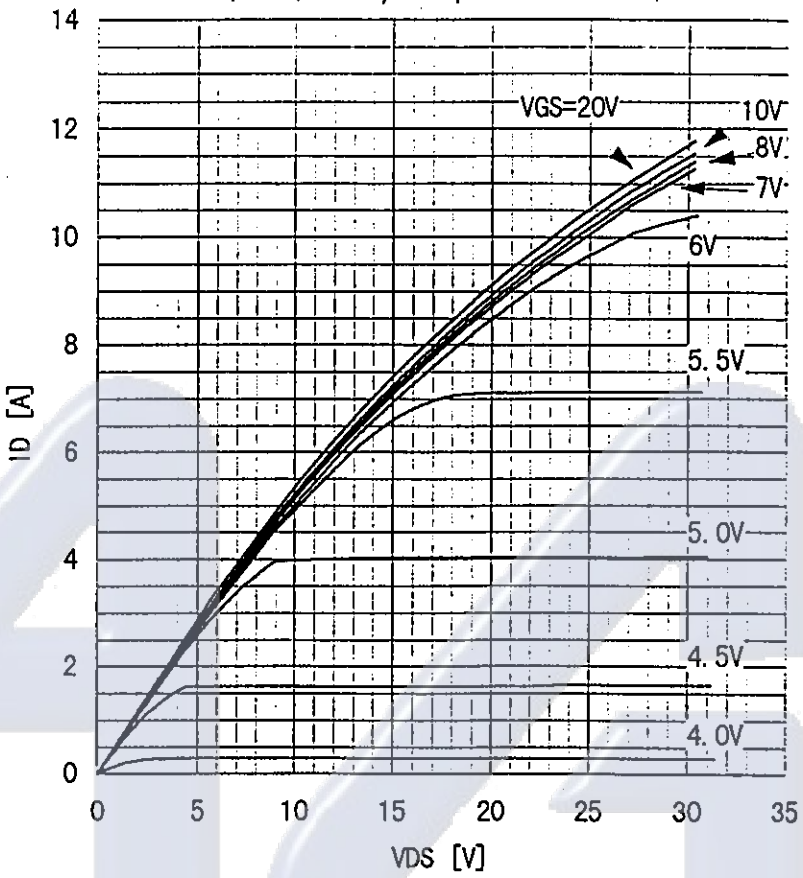
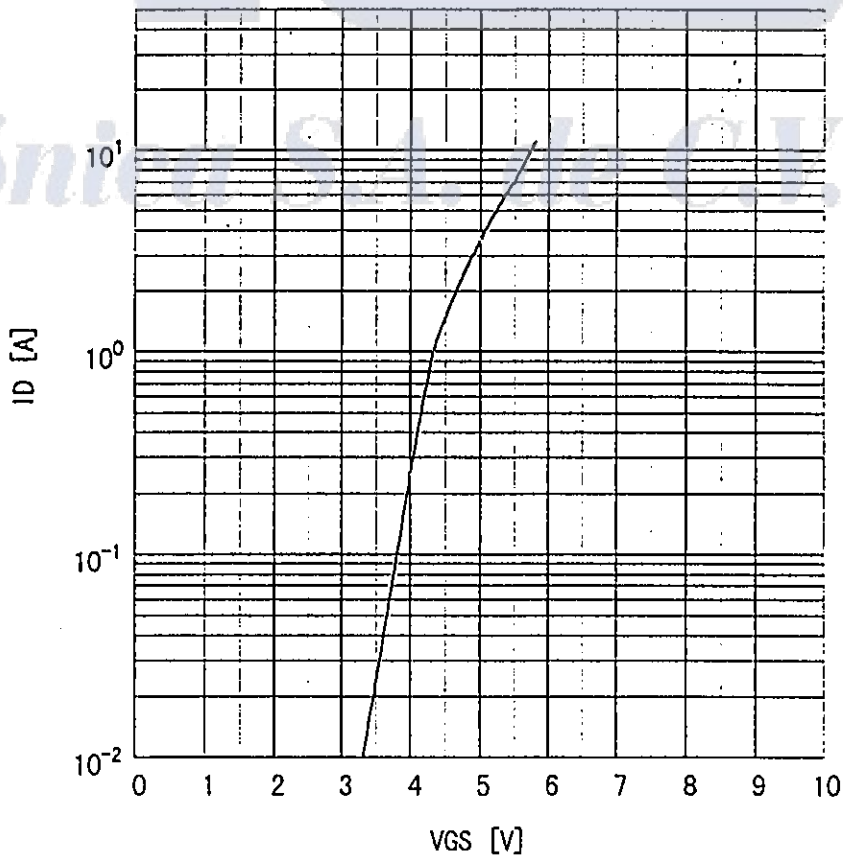
Typical output characteristics

