

SPECIFICATION

DEVICE NAME : Power MOSFET

TYPE NAME : 2SK2833-R

SPEC. No. :

This material and the information herein is the property of Fuji Electric Co., Ltd. They shall be neither reproduced, copied, lent, or disclosed in any way whatsoever for the use of any third party nor used for the manufacturing purposes without the express written consent of Fuji Electric Co., Ltd.

Fuji Electric Co., Ltd.
Matsumoto Factory

This Specification is subject to change without notice.

	DATE	NAME	APPROVED	Fuji Electric Co., Ltd.	
DRAWN				DWG. NO.	1/10
CHECKED					

1. Scope
This specifies Fuji power MOSFET 2SK2833-R
2. Construction N-channel enhancement mode power MOSFET
3. Application for switching
4. Outview T0-3PF Outview See to 4/10 page
5. Absolute maximum ratings at $T_c=25^\circ\text{C}$ (unless otherwise specified)

Description	Symbol	Characteristics	Unit	
Drain-source voltage	V_{DS}	120	V	
Drain-gate voltage	V_{DGR}	120	V	$R_{GS} = 20\text{ k}\Omega$
Continuous Drain current	I_D	± 50	A	
Pulsed drain current	I_{DPULSE}	± 200	A	
Gate-source voltage	V_{GS}	± 20	V	
Maximum power dissipation	P_D	100	W	
Operating and storage temperature range	T_{CH}	150	$^\circ\text{C}$	
	T_{STG}	-55 ~ +150	$^\circ\text{C}$	

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	BV_{DSS}	$I_D = 1\text{mA}$ $V_{GS} = 0\text{V}$	120			V	
Gate threshold voltage	$V_{GS(th)}$	$I_D = 1\text{mA}$ $V_{DS} = V_{GS}$	1.0	1.5	2.5	V	
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 120\text{V}$ $V_{GS} = 0\text{V}$	$T_{CH} = 25^\circ\text{C}$	10	500	μA	
	I_{DSS}		$T_{CH} = 125^\circ\text{C}$	0.2	1.0	mA	
Gate-source leakage current	I_{GSS}	$V_{GS} = \pm 20\text{V}$ $V_{DS} = 0\text{V}$		10	100	nA	
Drain-source on-state resistance	$R_{DS(on)}$	$I_D = 25\text{A}$	$V_{GS} = 4\text{V}$		25	45	m Ω
			$V_{GS} = 10\text{V}$		20	30	

This material and the information herein is the property of Fuji Electric Co., Ltd. They shall be neither reproduced, copied, lent, or disclosed in any way whatsoever for the use of any third party nor used for the manufacturing purposes without the express written consent of Fuji Electric Co., Ltd.

Fuji Electric Co., Ltd.

DWG. NO.

2/10

H04-004-03

Dynamic ratings

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Forward transconductance	g f s	$I_D = 25A$ $V_{DS} = 25V$	25	50		S
Input capacitance	Ciss	$V_{DS} = 25V$ $V_{GS} = 0V$ $f = 1MHz$		5000	7500	pF
Output capacitance	Coss			920	1380	pF
Reverse transfer capacitance	Crss			500	750	pF
Turn-on time	t d(on)	$V_{CC} = 60V$ $V_{GS} = 10V$ $I_D = 50A$ $R_{GS} = 25\Omega$		30	45	ns
	t r			200	300	ns
Turn-off time	t d(off)			950	1425	ns
	t f			400	600	ns

