SPECIFICATION

Device Name : Power MOSFET .

Type Name : 2SK3362-01 .

Spec. No. : .

Fuji Electric Co.,Ltd.
Matsumoto Factory

	DATE	NAME	APPROVED
DRAWN	Feb.-4-'99		
CHECKED			

Fuji Electric Co.,Ltd.

DWG.NO.

H04-004-07

1.Scope This specifies Fuji Power MOSFET 2SK3362-01

2.Construction N-Channel enhancement mode power MOSFET

3.Applications for Switching

4.Outview TO-220 Outview See to 5/13 page

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

Description	Symbol	Characteristics	Unit	Remarks
Drain-Source Voltage	V_{DS}	60	V	
Continuous Drain Current	I_D	±50	A	
Pulsed Drain Current	I_{DP}	±200	A	
Gate-Source Voltage	V_{GS}	±20	V	
Maximum Avalanche Energy	E_{AV}	867	mJ	*1
Maximum Power Dissipation	P_D	80	W	
Operating and Storage	T_{ch}	150	℃	
Temperature range	T_{stg}	-55 to +150	℃	

*1 L=0.463mH,Vcc=24V

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		60			V
Gate Threshold Voltage	$V_{GS}(th)$	I_D=1mA V_{DS}=V_{GS}		1.0	1.5	2.0	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V 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}=±20V V_{DS}=0V			10	100	nA
Drain-Source On-State Resistance	$R_{DS}(on)$	ID=40A	VGS=4V		12	17	mΩ
			VGS=10V		7.5	10	

Dynamic Ratings

Description	Symbol	Conditions	min.	typ.	max.	Unit
Forward Transconductance	g_{fs}	I_D=40A V_{DS}=25V	25.0	55.0		S
Input Capacitance	Ciss	V_{DS}=25V		3500	5250	pF
Output Capacitance	Coss	V_{GS}=0V		1250	1870	
Reverse Transfer Capacitance	Crss	f=1MHz		360	540	
Turn-On Time	td(on)	V_{cc}=30V		15	23	ns
	tr	V_{GS}=10V		75	120	
Turn-Off Time	td(off)	I_D=75A		190	285	
	tf	R_{GS}=10Ω		110	165	

Reverse Diode

Description	Symbol	Conditions	min.	typ.	max.	Unit
Avalanche Capability	I_{AV}	L=100μH Tch=25℃ See Fig.1 and Fig.2	50			A
Diode Forward On-Voltage	V_{SD}	I_F=160A V_{GS}=0V T_{ch}=25℃		1.15	1.65	V
Reverse Recovery Time	trr	I_F=80A V_{GS}=0V		75	120	ns
Reverse Recovery Charge	Qrr	-di/dt=100A/μs T_{ch}=25℃		0.17		μC

7.Thermal Resistance

Description	Symbol	min.	typ.	max.	Unit
Channel to Case	Rth(ch-c)			1.56	℃/W
Channel to Ambient	Rth(ch-a)			75.0	℃/W