ID=f(VDS) : 80 μs pulse test, Tc=25°C



Typical transfer characteristic

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



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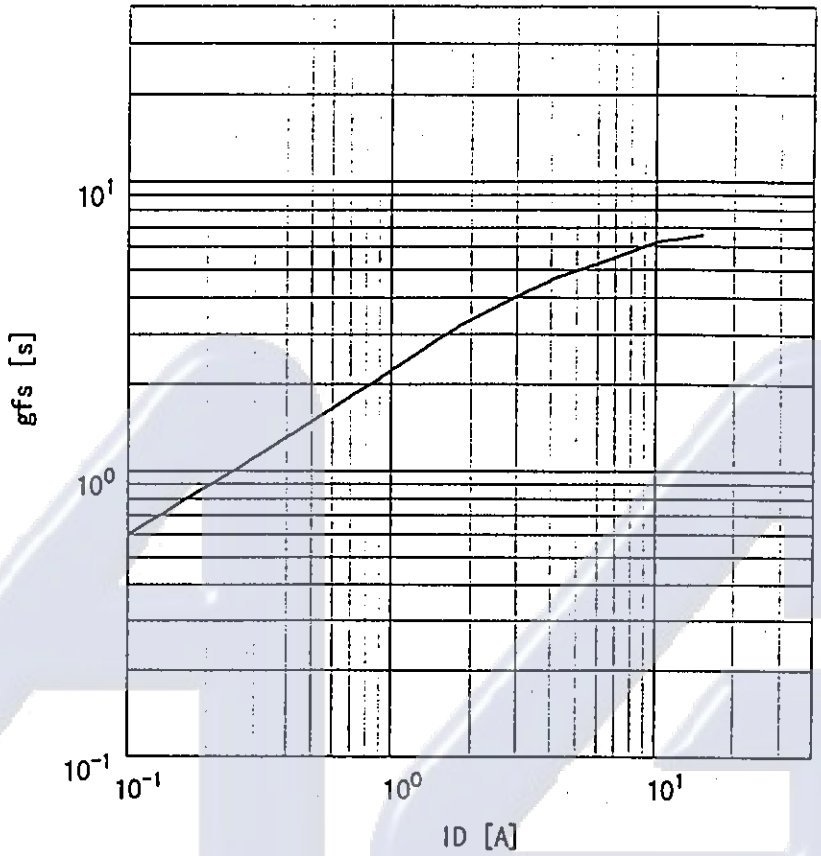
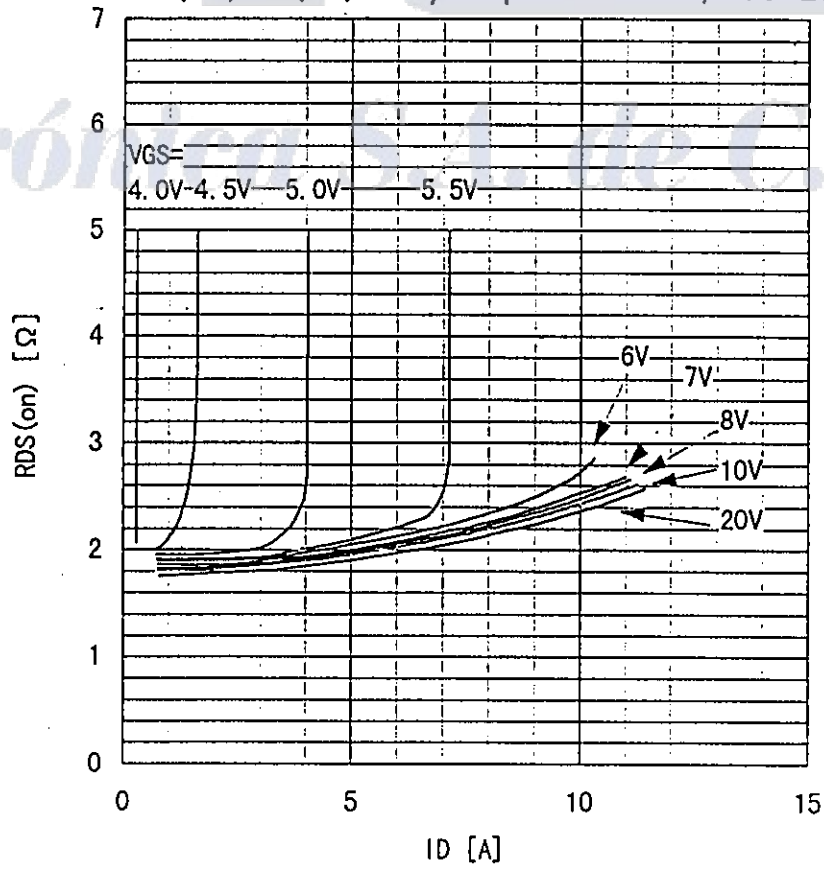
Typical forward transconductance
gfs=f(ID):80μs pulse test, VDS=25V, Tch=25℃



