

# SPECIFICATION

DEVICE NAME : Power MOSFET

TYPE NAME : 2SK2834-01

SPEC. No. :

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Fuji Electric Co., Ltd.  
Matsumoto Factory

This Specification is subject to change without notice.

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

1. Scope  
This specifies Fuji power MOSFET 2SK2834-01
2. Construction N-channel enhancement mode power MOSFET
3. Application for switching
4. Outview T0-3P Outview See to 5/12 page
5. Absolute maximum ratings at  $T_c=25^\circ\text{C}$  (unless otherwise specified)

Description	Symbol	Characteristics	Unit	
Drain-source voltage	$V_{DS}$	600	V	
Continuous Drain current	$I_D$	$\pm 9$	A	
Pulsed drain current	$I_{D\text{PULSE}}$	$\pm 32$	A	
Gate-source voltage	$V_{GS}$	$\pm 35$	V	
Repetitive or non-repetitive	$I_{AR}$	9	V	$T_{ch} \leq 150^\circ\text{C}$
Avalanche energy	$E_{AS}$	162.3	mJ	See page 12/12 ※
Maximum power dissipation	$P_D$	80	W	
Operating and storage temperature range	$T_{ch}$	150	$^\circ\text{C}$	
	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$	

※  $L=3.67\text{mH}$  ,  $V_{CC}=60\text{V}$

6. Electrical characteristics at  $T_c=25^\circ\text{C}$  (unless otherwise specified)
- Static ratings

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Drain-source breakdown voltage	$B V_{DSS}$	$I_D = 1\text{mA}$ $V_{GS} = 0\text{V}$	600			V
Gate threshold voltage	$V_{GS(th)}$	$I_D = 1\text{mA}$ $V_{DS} = V_{GS}$	3.5	4.0	4.5	V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 600\text{V}$ $V_{GS} = 0\text{V}$	$T_{ch} = 25^\circ\text{C}$			$\mu\text{A}$
	$I_{DSS}$		$T_{ch} = 125^\circ\text{C}$			mA
Gate-source leakage current	$I_{GSS}$	$V_{GS} = \pm 35\text{V}$ $V_{DS} = 0\text{V}$		10	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	$I_D = 4.5\text{A}$ $V_{GS} = 10\text{V}$		1.0	1.2	$\Omega$

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2/12

H04-004-03

Dynamic ratings

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Forward transconductance	$g_{fs}$	$I_D = 4.5A$ $V_{DS} = 25V$	2.5	5.0		S
Input capacitance	$C_{iss}$	$V_{DS} = 25V$ $V_{GS} = 0V$ $f = 1MHz$		900	1400	pF
Output capacitance	$C_{oss}$			150	230	pF
Reverse transfer capacitance	$C_{rss}$			70	110	pF
Turn-on time	$t_{d(on)}$	$V_{CC} = 300V$ $V_{GS} = 10V$ $I_D = 9A$ $R_{GS} = 10\Omega$		25	40	ns
	$t_r$			70	110	ns
Turn-off time	$t_{d(off)}$			60	90	ns
	$t_f$			35	60	ns

Reverse diode

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Avalanche capability	$I_{AV}$	$L = 3.67mH, T_{ch} = 25^\circ C$ *See Fig.1 and 2	9			A
Diode forward on-voltage	$V_{SD}$	$I_F = 2 \times I_{DR}$ $V_{GS} = 0V, T_{ch} = 25^\circ C$		1.0	1.5	V
Reverse recovery time	$t_{rr}$	$I_F = I_{DR}$ $V_{GS} = 0V$ $-di_F/dt = 100A/\mu s$ $T_{ch} = 25^\circ C$		550		ns
Reverse recovery charge	$Q_{rr}$				7.0	

7. Thermal resistance

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Thermal resistance	$R_{th_{ch-c}}$				1.56	$^\circ C/W$
	$R_{th_{ch-a}}$				35.0	$^\circ C/W$