Fig.1 Test circuit

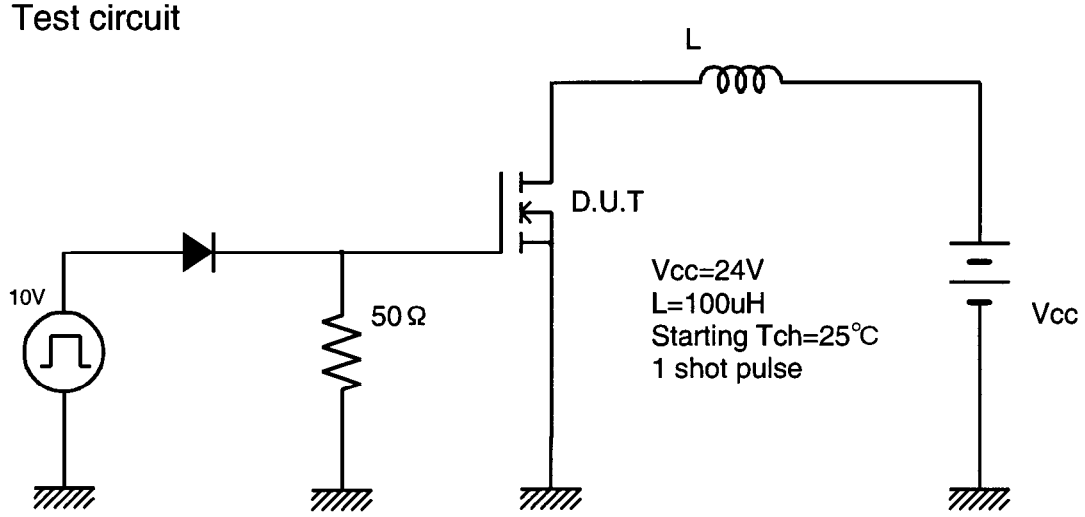
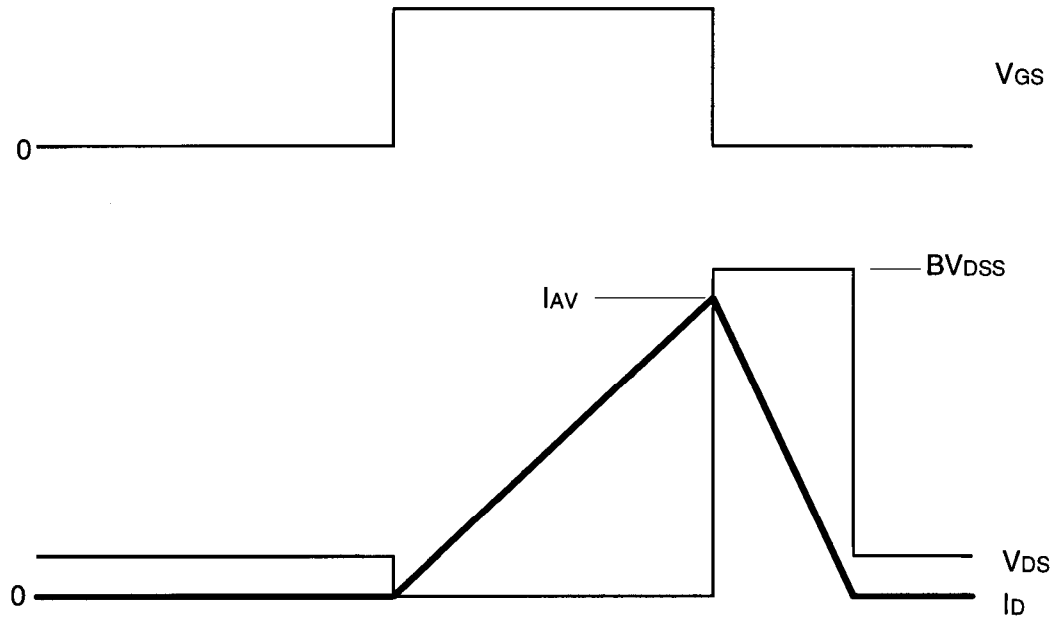
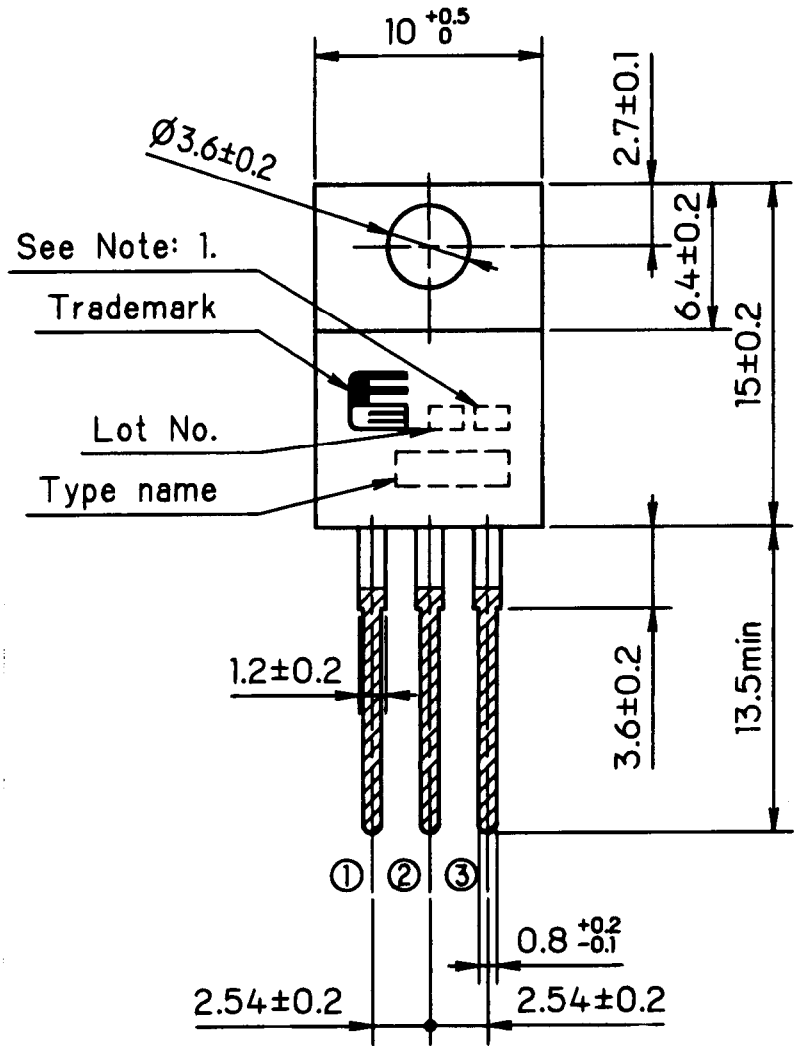
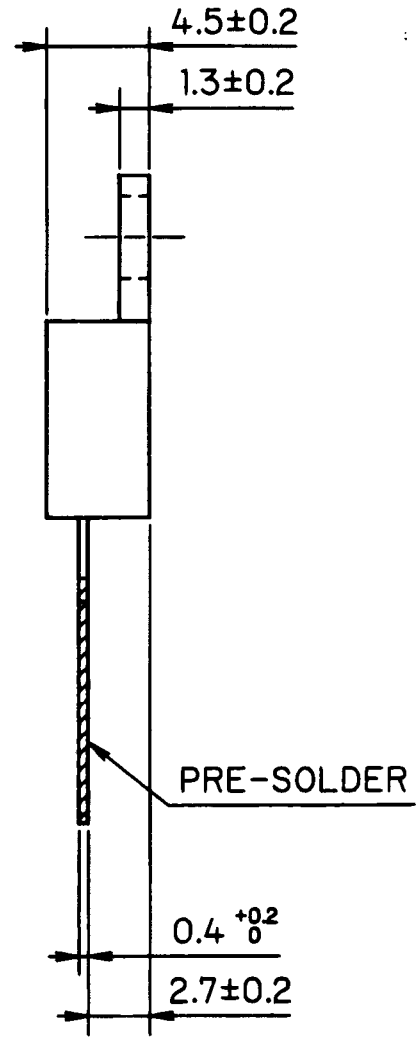
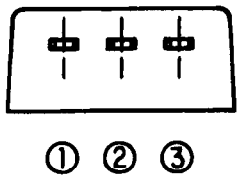