Reverse diode

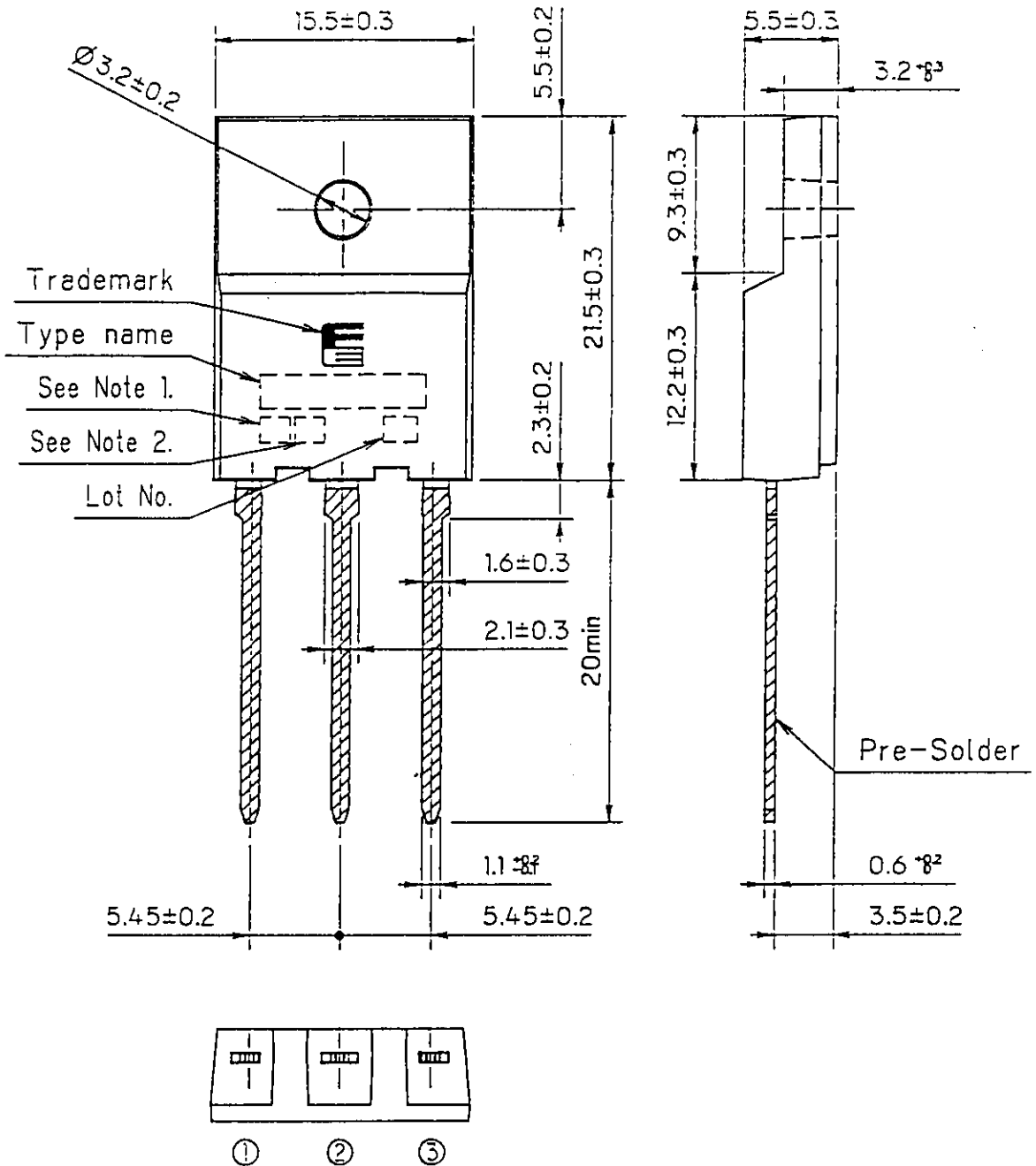
Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Diode forward on-voltage	V_{SD}	$I_F = 2 \times I_{DR}$ $V_{GS} = 0V, T_{CH} = 25^\circ C$		1.33	2.0	V
Reverse recovery time	t r r	$I_F = I_{DR}$ $V_{GS} = 0V$ $-di_F/dt = 100A/\mu s$ $T_{CH} = 25^\circ C$		150		ns
Reverse recovery charge	Q r r			1.1		μC

7. Thermal resistance

Description	Symbol	Conditions	Characteristics			Unit
			Min.	Typ.	Max.	
Thermal resistance	Rth _{ch-c}				1.25	$^\circ C/W$
	Rth _{ch-a}				30	$^\circ C/W$

This material and the information herein is the property of Fuji Electric Co., Ltd. They shall be neither reproduced, copied, lent, or disclosed in any way whatsoever for the use of any third party nor used for the manufacturing purposes without the express written consent of Fuji Electric Co., Ltd.

FUJI POWER MOSFET



This material and the information herein is the property of Fuji Electric Co., Ltd. They shall be neither reproduced, copied, lent, or disclosed in any way whatsoever for the use of any third party nor used for the manufacturing purposes without the express written consent of Fuji Electric Co., Ltd.

Note 1. Guaranteed mark of avalanche ruggedness.
 2. $V_{GS(th)}$ selected code.

CONNECTION

- ① GATE
- ② DRAIN
- ③ SOURCE

DIMENSIONS ARE IN MILLIMETERS.

Fuji Electric Co., Ltd.

