MOS Field Effect Transistor

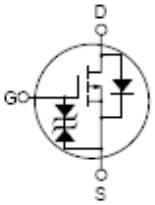
2SJ599

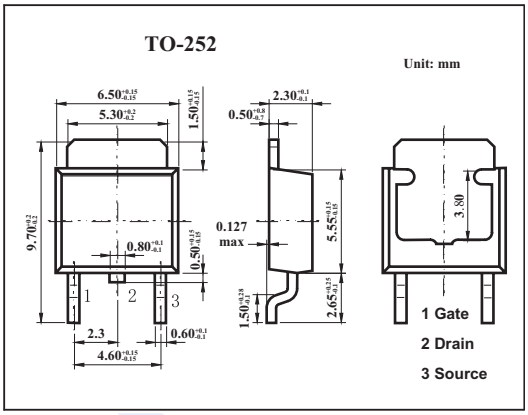
■ Features

- Low on-resistance

  $R_{DS(on)1}$ = 75 mΩ MAX. (V_{GS} =-10 V, I_D = -10 A)

  $R_{DS(on)2}$ = 110 mΩ MAX. (V_{GS} = -4.0 V, I_D =-10 A)
- Low C_{iss}: C_{iss} = 1300 pF TYP.
- Built-in gate protection diode





■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DSS}	-60	V
Gate to source voltage	V_{GSS}	±20	V
Drain current (DC)	I_D	±20	A
Drain current(pulse) *	I_D	±50	A
Power dissipation T_C=25℃	P_D	35	W
Power dissipation T_A=25℃	P_D	1.0	W
Channel temperature	T_{ch}	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

* PW≤ 10 μ s, duty cycle ≤ 1 %

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain cut-off current	I_{DSS}	V_{DS}=-60V,V_{GS}=0			-10	μA
Gate leakage current	I_{GSS}	V_{GS}=±20V,V_{DS}=0			±10	μA
Gate to source cutoff voltage	$V_{GS(off)}$	V_{DS}=-10V,I_D=-1mA	1.5	2.0	2.5	V
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS}=-10V,I_D=-10A	8	16		S
Drain to source on-state resistance	$R_{DS(on)}$	V_{GS}=-10V,I_D=-10A		60	75	mΩ
		V_{GS}=-4.0V,I_D=-10A		78	111	mΩ
Input capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0,f=1MHZ		720		pF
Output capacitance	C_{oss}			150		pF
Reverse transfer capacitance	C_{rss}			50		pF
Turn-on delay time	$t_{d(on)}$	$V_{GS(on)}$=-10V,I_D=--10A ,V_{DD}=-30V,R_G=0Ω		8		ns
Rise time	t_r			9		ns
Turn-off delay time	$t_{d(off)}$			52		ns
Fall time	t_f			16		ns
Total Gate Charge	Q_G	I_D = -20A		26		nC
Gate to Source Charge	Q_{GS}	V_{DD}= -48 V		5		nC
Gate to Drain Charge	Q_{GD}	V_{GS} =-10 V		7		nC
Body Diode Forward Voltage	$V_{F(S-D)}$	I_F = -20A, V_{GS} = 0 V		1.0		V
Reverse Recovery Time	t_{rr}	I_F = -20 A, V_{GS} = 0 V		51		ns
Reverse Recovery Charge	Q_{rr}	di/dt = 100 A / μs		102		nC