Fig.2 Operating waveforms









CONNECTION

① GATE
② DRAIN
③ SOURCE

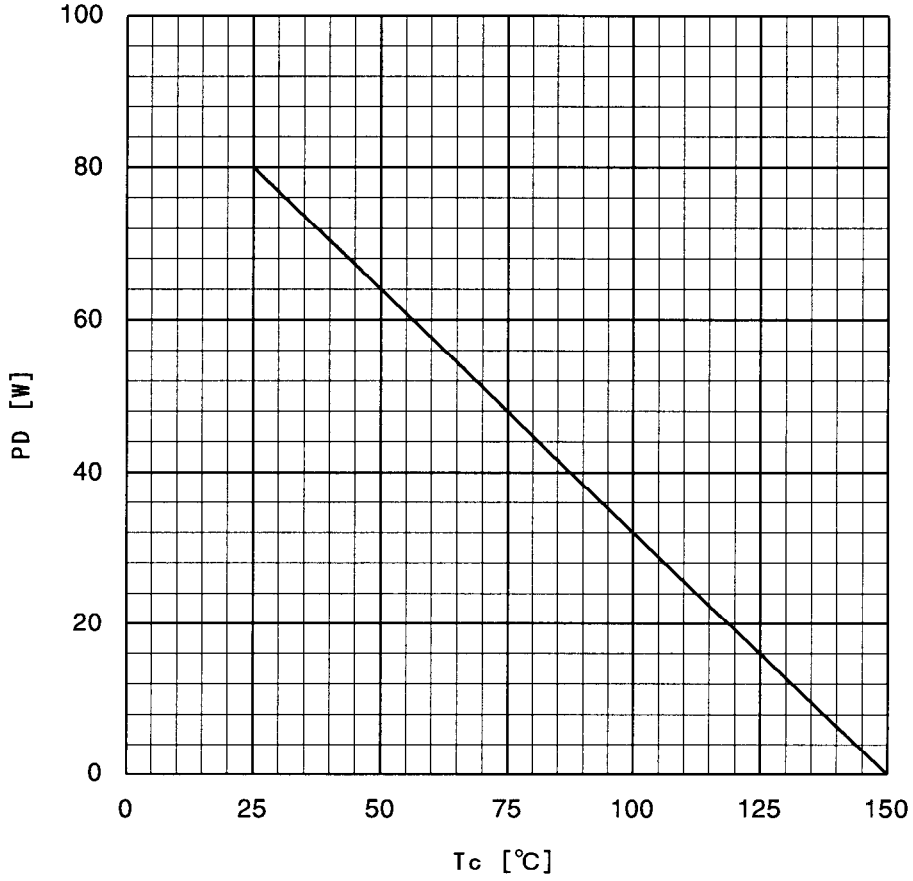
JEDEC : TO-220AB

Note: 1. Guaranteed mark of avalanche ruggedness.

DIMENSIONS ARE IN MILLIMETERS.

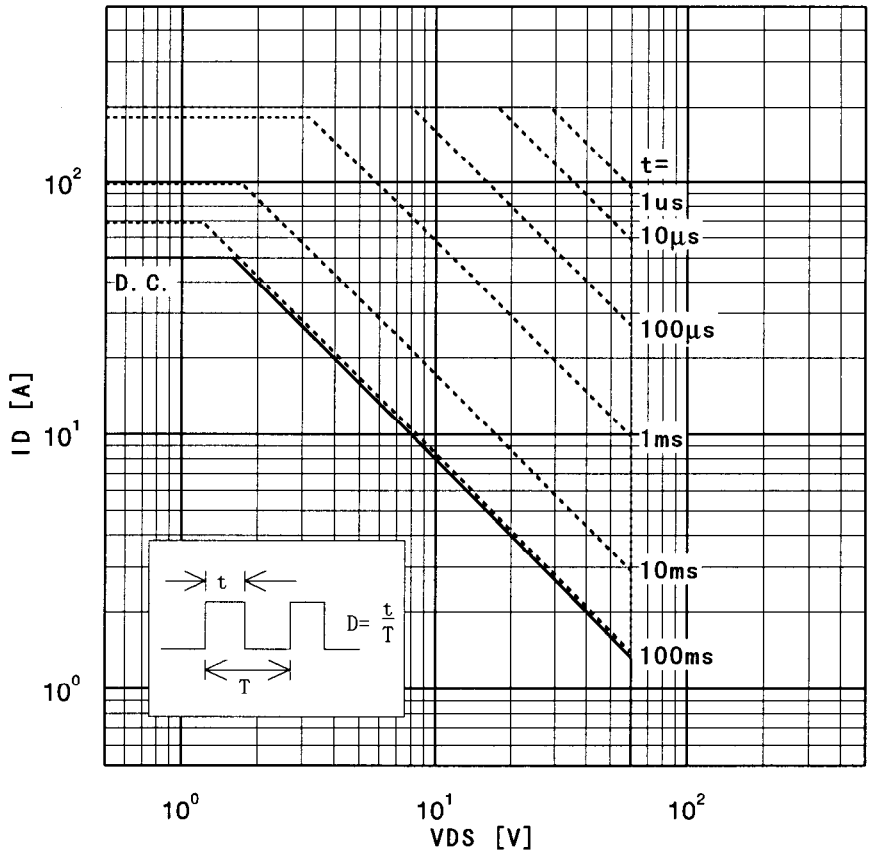
Power Dissipation

PD=f(Tc)