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



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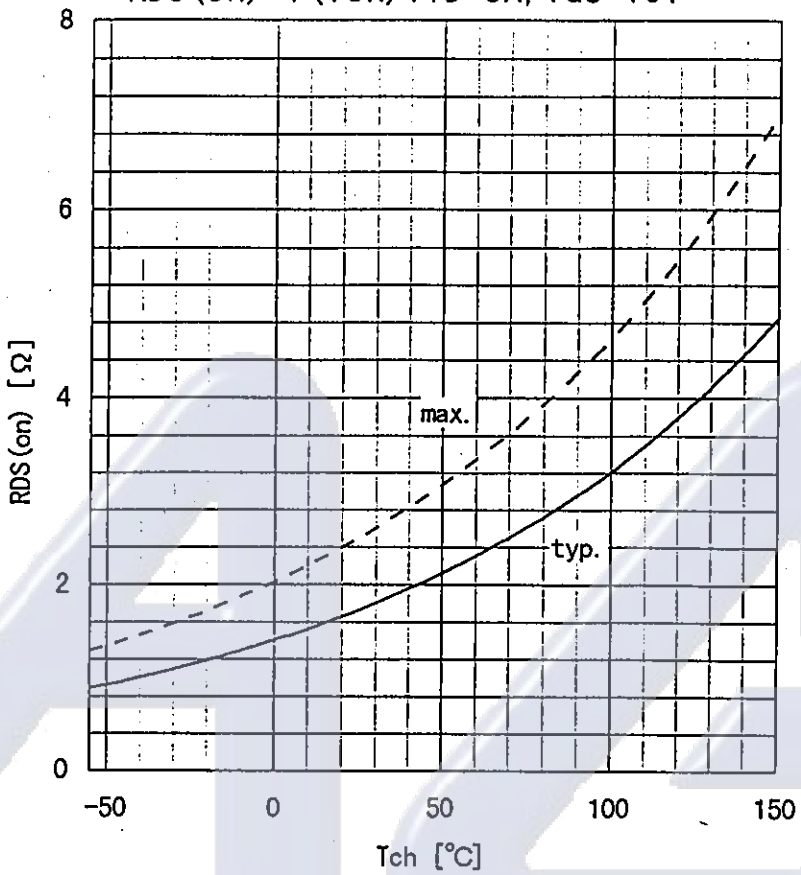
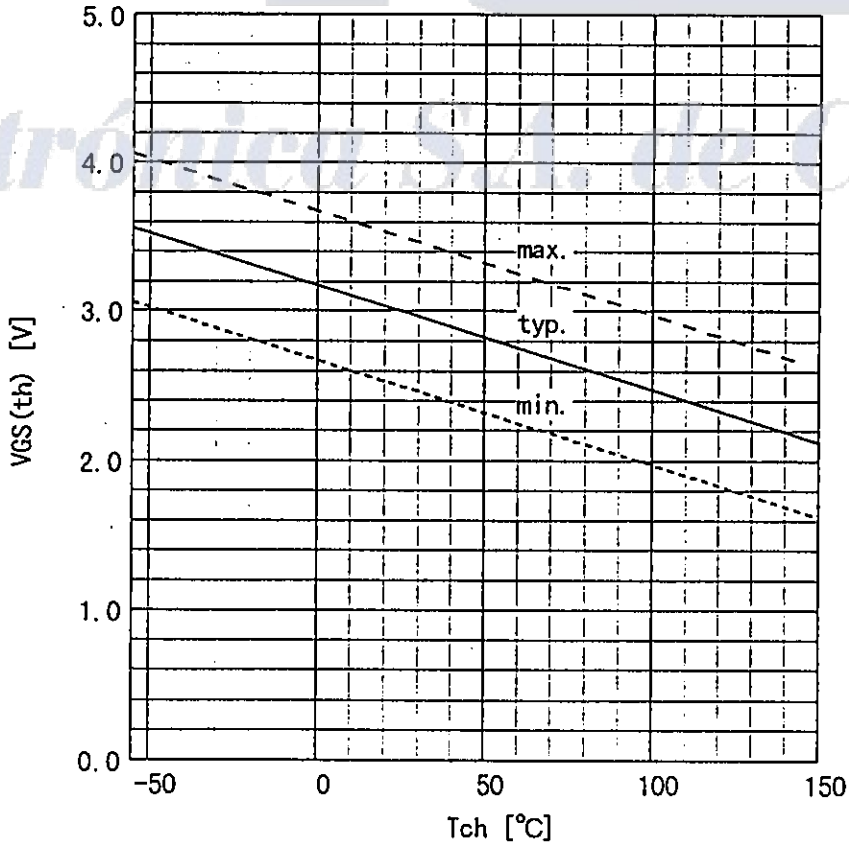
Drain-source on-state resistance

