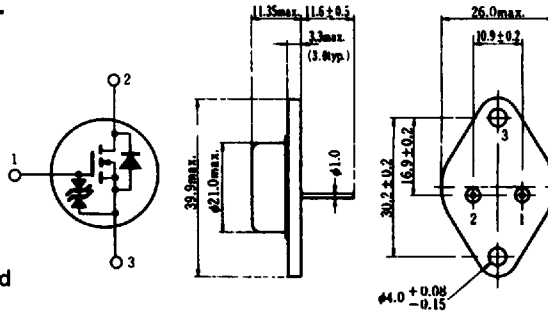


2SK1371, 2SK1372

**SILICON N-CHANNEL MOS FET
HIGH SPEED POWER SWITCHING**

■ FEATURES

- Low On-Resistance
- High Speed Switching
- Low Drive Current
- No Secondary Breakdown
- Suitable for Switching Regulator and DC-DC Converter



1. Gate
2. Source
3. Drain
(Case)
(Dimensions in mm)

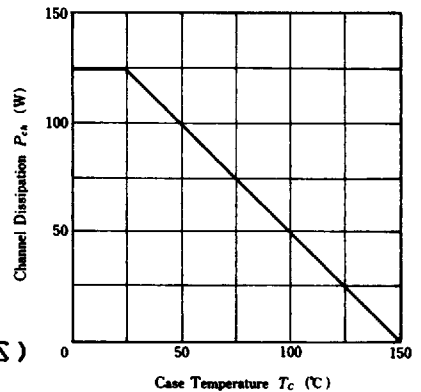
(JEDEC TO-3)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SK1371	2SK1372	Unit
Drain-Source Voltage	V_{DS}	450	500	V
Gate-Source Voltage	V_{GS}	±30		V
Drain Current	I_D	20		A
Drain Peak Current	$I_{D(max)}$ *	80		A
Body-Drain Diode Reverse Drain Current	I_{DR}	20		A
Channel Dissipation	P_{ch} **	125		W
Channel Temperature	T_{ch}	150		°C
Storage Temperature	T_{stg}	-55 ~ +150		°C

* $PW \leq 10 \mu s$, duty cycle $\leq 1\%$
** Value at $T_c = 25^\circ C$

POWER VS. TEMPERATURE DERATING



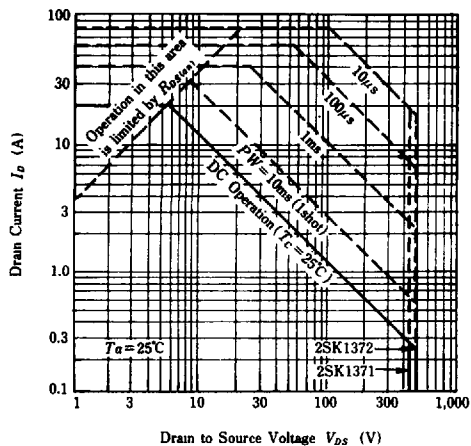
HITACHI/(OPTOELECTRONICS)