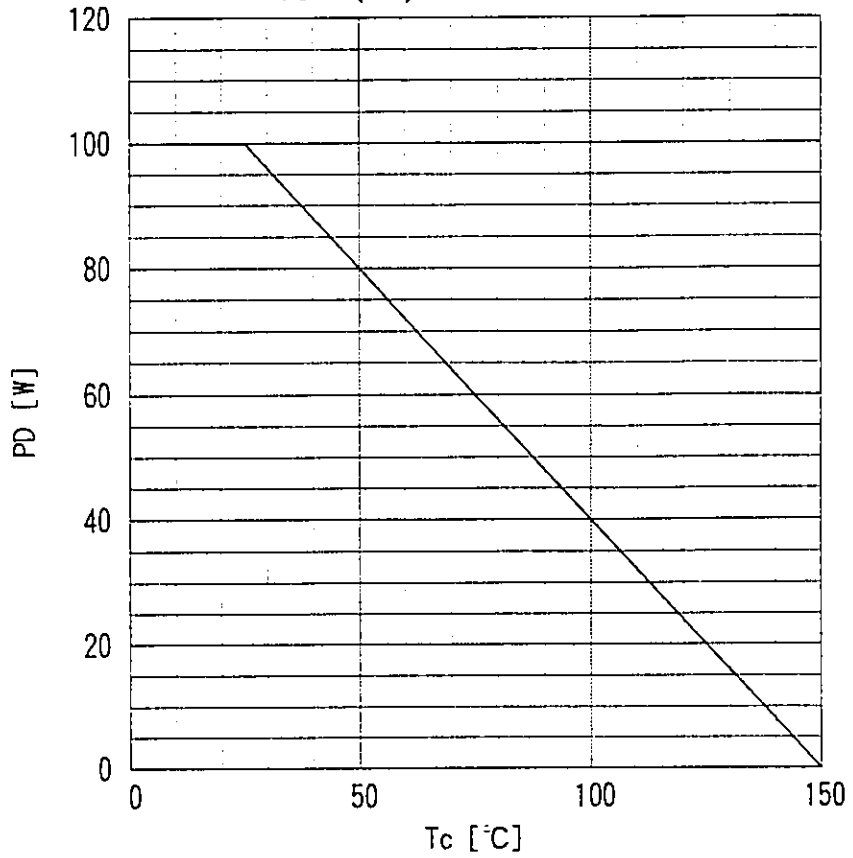
DWG. NO.

4/10

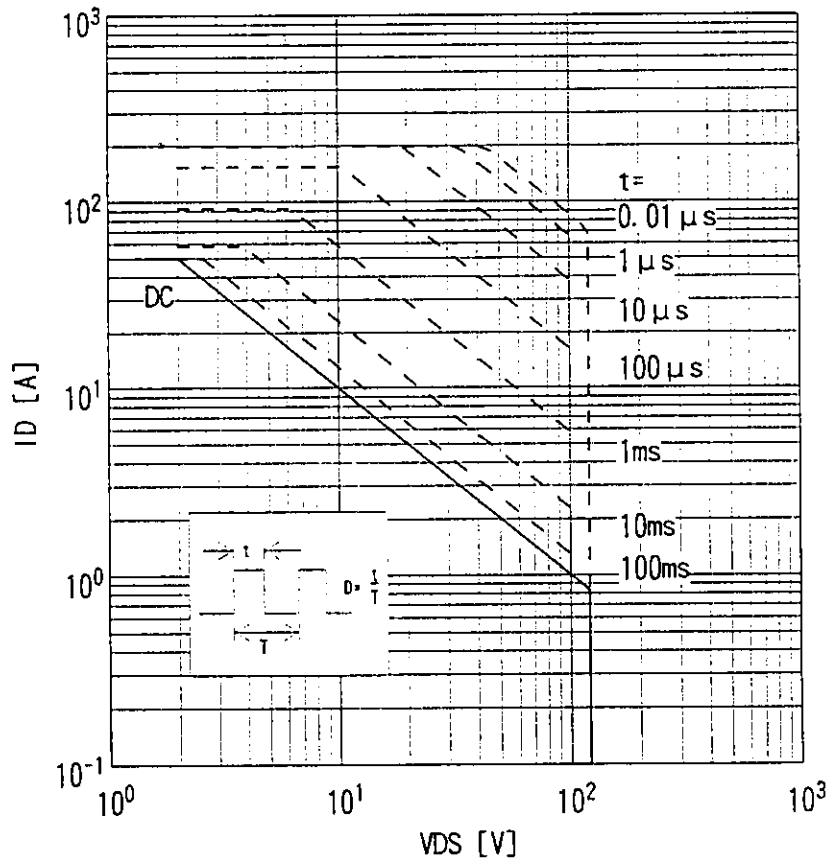
H04-004-03

This material and the information herein is the property of Fuji Electric Co., Ltd. They shall be neither reproduced, copied, lent, or disclosed in any way whatsoever for the use of any third party nor used for the manufacturing purposes without the express written consent of Fuji Electric Co., Ltd.