RDS(on)=f(Tch) : ID=3A, VGS=10V



Gate threshold voltage

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



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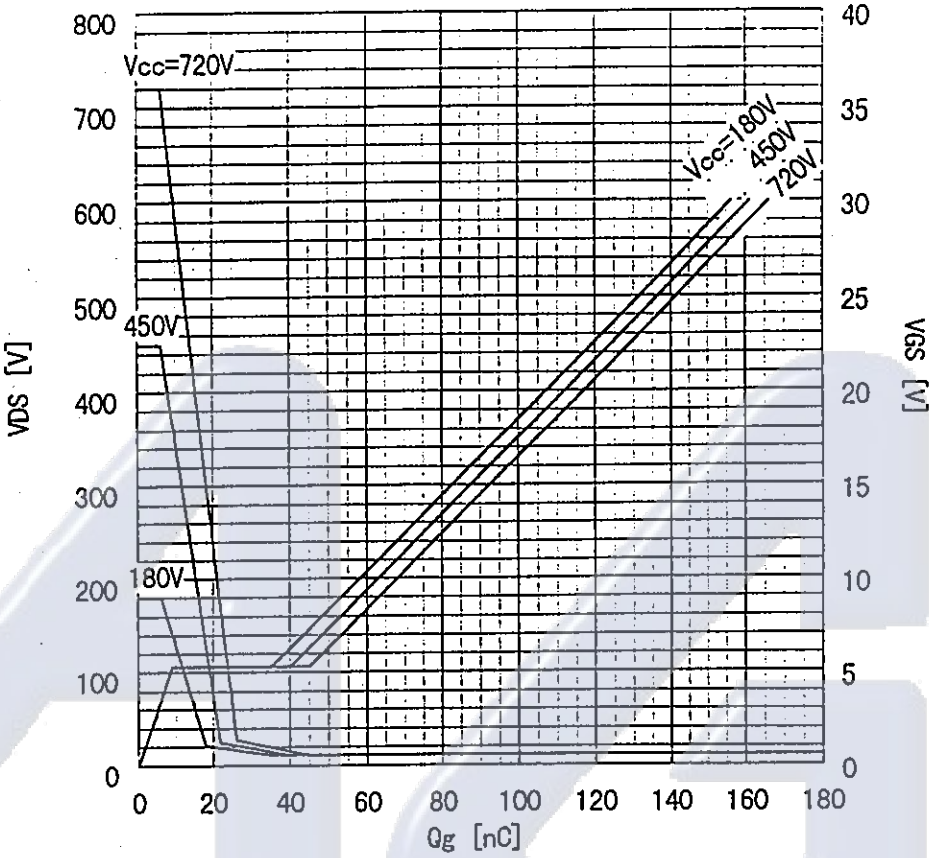
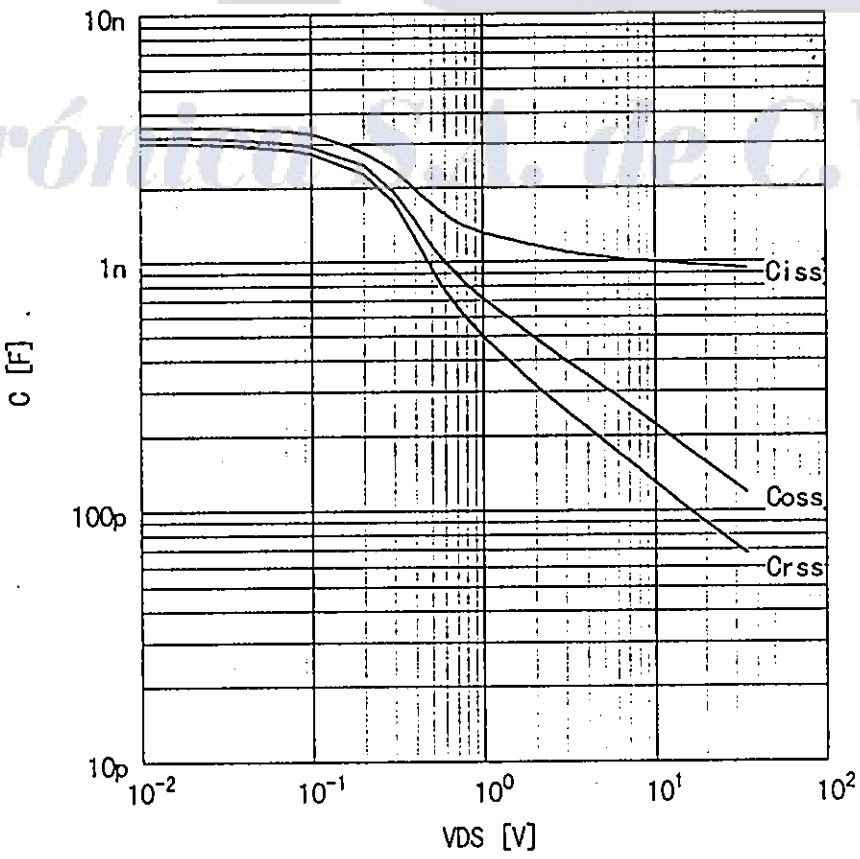
Typical gate charge characteristic
VGS=f(Qg) : ID=6A, Tc=25°C