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Fig.1 Test circuit

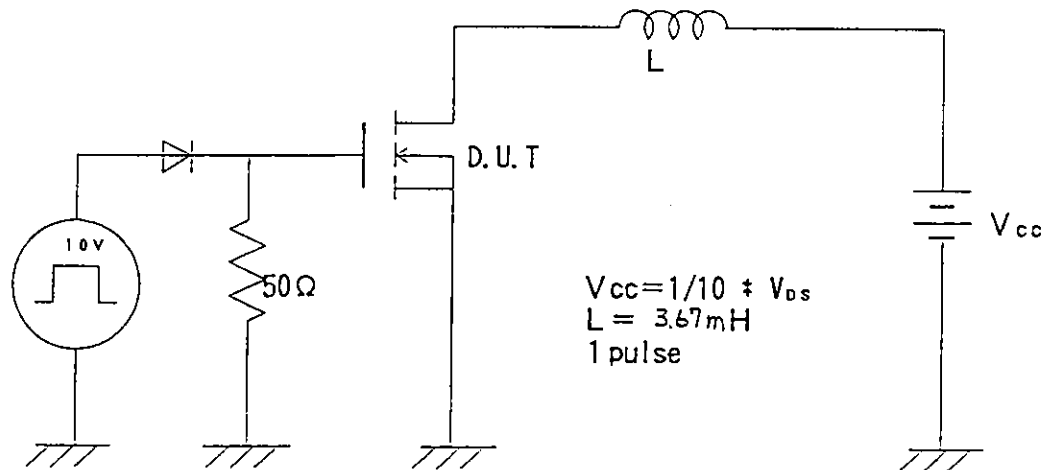
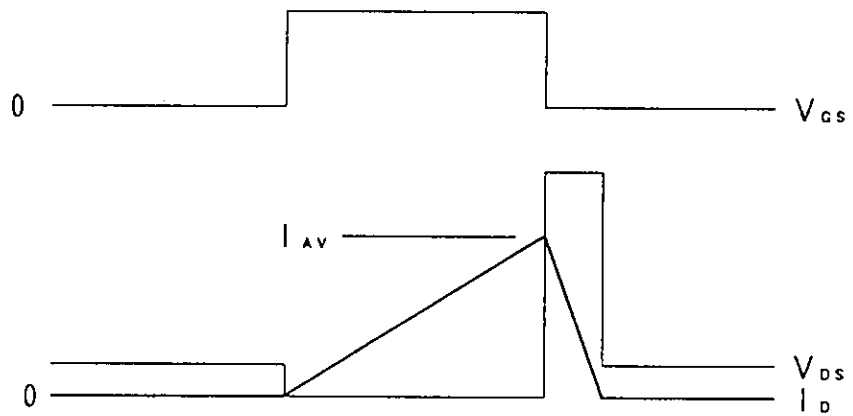
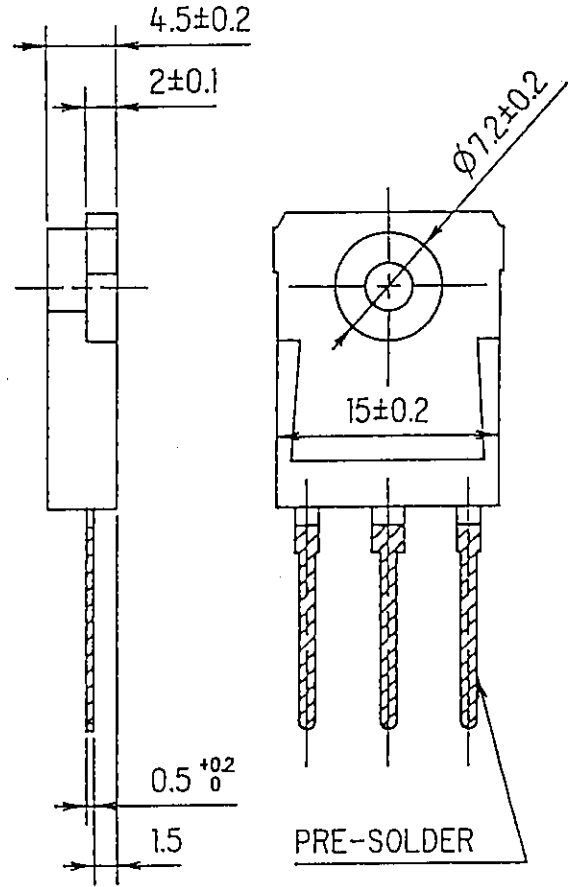
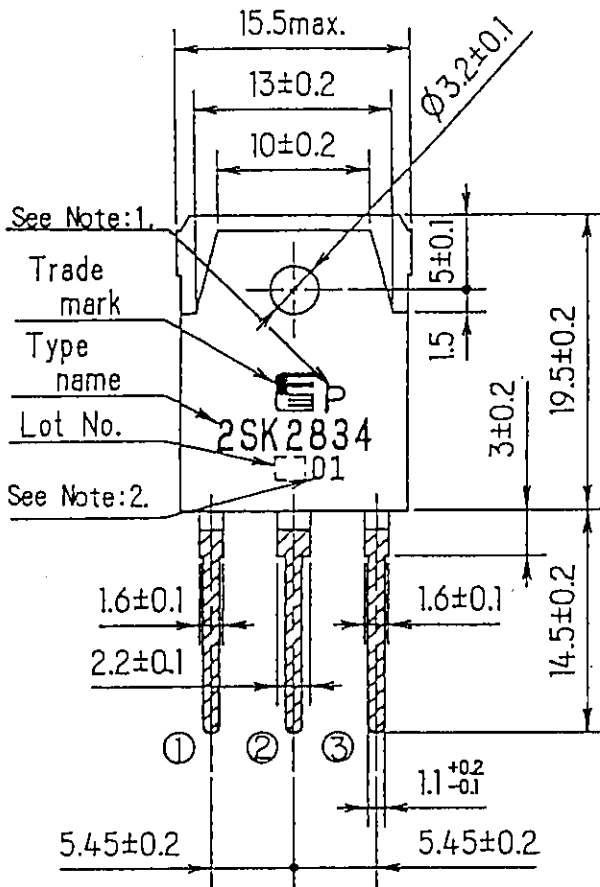


Fig.2 Operating waveforms

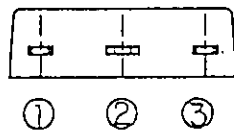


# FUJI POWER MOS FET

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.