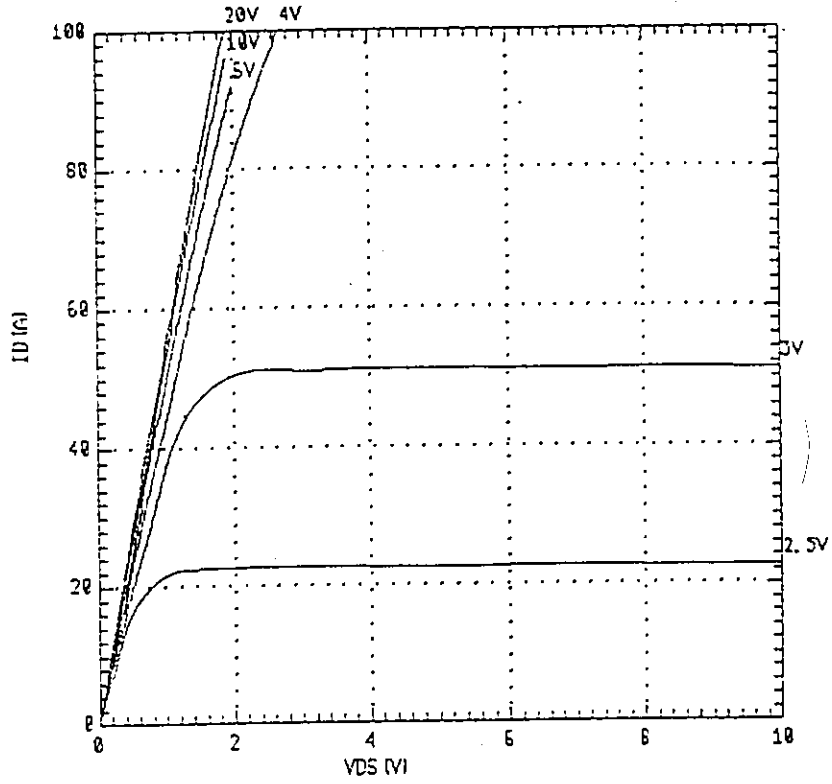
Power Dissipation
 $PD=f(T_c)$



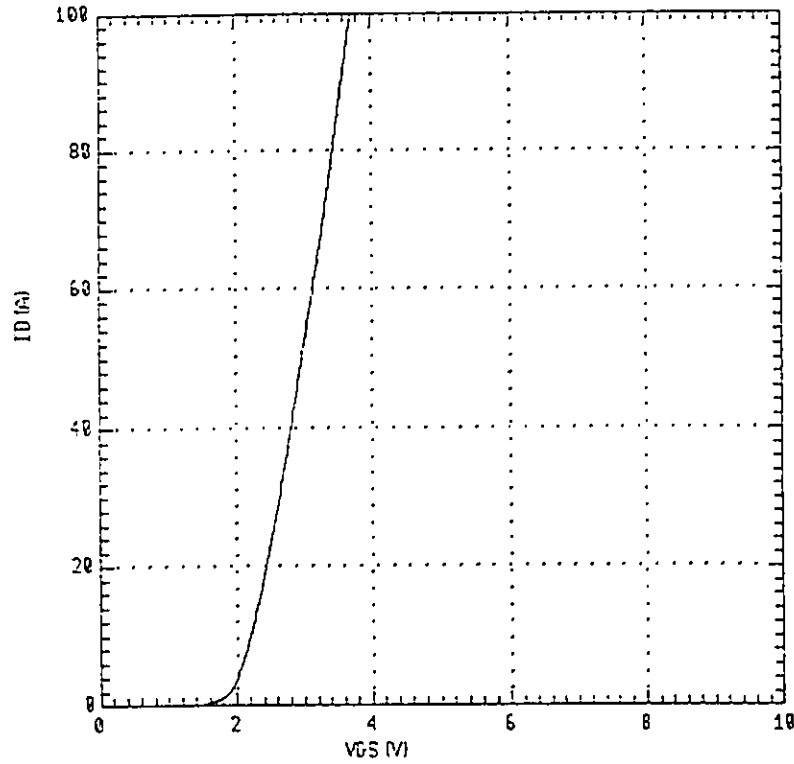
Safe operating area
 $ID=f(V_{DS}): D=0.01, T_c=25^\circ\text{C}$