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



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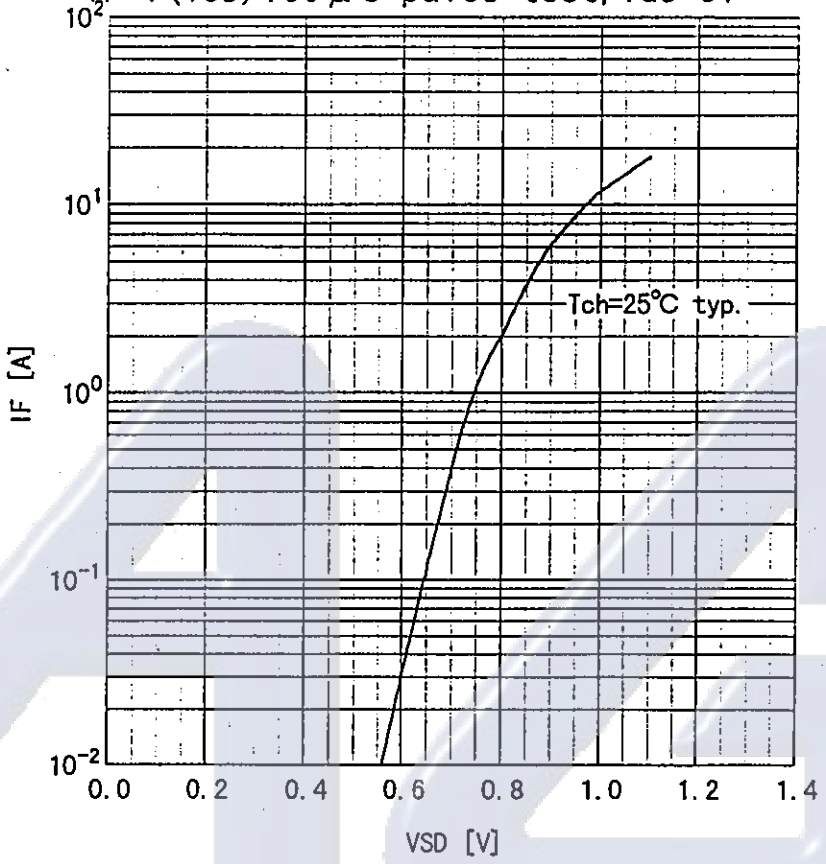
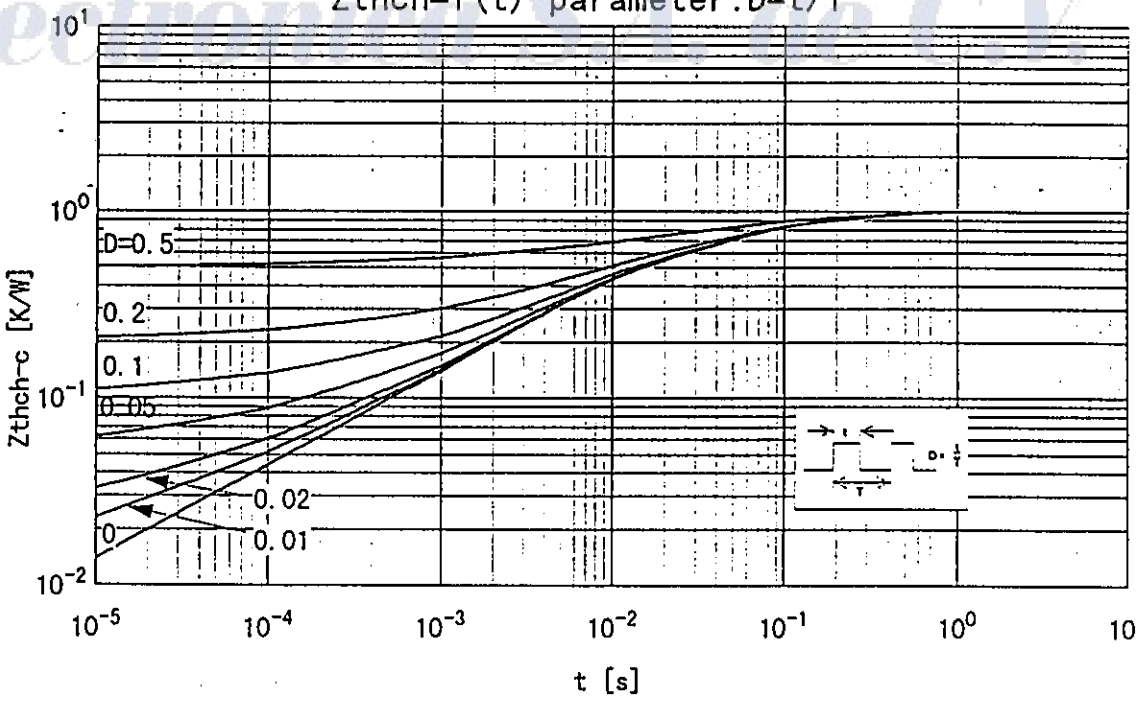
Forward characteristic of reverse of diode