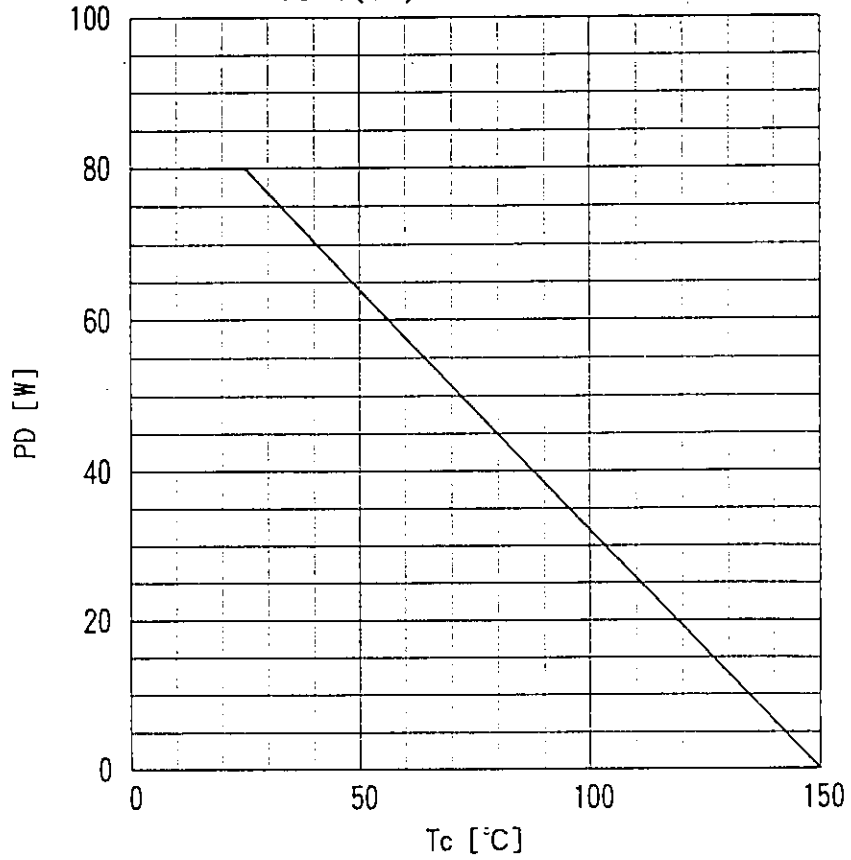
2. Guaranteed mark of avalanche ruggedness.

JEDEC : TO-247  
 EIAJ : SC-65

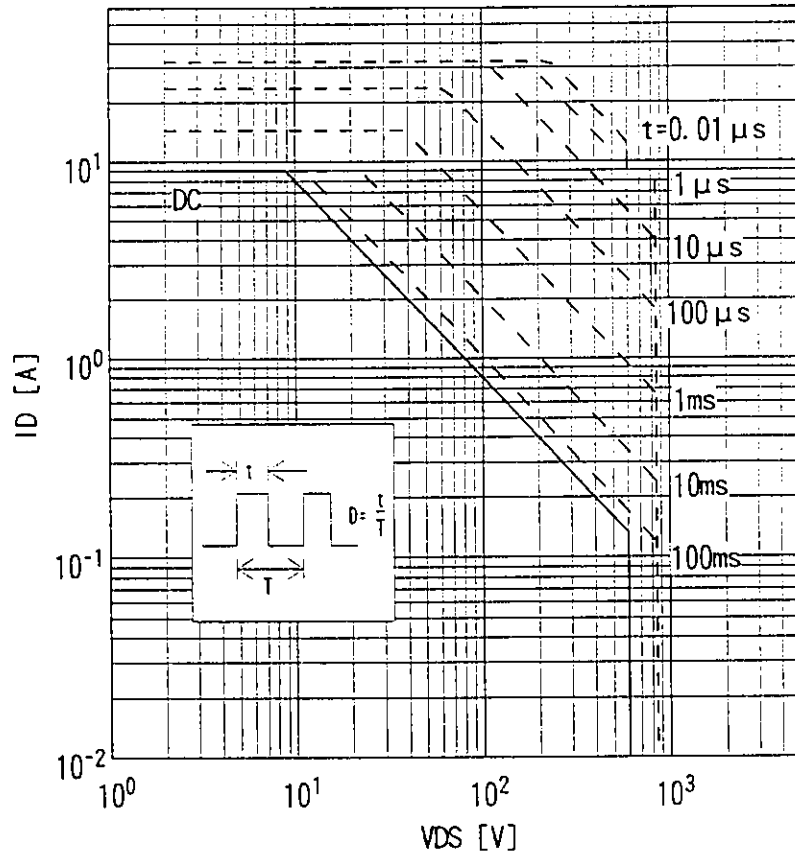
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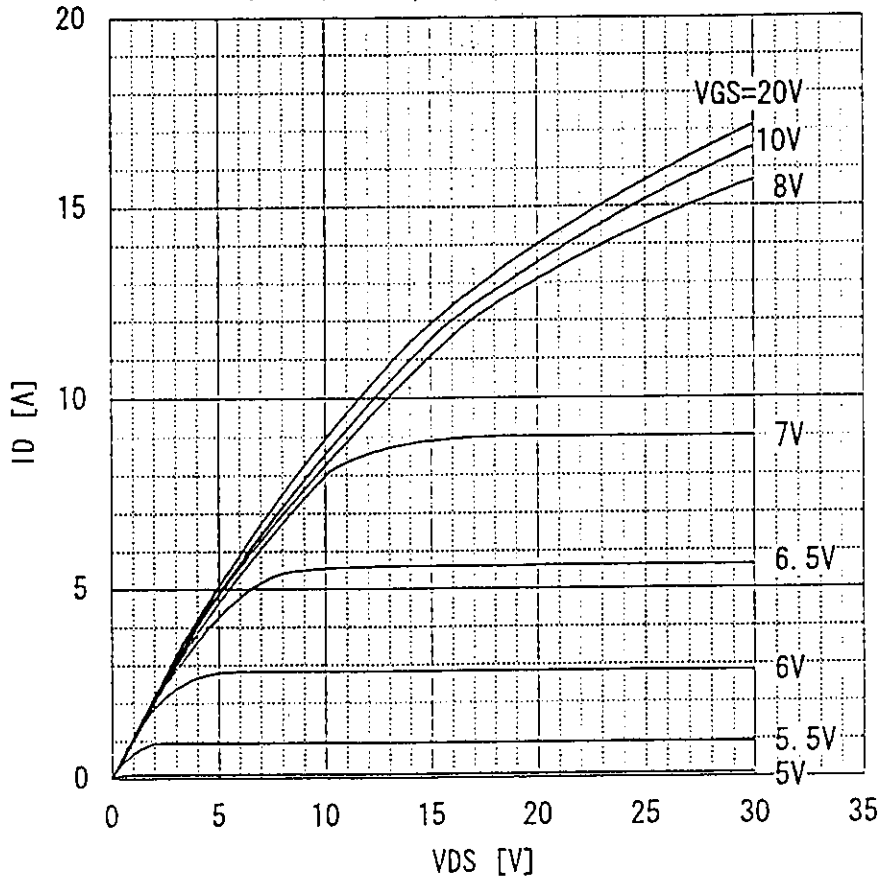
Power Dissipation  
 $PD=f(T_c)$



