2SJ113

HITACHI/(OPTOELECTRONICS)

(+11±11+)

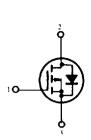
SILICON P-CHANNEL MOS FET

HIGH SPEED POWER SWITCHING, HIGH FREQUENCY POWER AMPLIFIER

Complementary pair with 2SK399

■ FEATURES

- Low On-Resistance.
- High Speed Switching.
- High Cutoff Frequency.
- No Secondary Breakdown.
- Suitable for Switching Regulator, DC-DC Converter, Motor Control, and Ultrasonic Power Oscillators.



POWER VS. TEMPERATURE DERATING

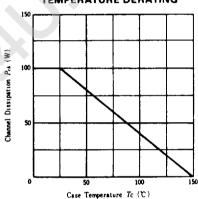
(TO-3P)

1. Gate

2. Drain (Flange)

3. Source

(Dimensions in mm)



■ ABSOLUTE MAXIMUM RATINGS (T_a =25 °C)

Item	Symbol	Rating	Unit V	
Drain-Source Voltage	Voss	-100		
Gate-Source Voltage	V_{Gss}	±20	V	
Drain Current	I _D	-10	A	
Drain Peak Current	I _{D(peak)}	-15	Α	
Body-Drain Diode Reverse Drain Current	I _{DR}	-10	A	
Channel Dissipation	P _{ch} *	100	w	
Channel Temperature	T _{ch}	150	°C	
Storage Temperature	Tug	-55~+150	°C	

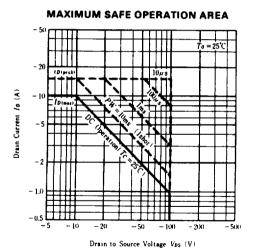
 $^{^{\}circ}$ Value at T_{c} =25 $^{\circ}$ C

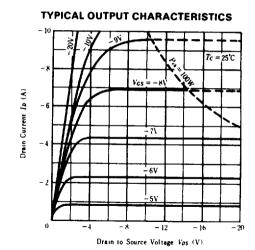
■ ELECTRICAL CHARACTERISTICS (T_e=25 °C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	$I_{\nu}=-10\text{mA}, V_{\alpha s}=0$	-100			v
Gate-Source Leak Current	I _{G\$5}	$V_{os}=\pm 20$ V, $V_{os}=0$	_		±1	μA
Zero Gate Voltage Drain Current	Ipss	$V_{DS} = -80 \text{V}, V_{GS} = 0$			-1	mA_
Gate-Source Cutoff Voltage	V _{GReff)}	$I_p = -1 \text{mA}$. $V_{DS} = -10 \text{V}$	-2.0	_	-5.0	V
Static Drain-Source On State Resistance	R _{DS(on)}	$I_D = -5A$, $V_{GS} = -15V^*$	_	0.25	0.35	Ω
Drain-Source Saturation Voltage	V _{DSton}	$I_{D}=-5A, V_{GS}=-15V^{*}$	_	-1.25	-1.75	V
Forward Transfer Admittance	y/s	$I_{\rho} = -5A$, $V_{\rho s} = = -10V^*$	1.5	2.0		S
Input Capacitance	C ₁₅₅	$V_{DS} = -10 \text{V}, V_{GS} = 0, f = 1 \text{MHz}$		1100	12	pF
Output Capacitance	Coss			650) –	pF
Reverse Transfer Capacitance	Crss			90	_	рF
Turn-on Delay Time	t _{d(on)}		-	20	_	ns
Rise Time	t,	$I_D=-2A$, $V_{GS}=-15V$		5 0		ns
Turn-off Delay Time	t _d (off)	$R_t=15\Omega$	_	90	_	ns
Fall Time	t,			70	-	ns
Body-Drain Diode Forward Voltage	V_{DF}	I _r =-5A, V ₆₃ =0	_	-0.9	_	v
Body-Drain Diode Reverse Recovery Time	t,,	$I_F = -5A, V_{cS} = 0$ $di_F/dt = 50A/\mu s$	_	250		ns

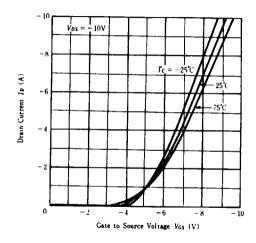
^{*}Pulse Test

HITACHI/(OPTOELECTRONICS)

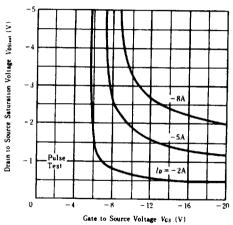




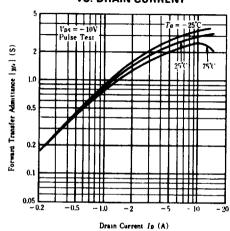
TYPICAL TRANSFER CHARACTERISTICS



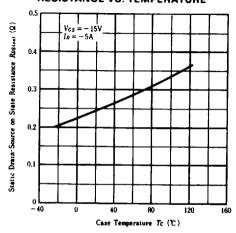




FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT

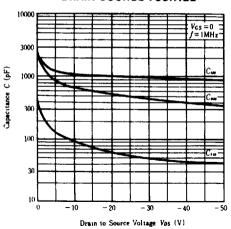


STATIC DRAIN—SOURCE ON STATE RESISTANCE VS. TEMPERATURE

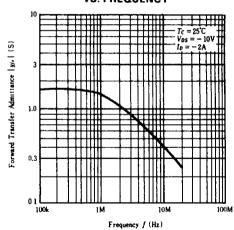


HITACHI/(OPTOELECTRONICS)

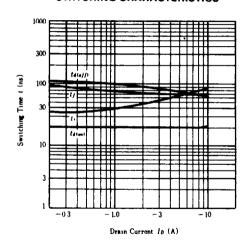
TYPICAL CAPACITANCE VS. DRAIN-SOURCE VOLTAGE



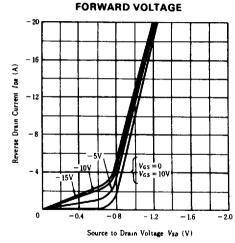
FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



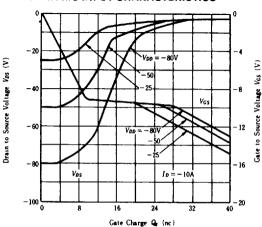
SWITCHING CHARACTERISTICS



MAXIMUM BODY-DRAIN DIODE



DYNAMIC INPUT CHARACTERISTICS



SWITCHING TIME TEST CIRCUIT