IF=f(VSD) : 80 μs pules test, VGS=0V



Transient thermal impedande

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



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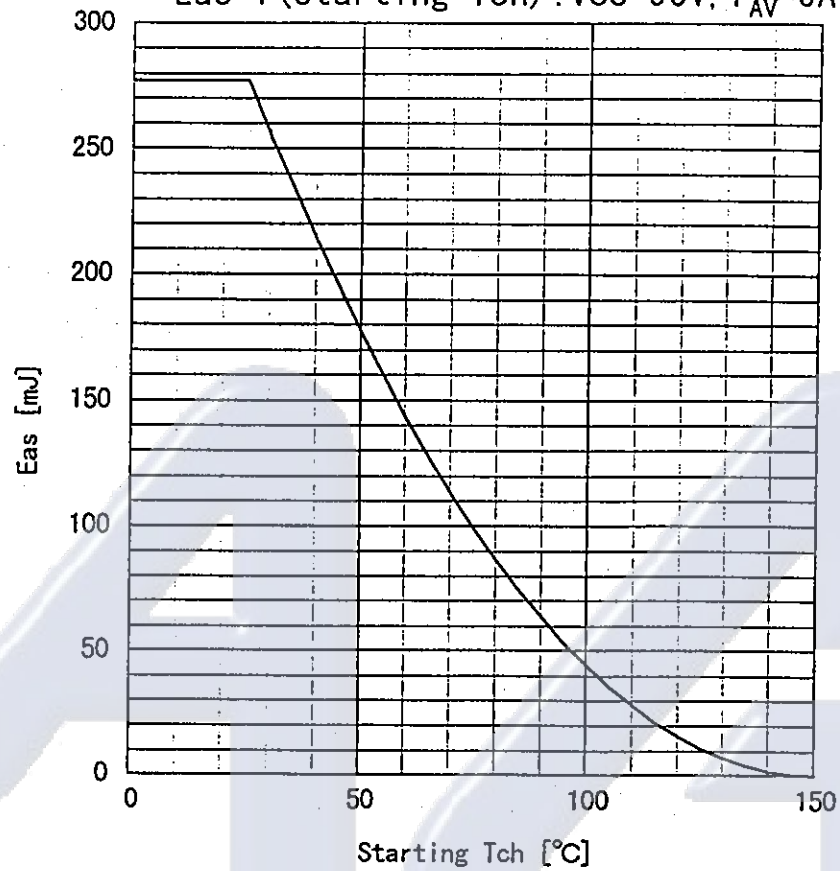
Avalanche energy derating

Eas=f(starting Tch) : Vcc=90V, I_{AV}=6A



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