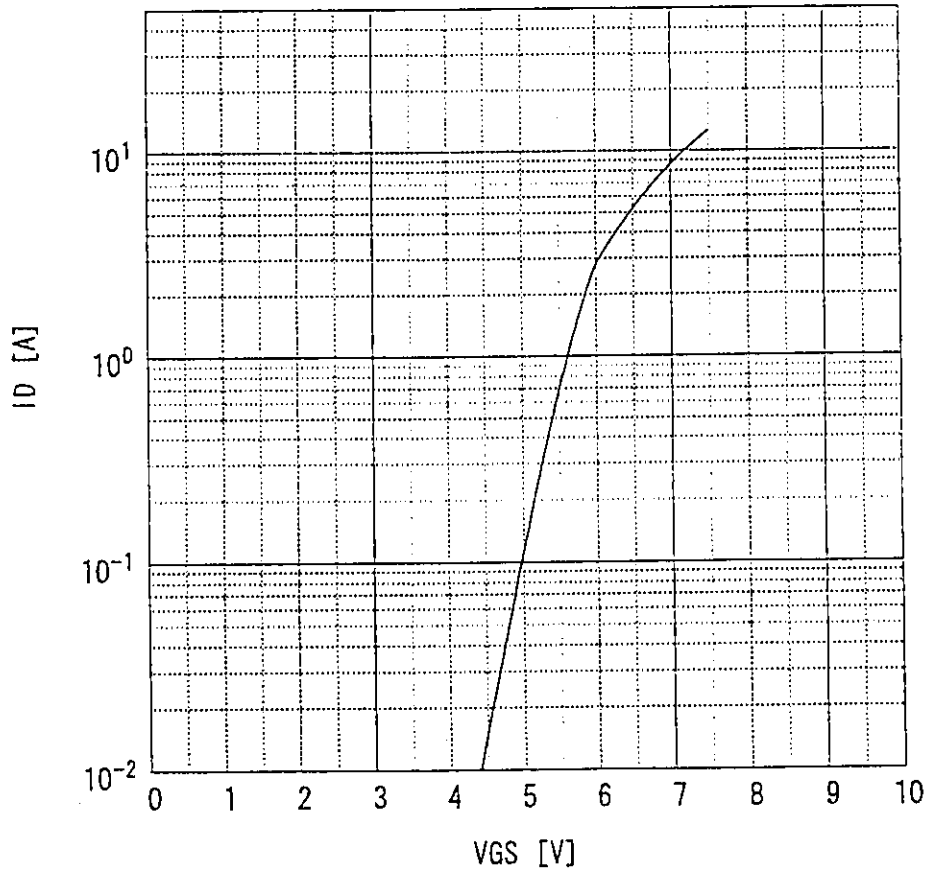
Safe operating area  
 $ID=f(V_{DS}): D=0.01, T_c=25^\circ C$



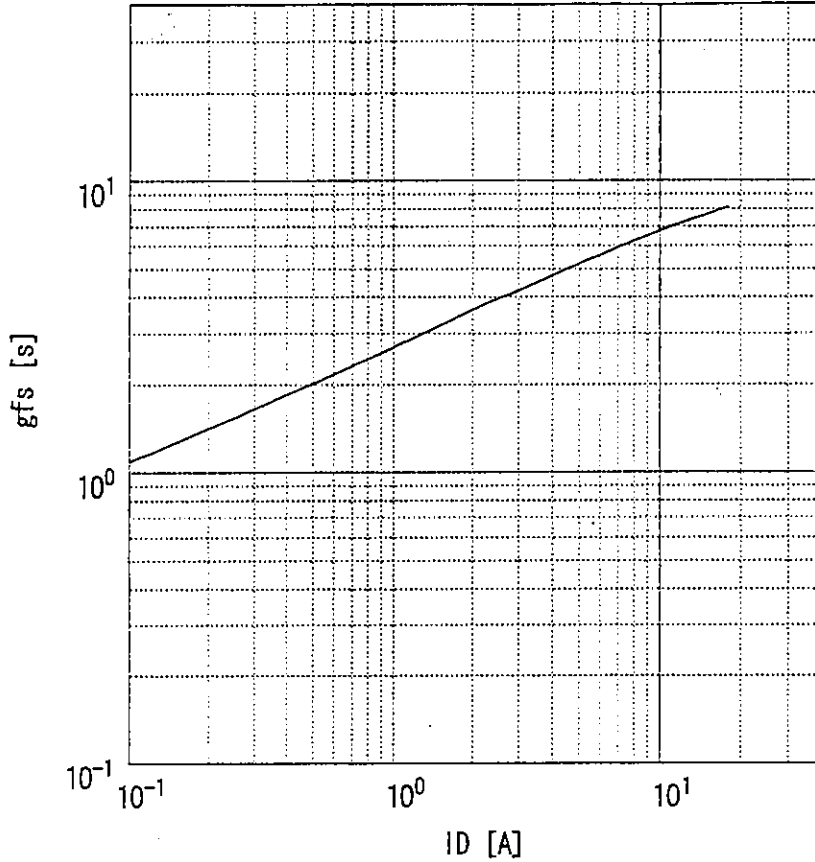
Typical output characteristics  
 $I_D = f(V_{DS}) : 80 \mu s$  pulse test,  $T_c = 25^\circ C$