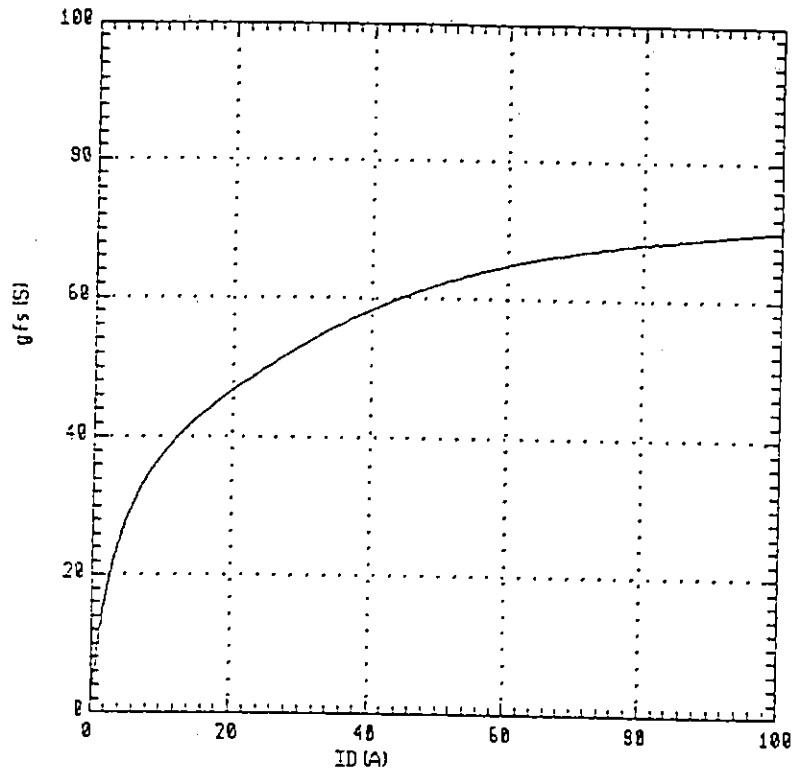
Typical output characteristics
 $I_D = f(V_{DS})$: 80 μ s pulse test, $T_{ch} = 25^\circ\text{C}$



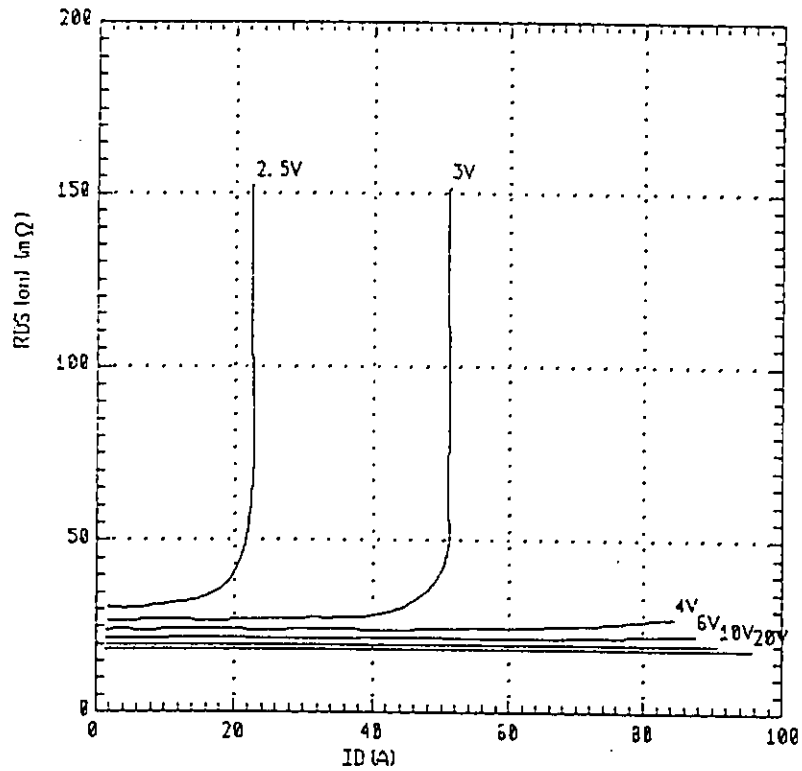
Typical Transfer Characteristic
 $I_D = f(V_{GS})$: 80 μ s pulse test, $V_{DS} = 25\text{V}$