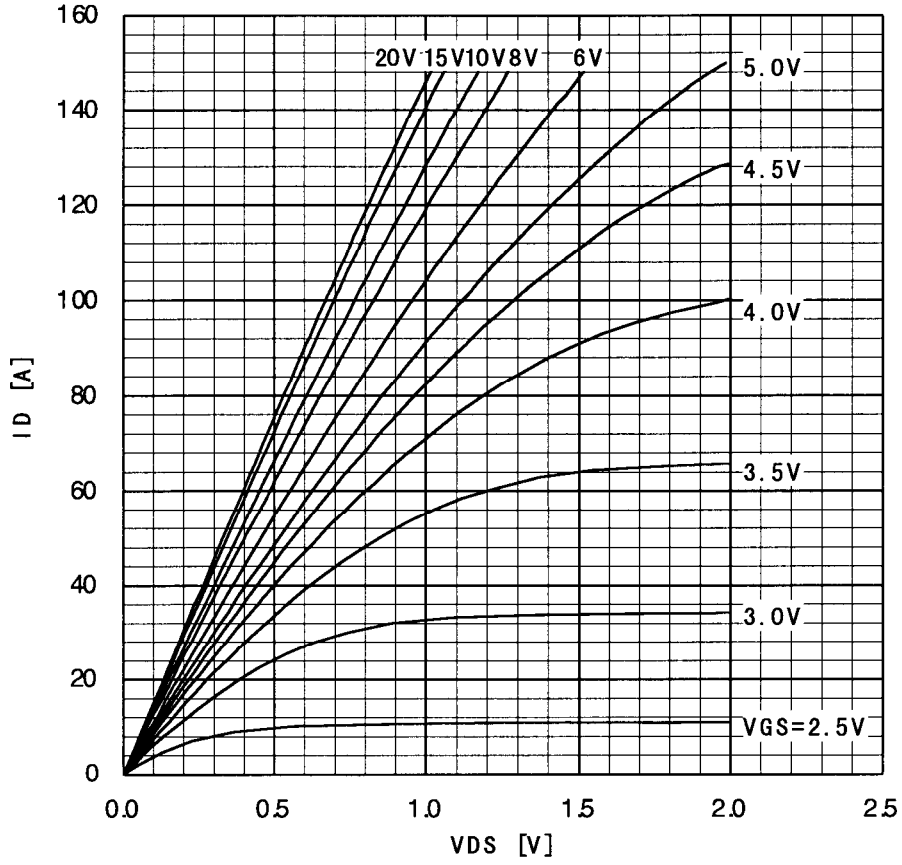
Safe operating area

ID=f(VDS) : D=0.01, Tc=25°C



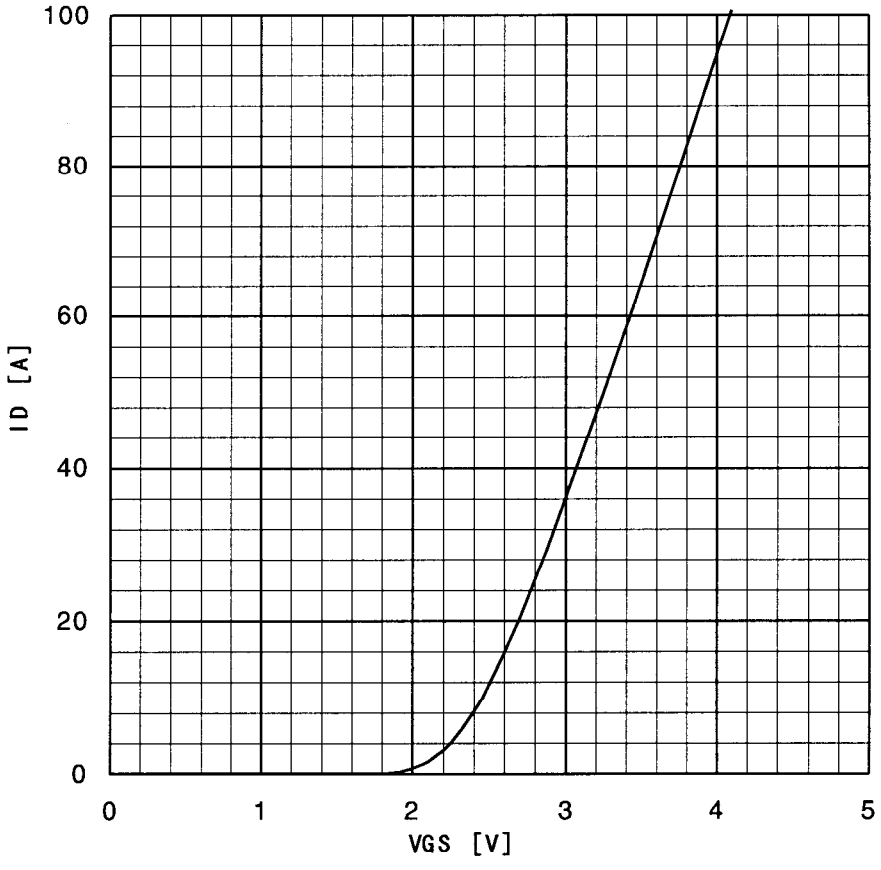
Typical Output Characteristics

ID=f(VDS):80μs pulse test, Tch=25°C



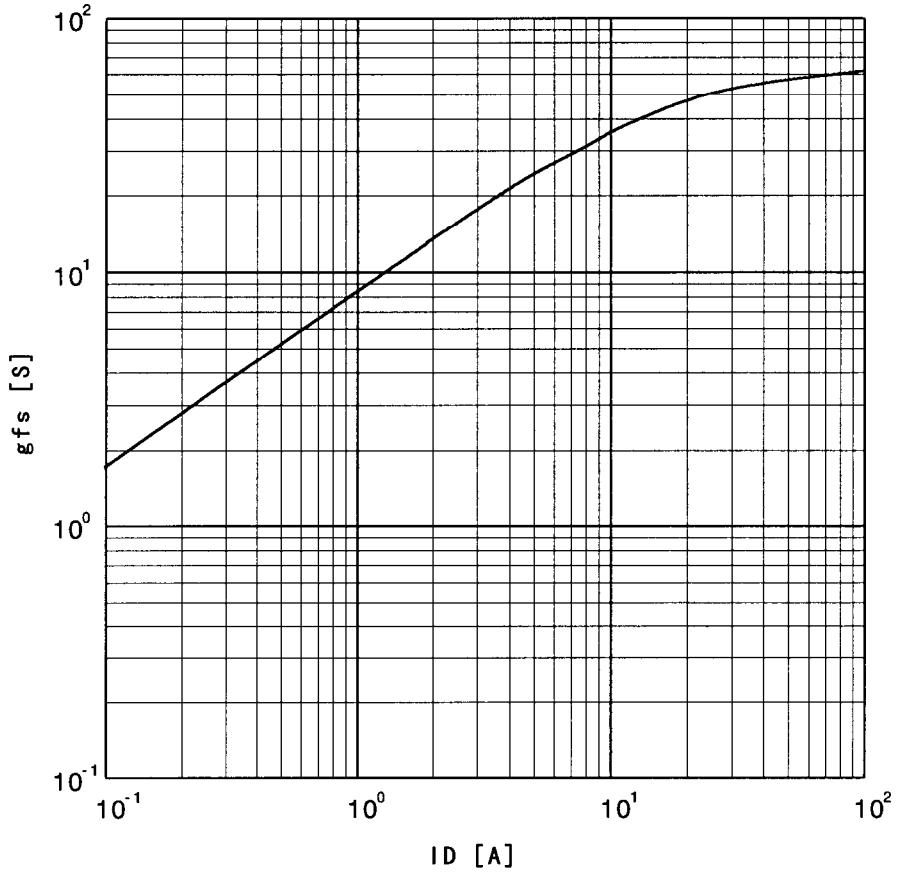
Typical Transfer Characteristic