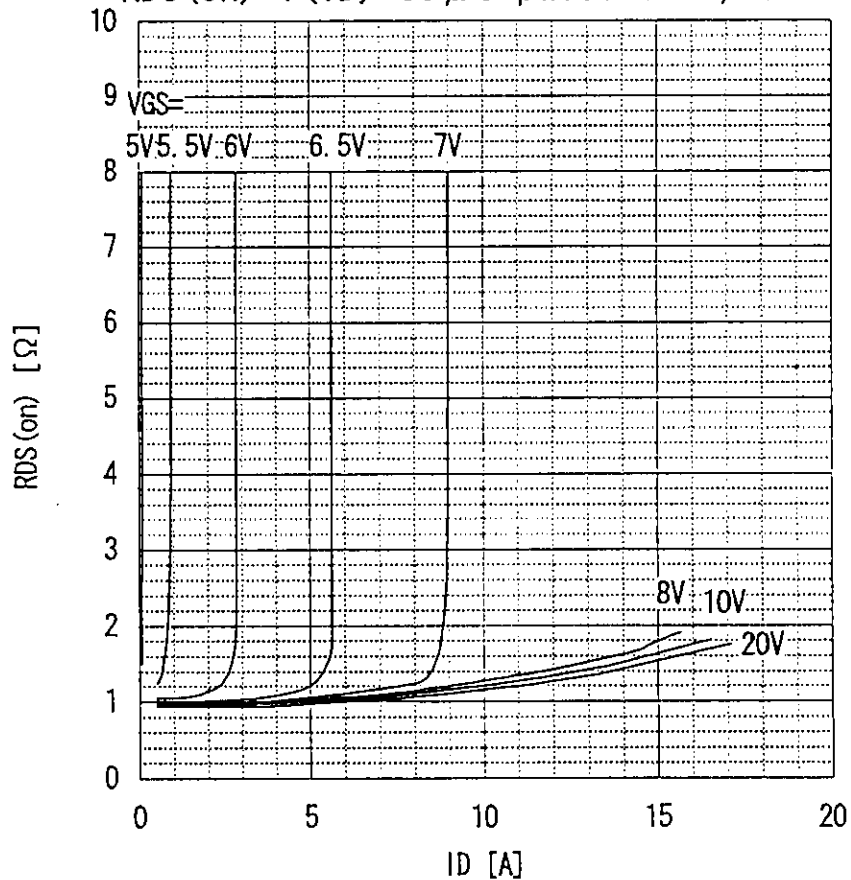
Typical transfer characteristic  
 $I_D = f(V_{GS}) : 80 \mu s$  pulse test,  $V_{DS} = 25V$ ,  $T_{ch} = 25^\circ C$



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

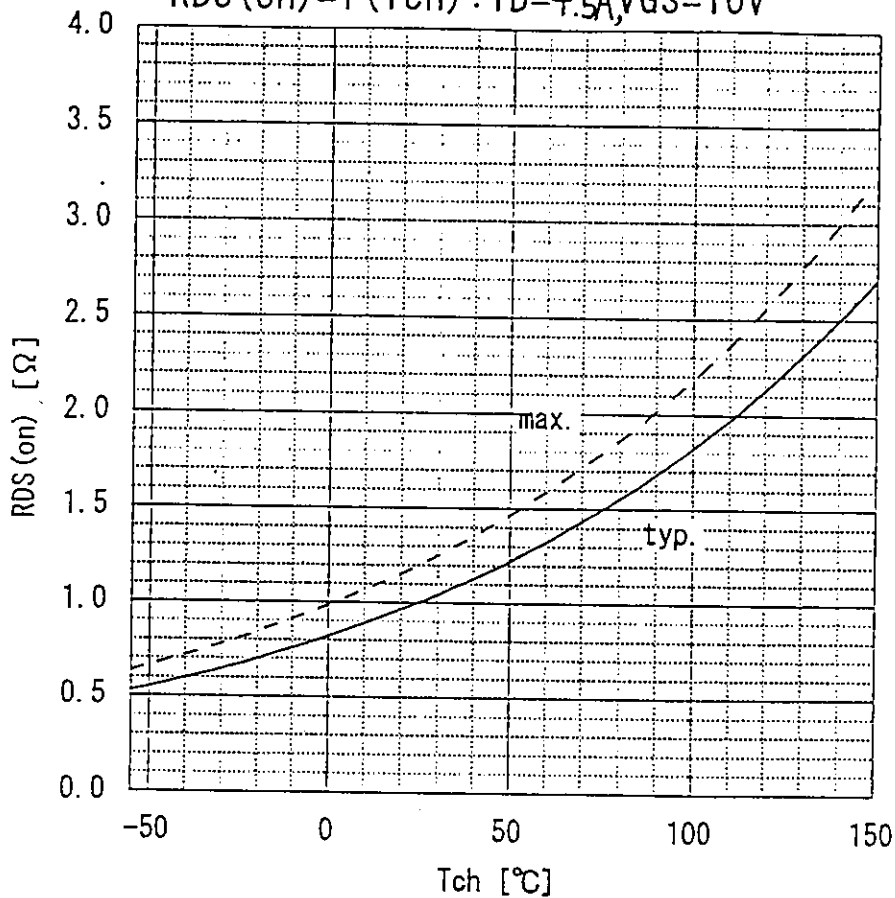


Typical drain-source on-state resistance  
 $R_{DS(on)} = f(I_D)$ : 80  $\mu$ s pulse test,  $T_c = 25^\circ C$