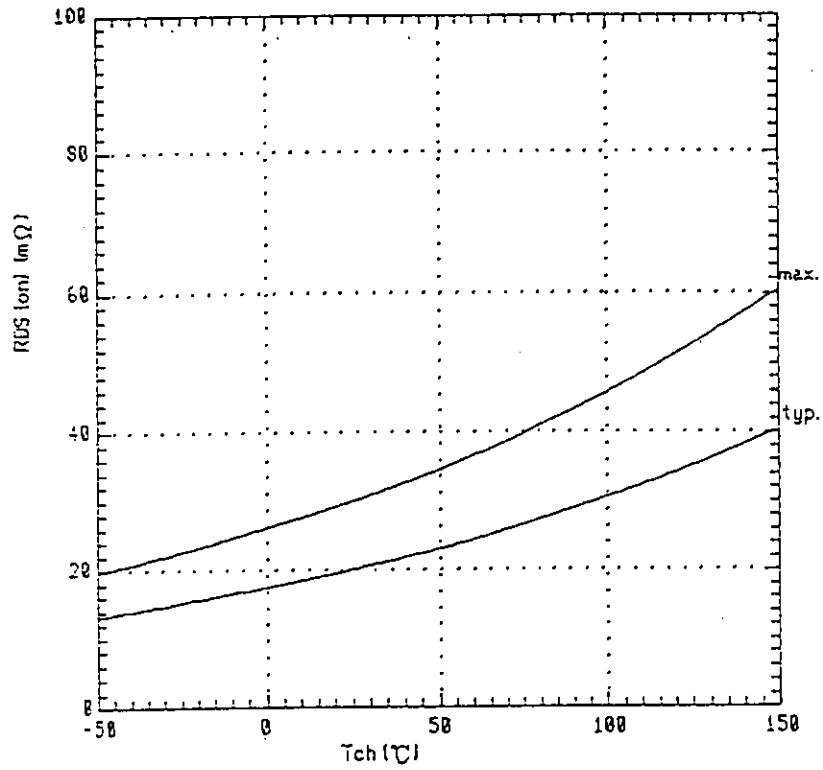
Typical Transconductance
 $g_{fs} = f(I_D)$: 80 μ s pulse test, $V_{DS} = 25V$, $T_{ch} = 25^\circ C$



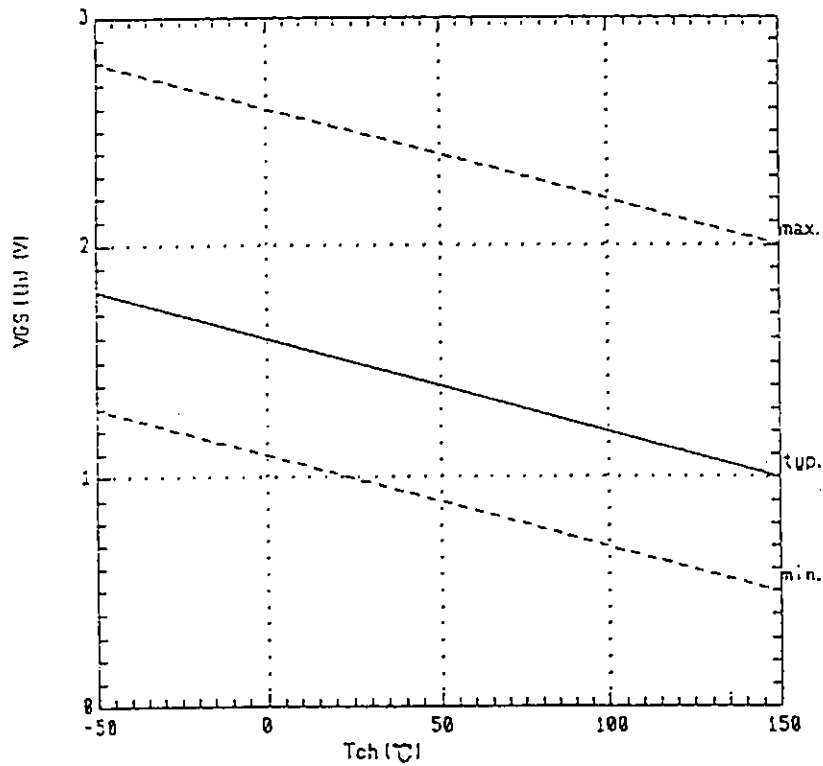
Typical Drain-source on-state resistance
 $R_{DS(on)} = f(I_D)$: 80 μ s pulse test, $T_{ch} = 25^\circ C$