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



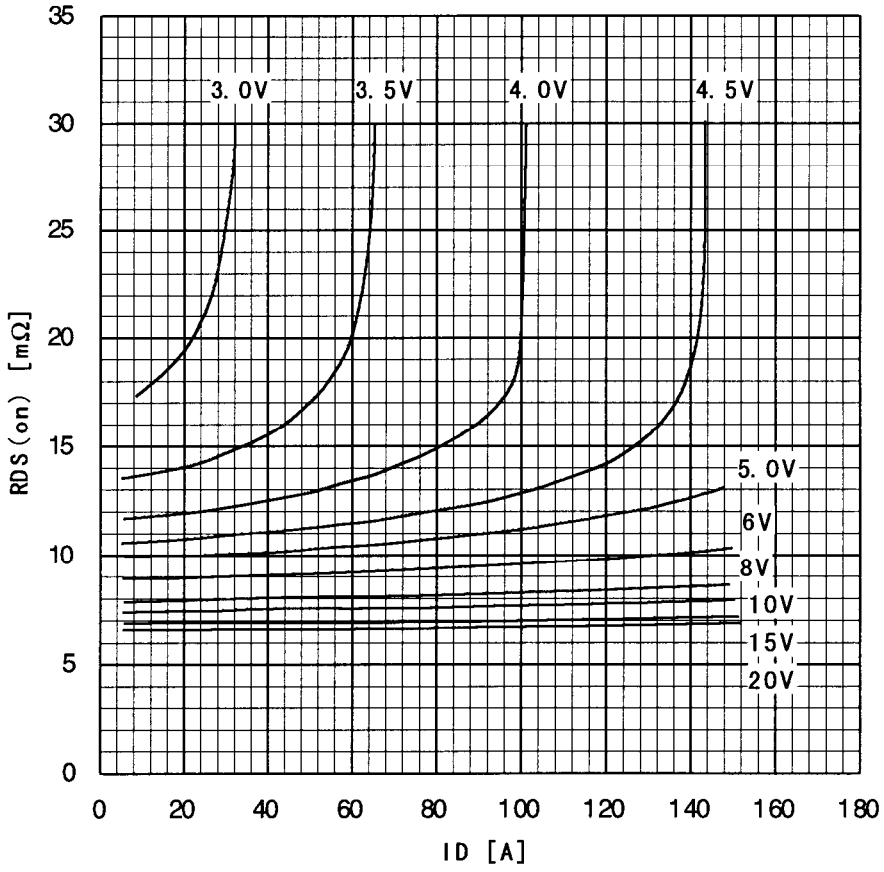
Typical Transconductance

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



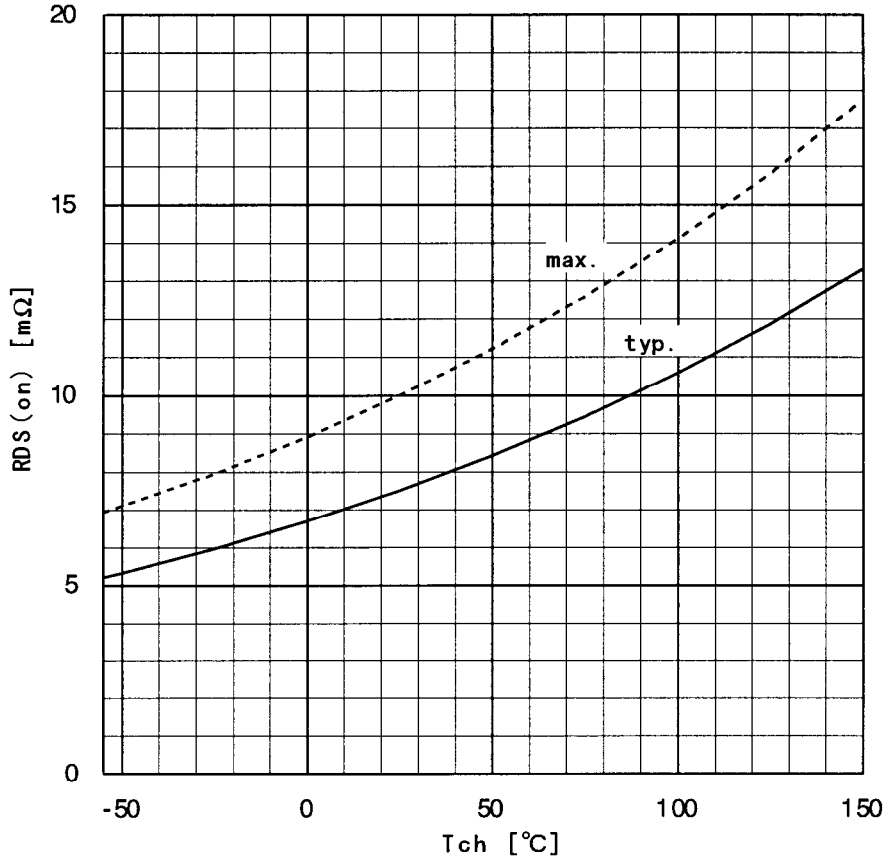
Typical Drain-Source on-State Resistance