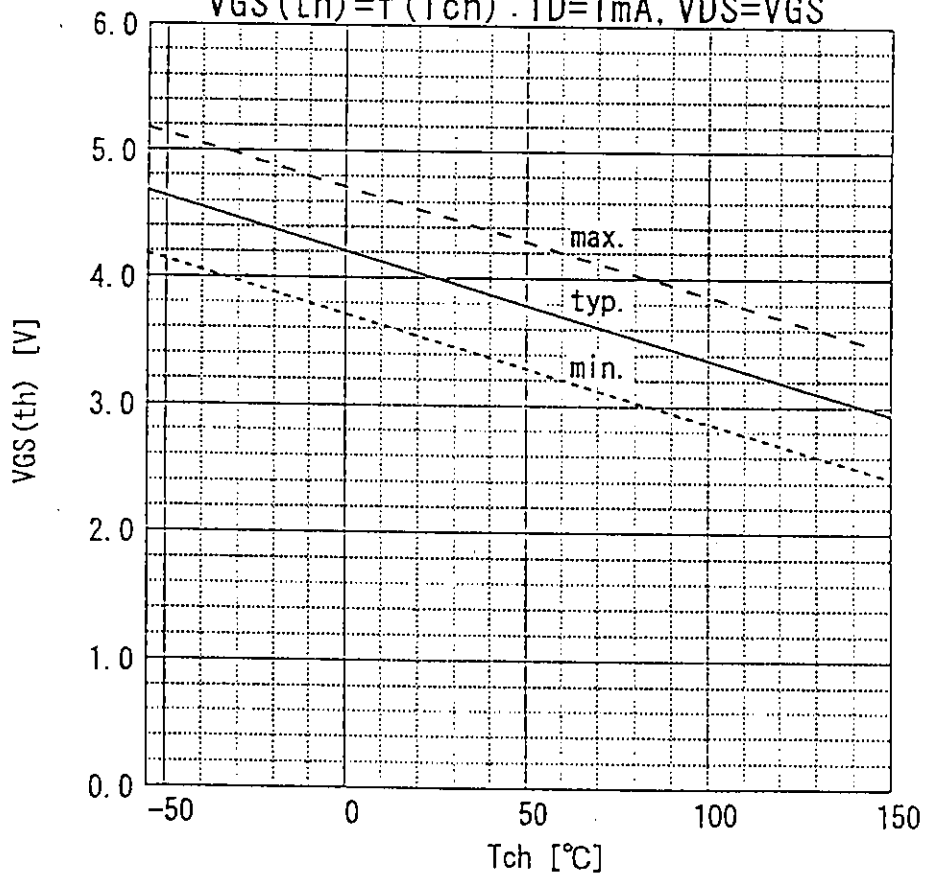




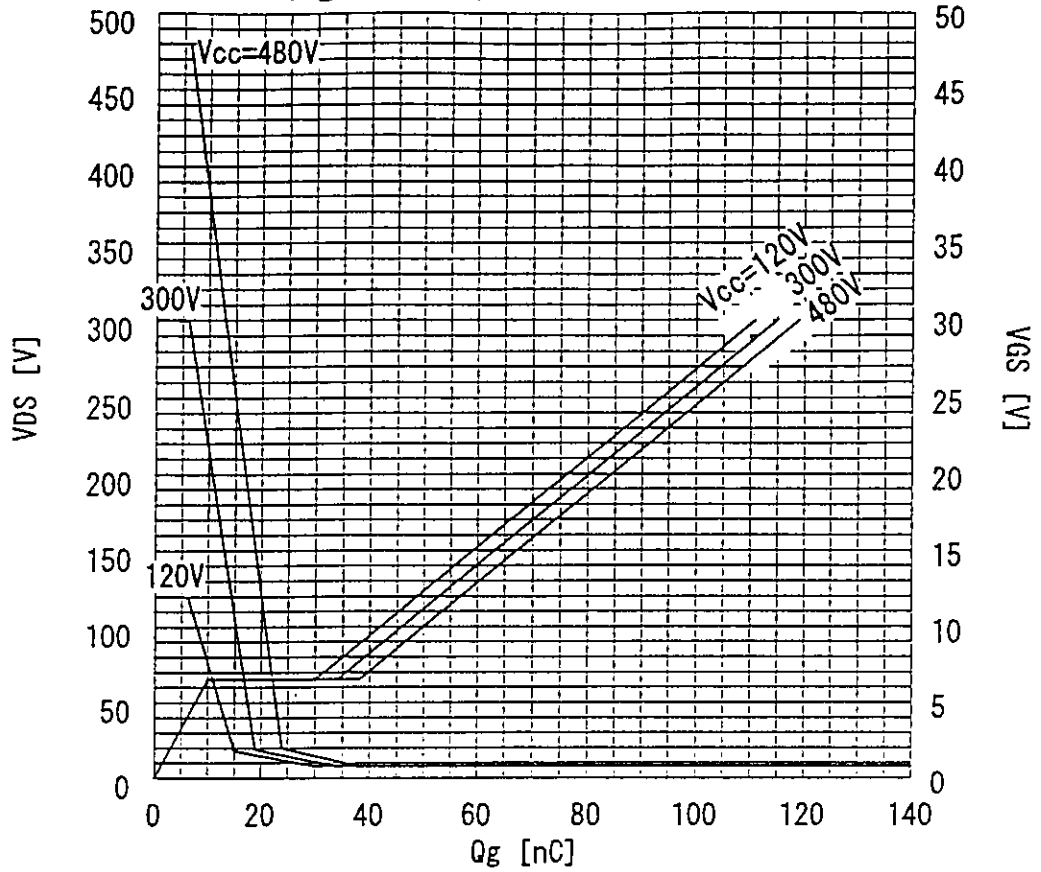
Drain-source on-state resistance  
 $R_{DS(on)} = f(T_{ch}) : I_D = 4.5A, V_{GS} = 10V$



