# P-Channel MOSFET
2SJ208

■ Features

● $V_{DS(V)}$ =-16V

● I_D =-2 A

● $R_{DS(ON)} < 1\,\Omega$ (V_{GS} =-4V)

● $R_{DS(ON)} < 3\,\Omega$ (V_{GS} =-2.5V)

SOT-89   Unit:mm

1.Gate
2.Drain
3.Source
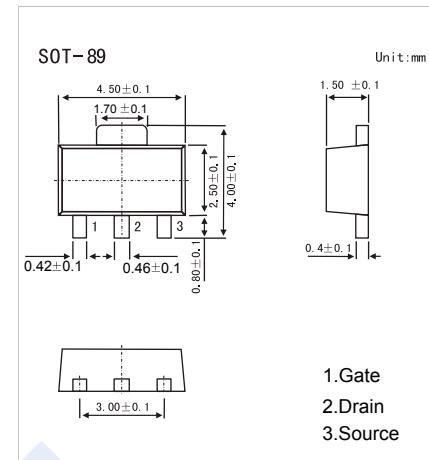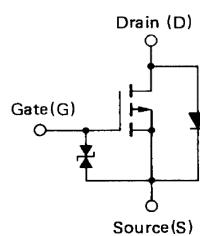
■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-16	V
Gate-Source Voltage	V_{GS}	±16	
Continuous Drain Current	I_D	-2	A
Pulsed Drain Current (Note.1)	I_{DM}	-4	
Power Dissipation	P_D	2	W
Junction Temperature	T_J	150	℃
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: PW ≤ 10 ms, duty cycle ≤ 50%

■ Electrical Characteristics Ta = 25℃

| Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-16			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-16V, V_{GS}=0V			-1	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±16V			±5	uA
Gate to Source Cutoff Voltage	$V_{GS(off)}$	V_{GS}=-5V I_D=-1mA	-1.4		-2.4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-4V, I_D=-1A			1	Ω
		V_{GS}=-2.5V, I_D=-30mA			3	
Forward Transconductance	g_{FS}	V_{DS}=-3V, I_D=-1A	0.4	1.6		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-3V, f=1MHz		230		pF
Output Capacitance	C_{oss}			210		
Reverse Transfer Capacitance	C_{rss}			35		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS(on)}$=-3V, I_D=-0.1A, R_L=20Ω ,R_G=10 Ω,V_{DD}=-10V,		175		ns
Turn-On Rise Time	t_r			540		
Turn-Off DelayTime	$t_{d(off)}$			200		
Turn-Off Fall Time	t_f			230		

■ Marking

Marking	PF

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■ Typical Characterisitics

DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA

d_T — Derating Factor — %

T_C — Case Temperature — °C
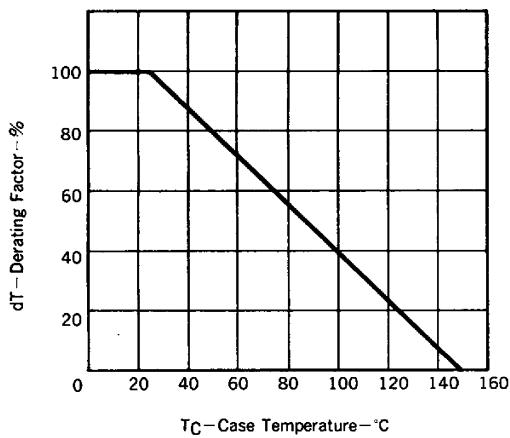
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE

when using ceramic board of 16 cm^2 × 0.7 mm

P_T — Total Power Dissipation — W

T_a — Ambient Temperature — °C
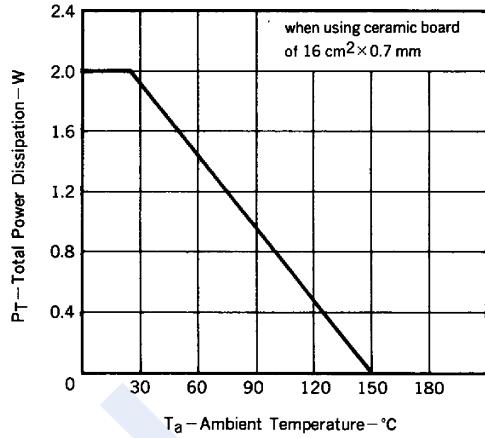
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