RDS(on)=f(ID):80μs pulse test, Tch=25℃



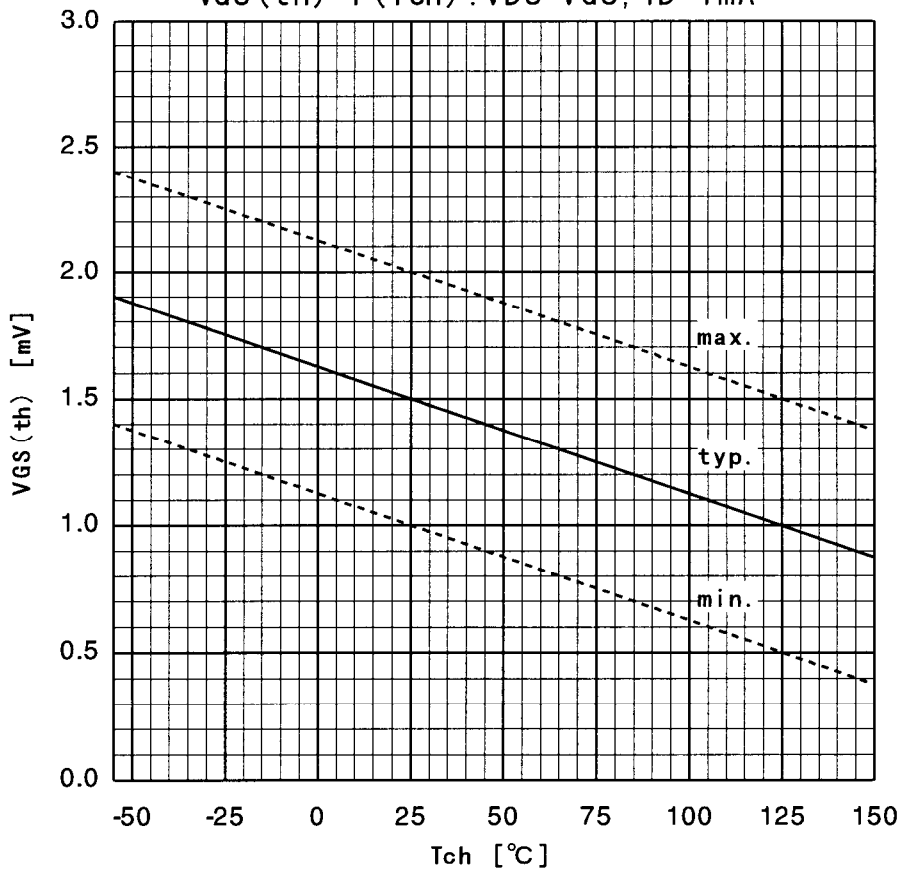
Drain-Source On-state Resistance

RDS(on)=f(Tch) : ID=25A, VGS=10V



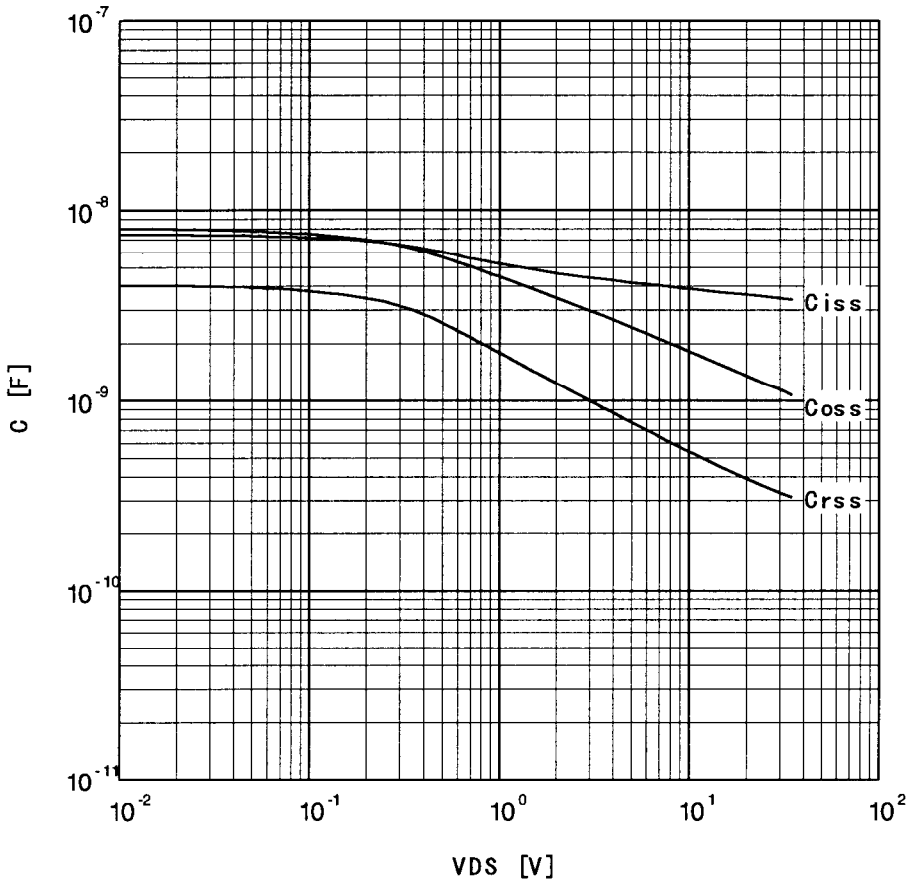
Gate Threshold Voltage vs. Tch

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



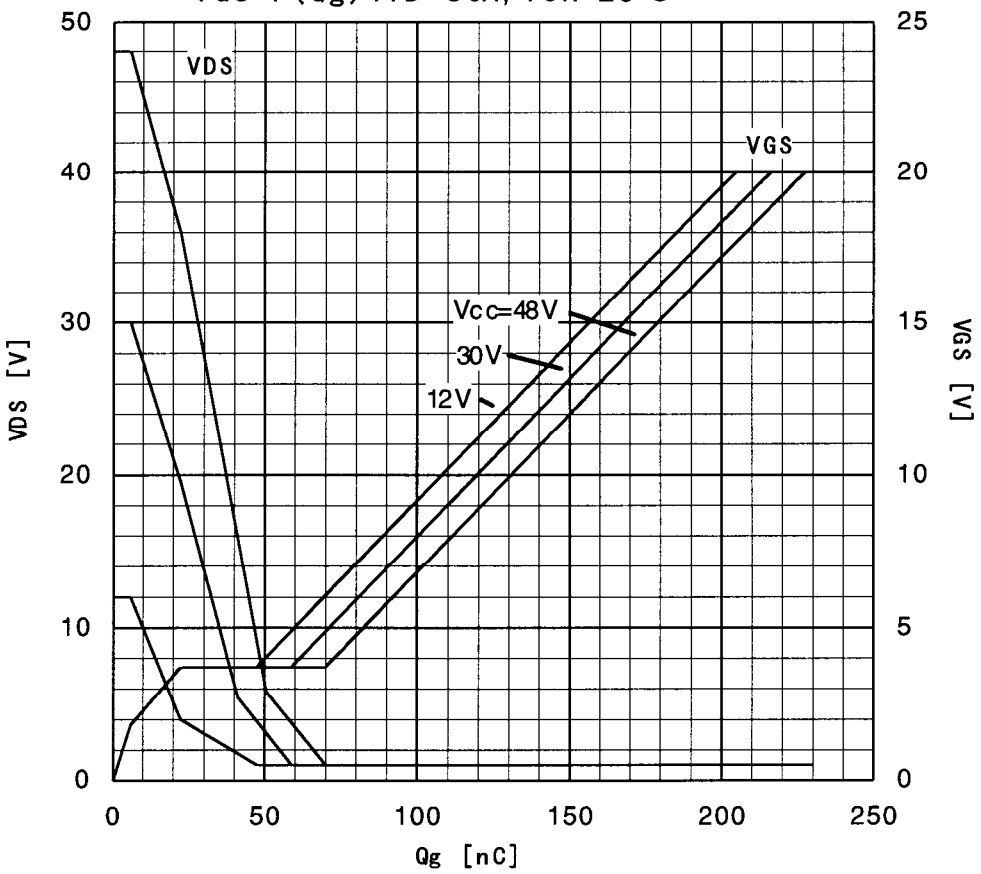
Typical Capacitance