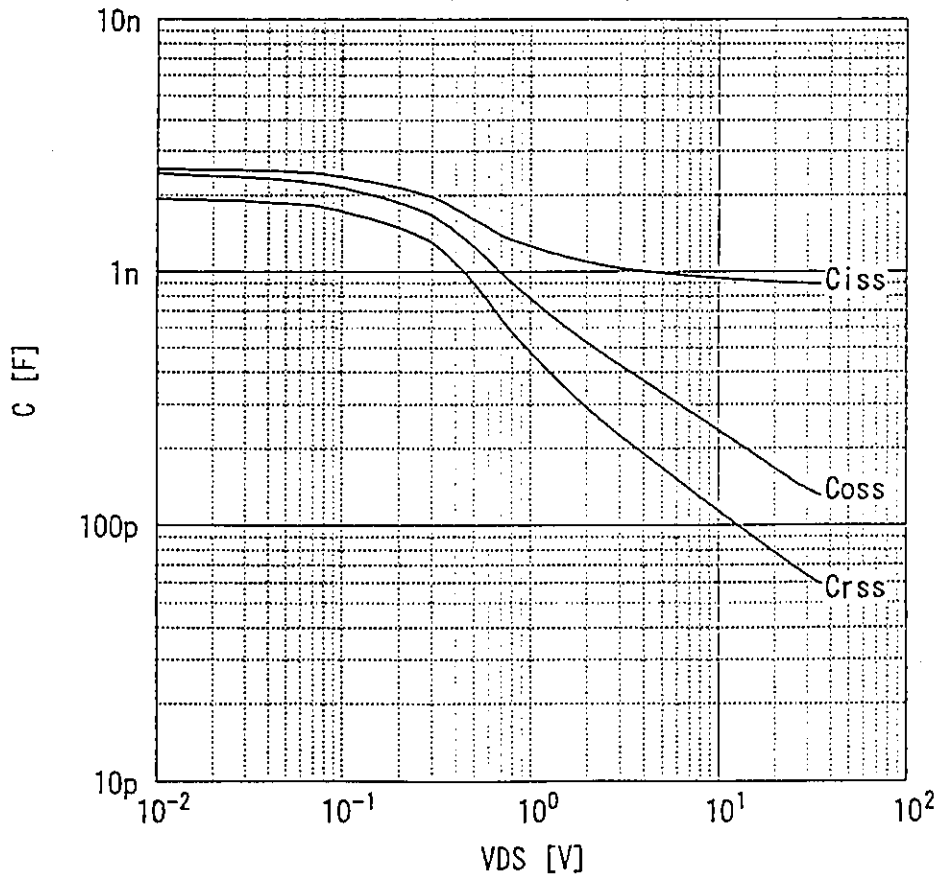
Gate threshold voltage  
 $V_{GS(th)} = f(T_{ch}) : I_D = 1mA, V_{DS} = V_{GS}$



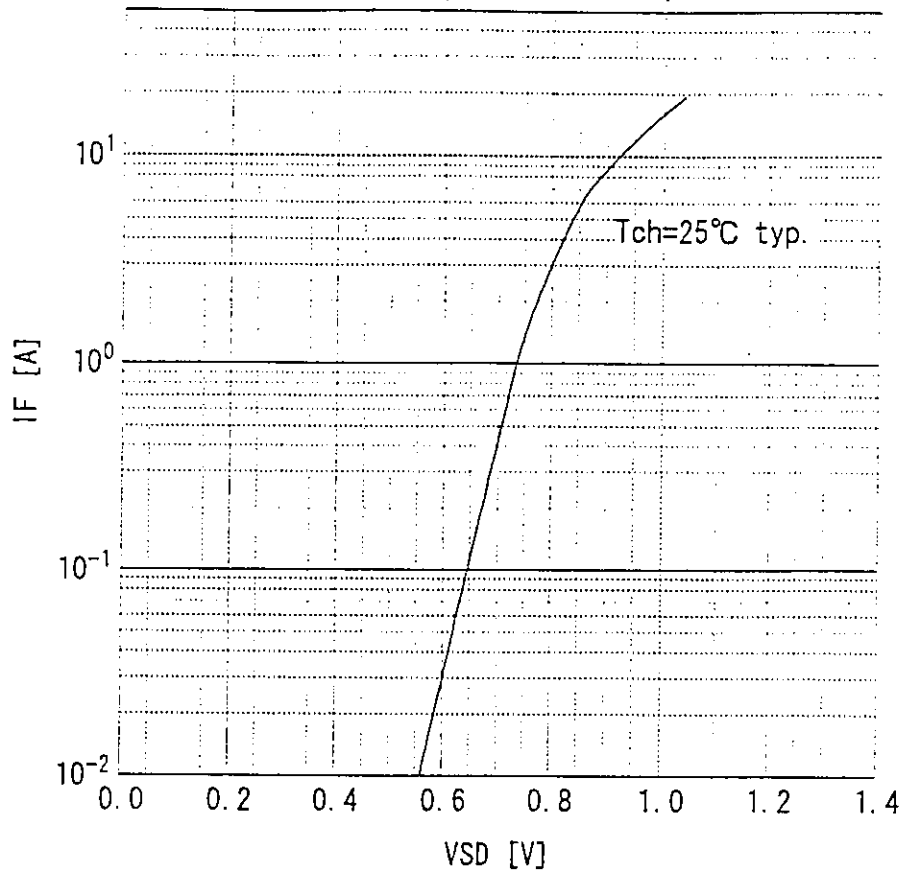
Typical gate charge characteristic  
 $V_{GS}=f(Q_g) : I_D=9A, T_c=25^\circ C$