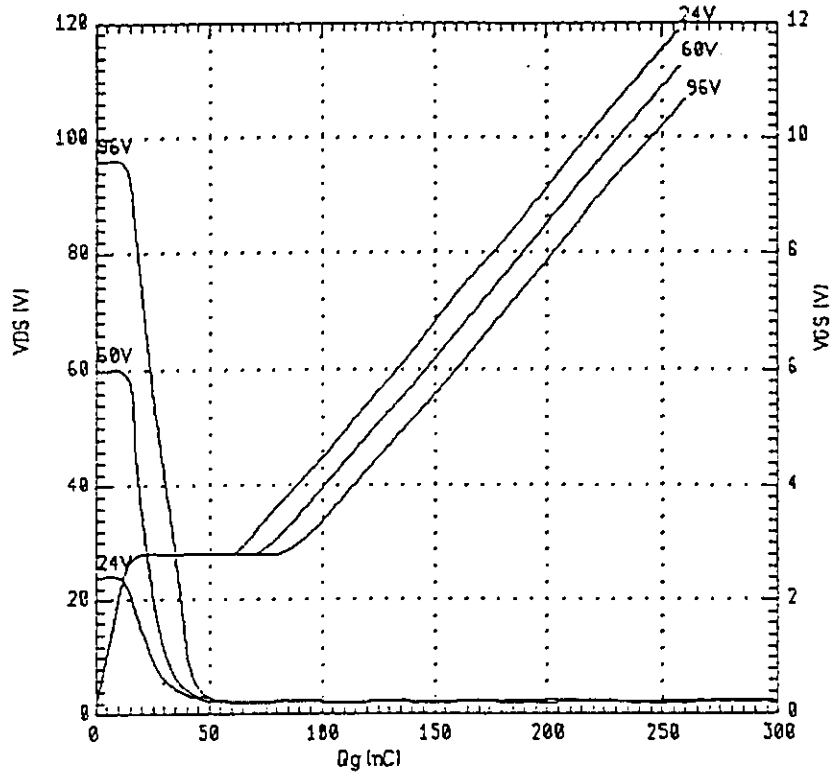
Drain-source on-state resistance
 $R_{DS(on)} = f(T_{ch}) : I_D = 25A, V_{GS} = 10V$



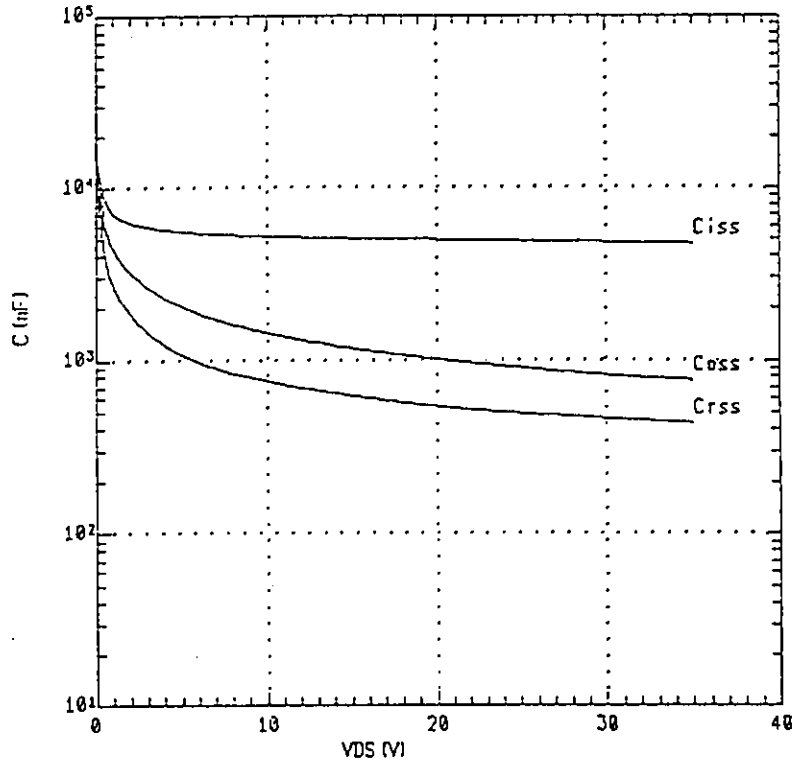
Gate threshold voltage
 $V_{GS(th)} = f(T_{ch}) : V_{DS} = V_{GS}, I_D = 1mA$