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



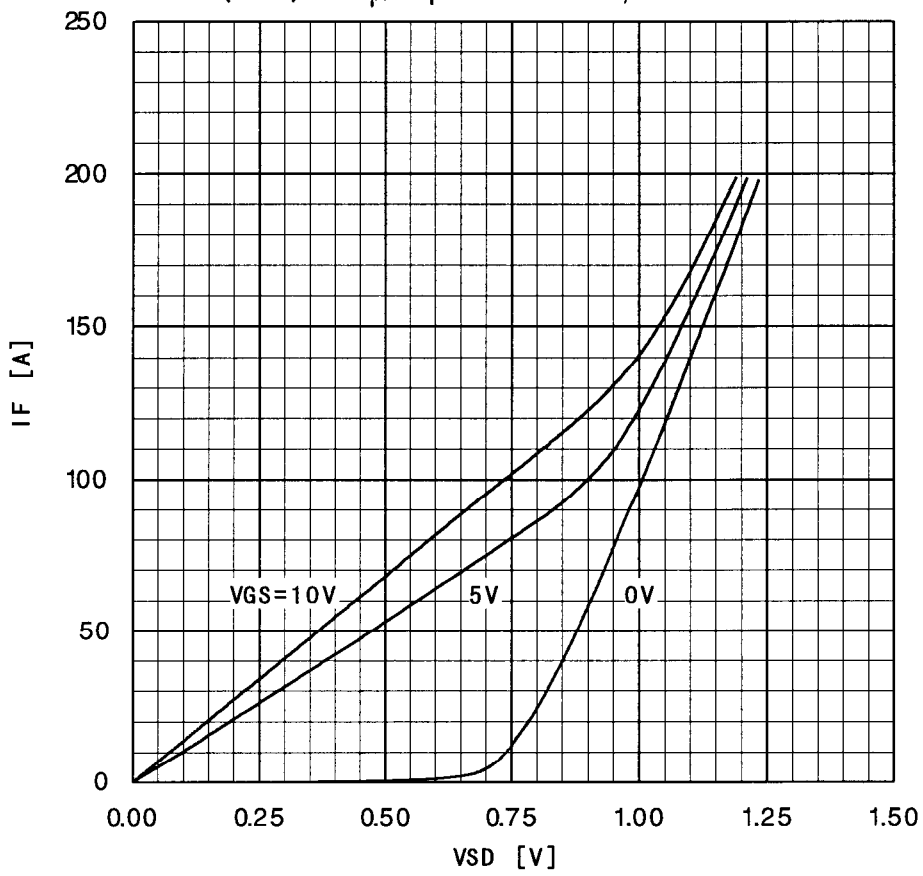
Typical Gate Charge Characteristics

VGS=f(Qg) : ID=80A, Tch=25°C



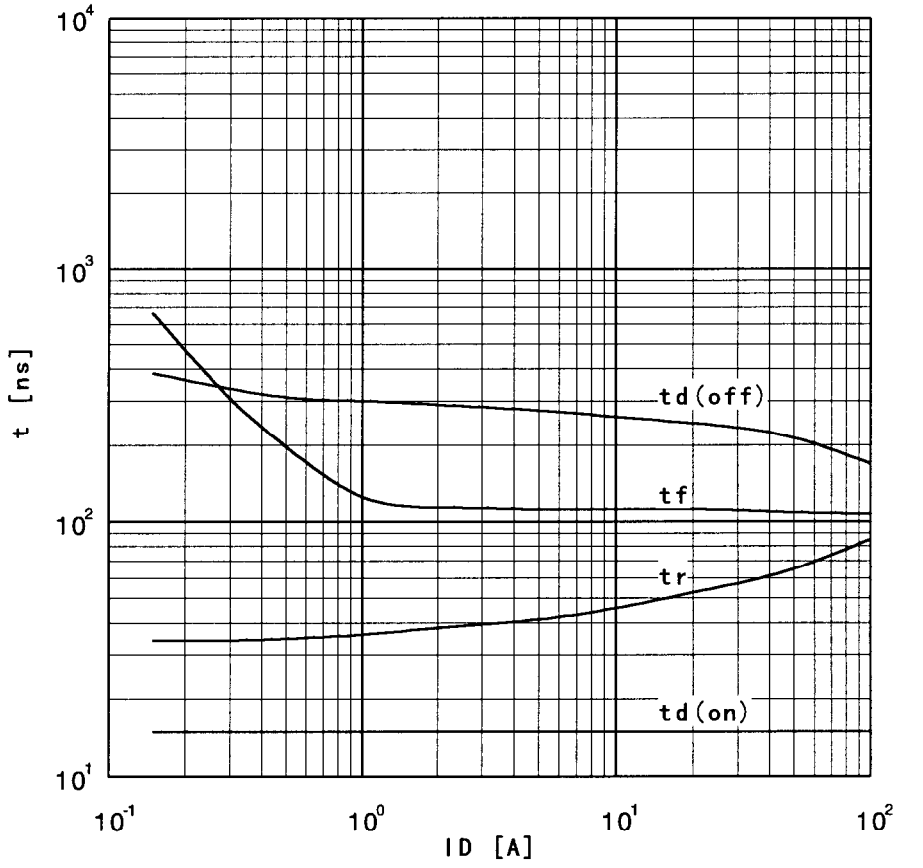
Typical Forward Characteristics of Reverse Diode

IF=f(VSD):80μs pulse test, Tch=25°C



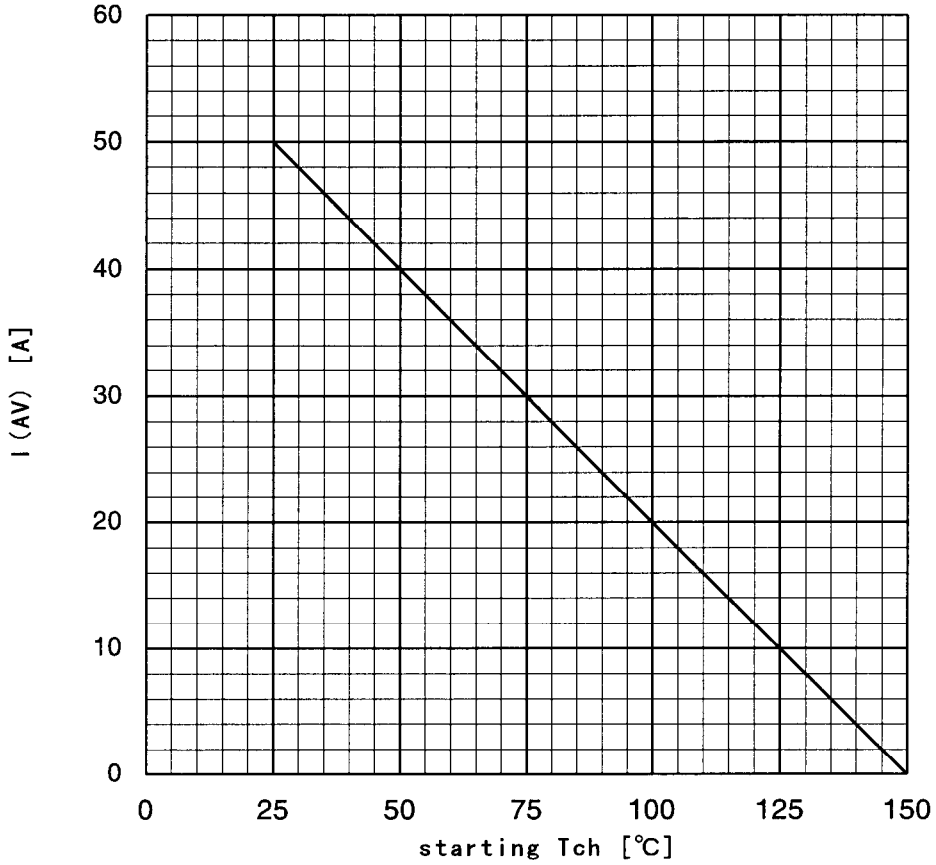
Typical Switching Characteristics vs. ID