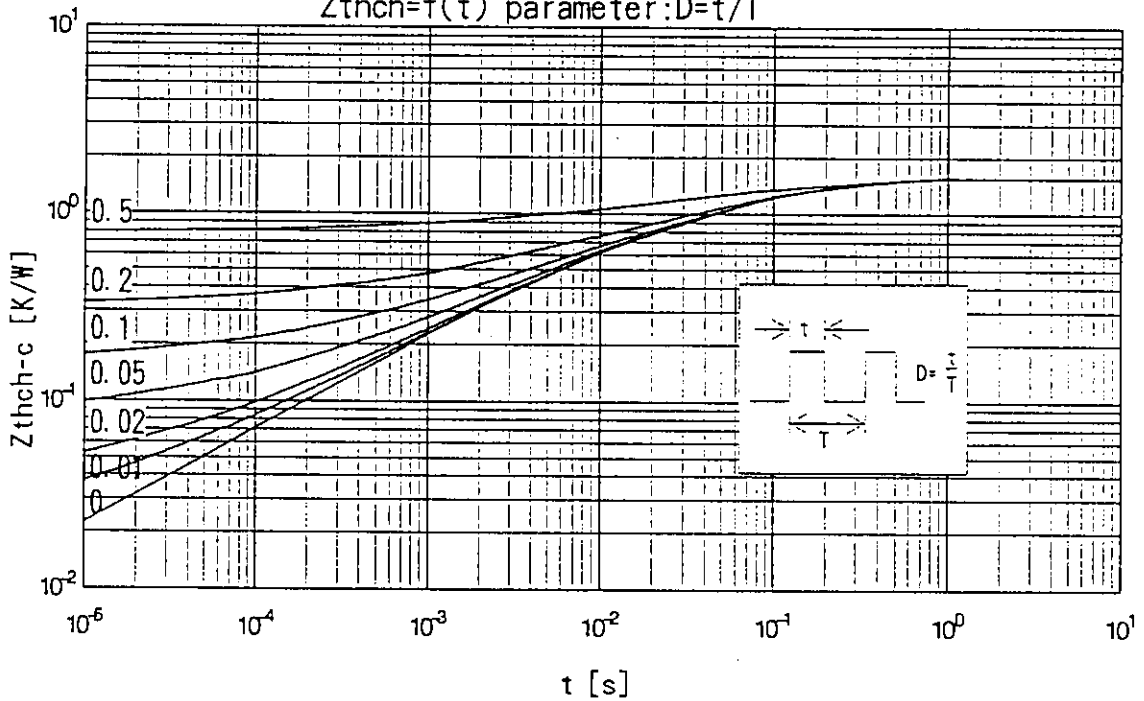
Typical capacitances  
 $C=f(V_{DS}) : V_{GS}=0V, f=1MHz$



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

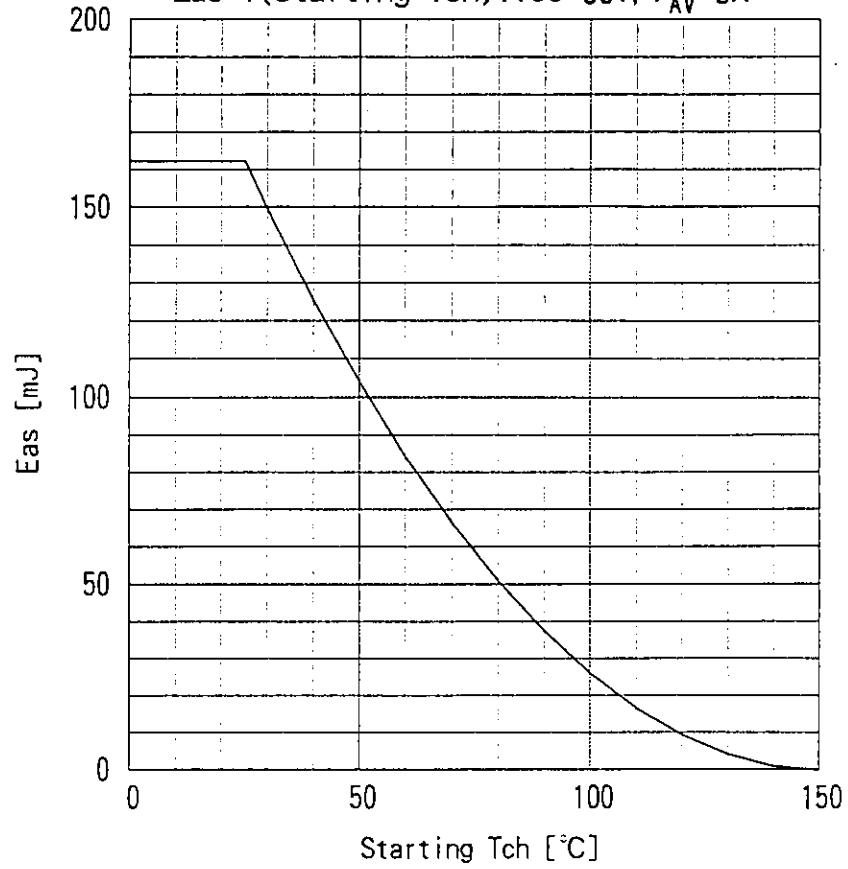


Transient thermal impedance  
 $Z_{thch} = f(t)$  parameter:  $D = t/T$



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Avalanche energy derating  
 $E_{as} = f(\text{starting } T_{ch}) : V_{CC} = 60V, I_{AV} = 9A$



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