Pulse measurement

−10 V −8 V −6 V

V_{GS} = −4 V

I_D — Drain Current — A

V_{DS} — Drain to Source Voltage — V
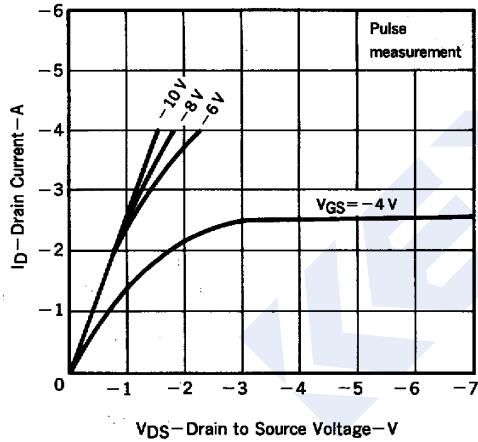
TRANSFER CHARACTERISTICS

V_{DS} = −5.0 V
Pulse measurement

I_D — Drain Current — A

V_{GS} — Gate to Source Voltage — V
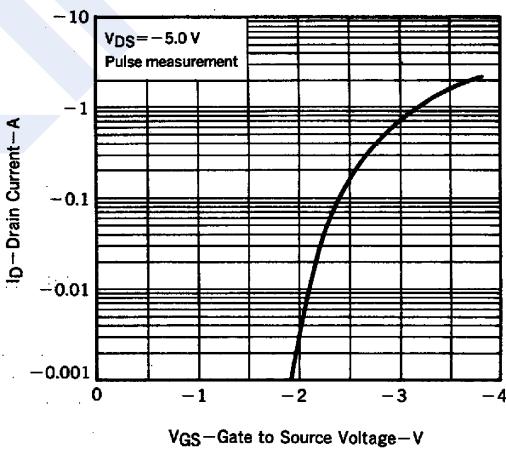
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT

V_{DS} = −3.0 V
Pulse measurement

$|y_{fs}|$ — Forward Transfer Admittance — S

I_D — Drain Current — A
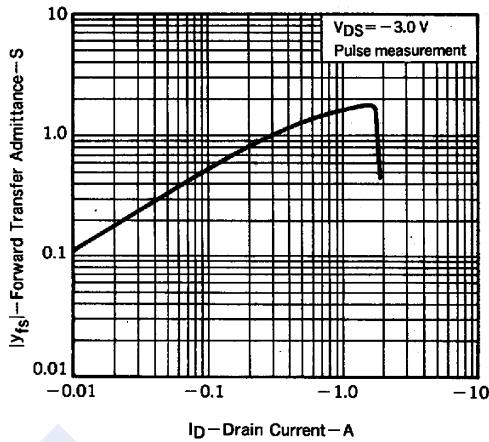
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE

I_D = −0.5 A
Pulse measurement

$R_{DS(on)}$ — Drain to Source On-State Resistance — Ω

V_{GS} — Gate to Source Voltage — V

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■ Typical Characterisitics

DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT

$R_{DS(on)}$−Drain to Source On-State Resistance−Ω

Pulse measurement

$V_{GS}=-2.5\,V$

−4 V

−10 V

I_D−Drain Current−A

SWITCHING CHARACTERISTICS

$t_{d(on)},t_r,t_{d(off)},t_f$−Switching Time−ns

t_r

$t_{d(off)}$

t_f

$t_{d(on)}$

$V_{GS}=-3\,V$
$V_{DD}=-10\,V$
$R_G=10\,Ω$

I_D−Drain Current−A