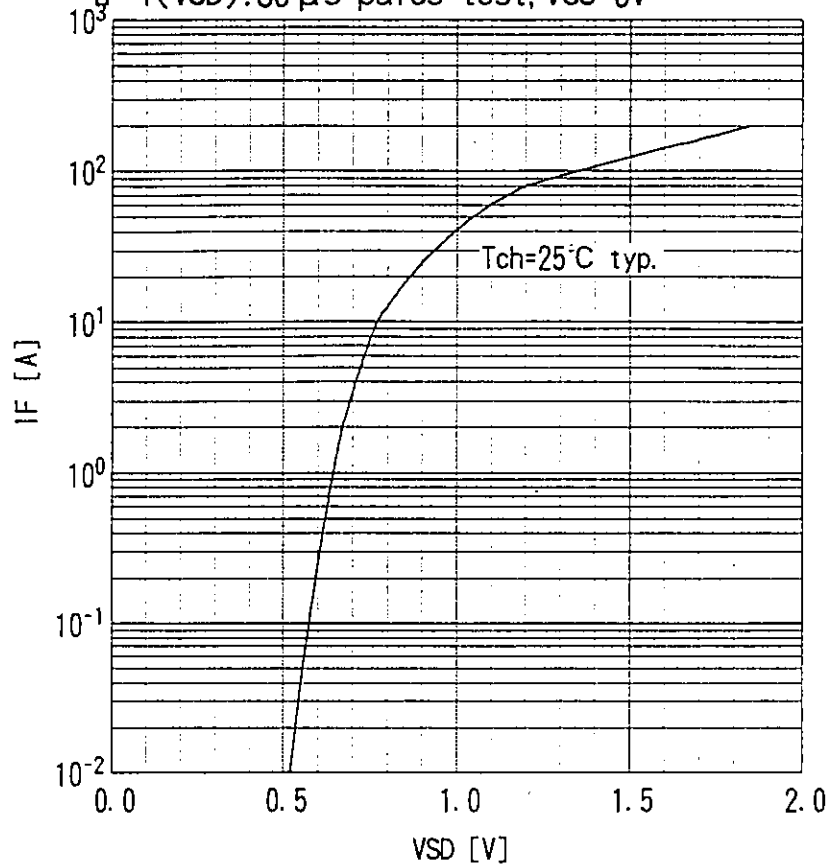
Typical gate charge characteristics
 $V_{GS} = f(Q_g) : I_D = 50A$



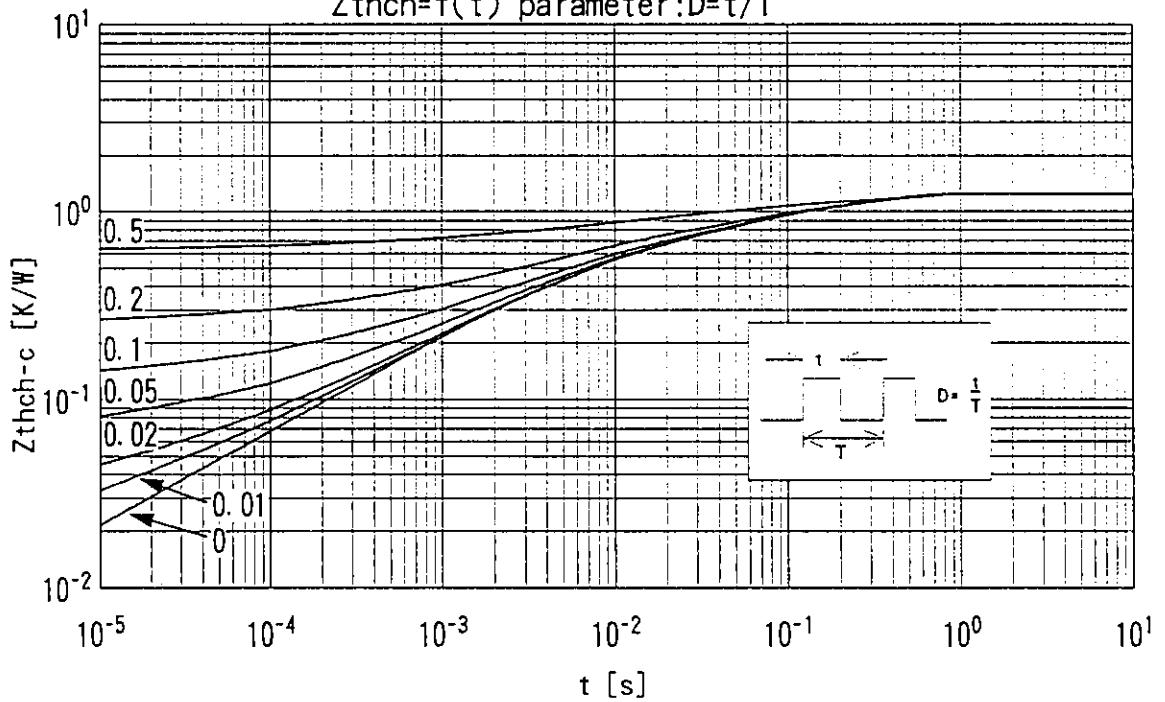
Typical capacitances
 $C = f(V_{DS}) : V_{GS} = 0V, f = 1MHz$



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: $D = t/T$



This material and the information herein is the property of Fuji Electric Co., Ltd. They shall be neither reproduced, copied, lent, or disclosed in any way whatsoever for the use of any third party nor used for the manufacturing purposes without the express written consent of Fuji Electric Co., Ltd.

This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.