t=f(ID):Vcc=30V, VGS=10V, RG=10Ω



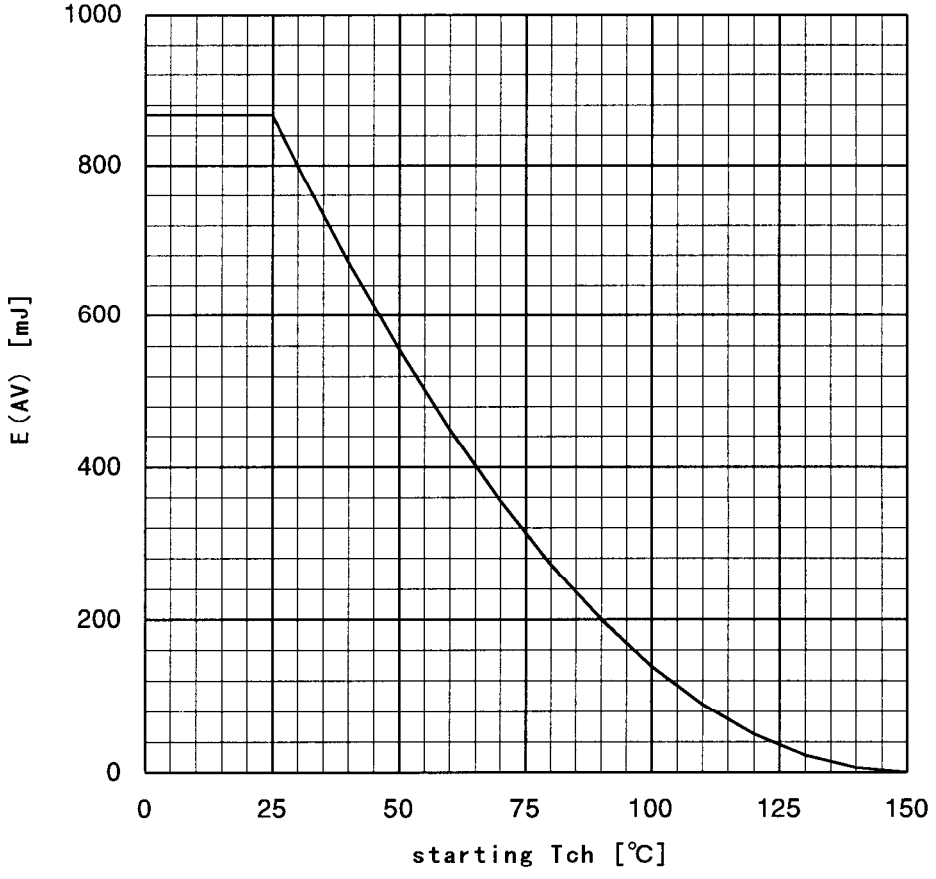
Maximum Avalanche Current vs. starting Tch

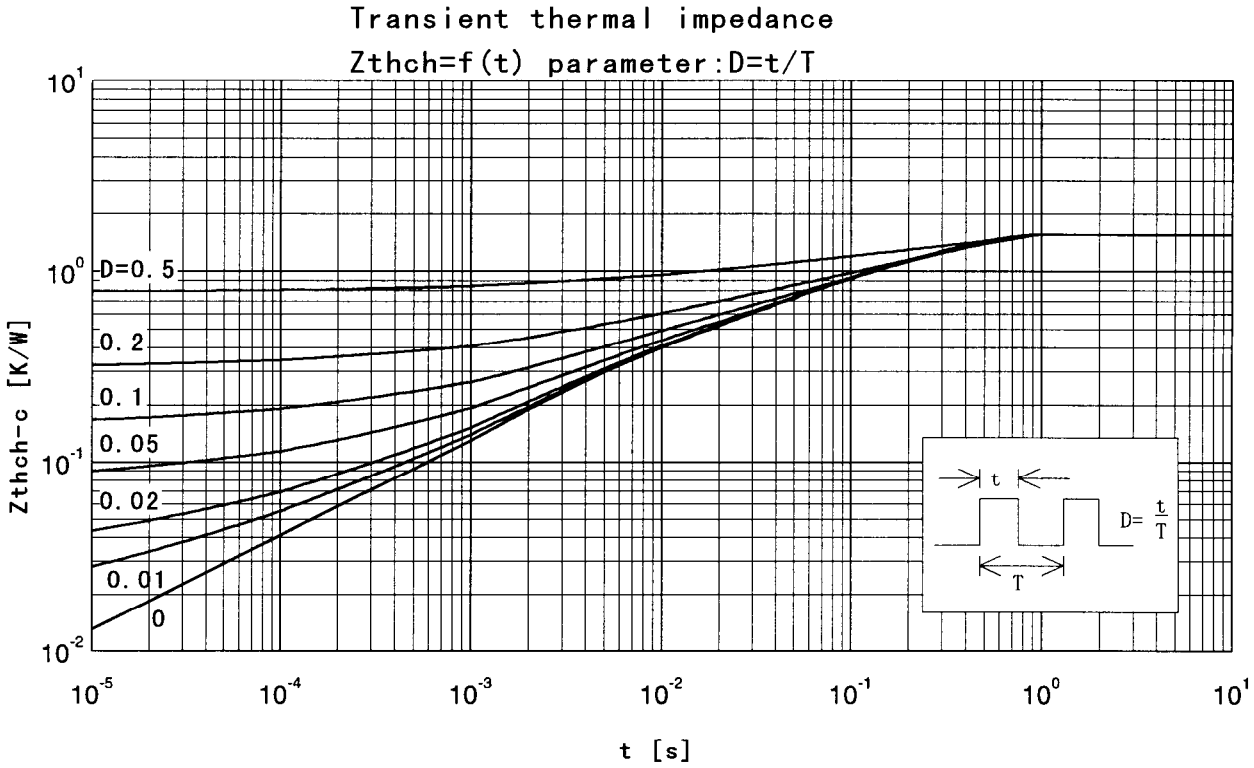
I(AV)=f(starting Tch)



Maximum Avalanche Energy vs. starting Tch

E(AV)=f(starting Tch):Vcc=24V, I(AV)≦50A





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