■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

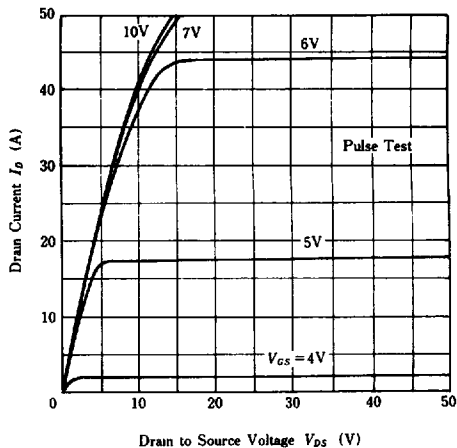
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	2SK1371	$I_D = 10mA, V_{GS} = 0$	450	—	—	V
	2SK1372		500	—	—	
Gate-Source Breakdown Voltage	$V_{(BR)GS}$	$I_G = \pm 100 \mu A, V_{DS} = 0$	±30	—	—	V
Gate-Source Leak Current	I_{GSS}	$V_{GS} = \pm 25V, V_{DS} = 0$	—	—	±10	μA
Zero Gate Voltage Drain Current	2SK1371	$V_{DS} = 360V, V_{GS} = 0$	—	—	250	μA
	2SK1372		$V_{DS} = 400V, V_{GS} = 0$	—	—	
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D = 1mA, V_{DS} = 10V$	2.0	—	3.0	V
Static Drain-Source on State Resistance	2SK1371	$I_D = 10A, V_{GS} = 10V^*$	—	0.20	0.25	Ω
	2SK1372		—	0.22	0.27	
Forward Transfer Admittance	$ y_{fs} $	$I_D = 10A, V_{DS} = 10V^*$	10	16	—	S
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0, f = 1MHz$	—	2800	—	pF
Output Capacitance	C_{oss}		—	780	—	pF
Reverse Transfer Capacitance	C_{rss}		—	90	—	pF
Turn-on Delay Time	$t_{d(on)}$		—	32	—	ns
Rise Time	t_r	$I_D = 10A, V_{GS} = 10V, R_L = 3\Omega$	—	115	—	ns
Turn-off Delay Time	$t_{d(off)}$		—	200	—	ns
Fall Time	t_f		—	90	—	ns
Body-Drain Diode Forward Voltage	V_{DF}	$I_F = 20A, V_{GS} = 0$	—	1.0	—	V
Body-Drain Diode Reverse Recovery Time	t_{rr}	$I_F = 20A, V_{GS} = 0, di_F/dt = 100A/\mu s$	—	500	—	ns

* Pulse Test

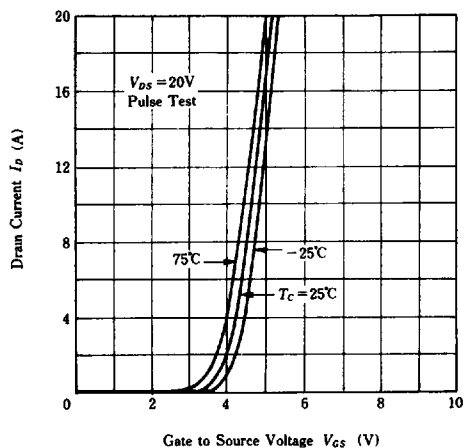
MAXIMUM SAFE OPERATION AREA



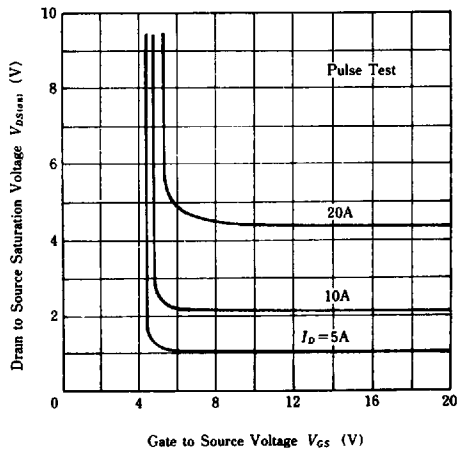
TYPICAL OUTPUT CHARACTERISTICS



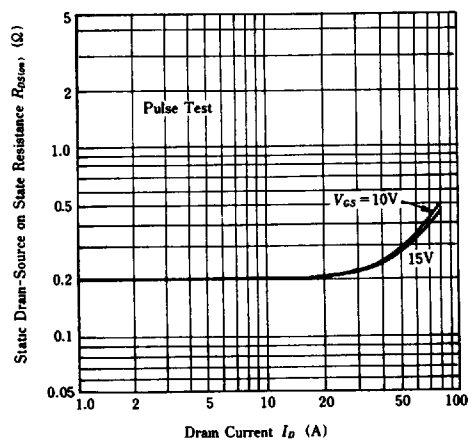
TYPICAL TRANSFER CHARACTERISTICS



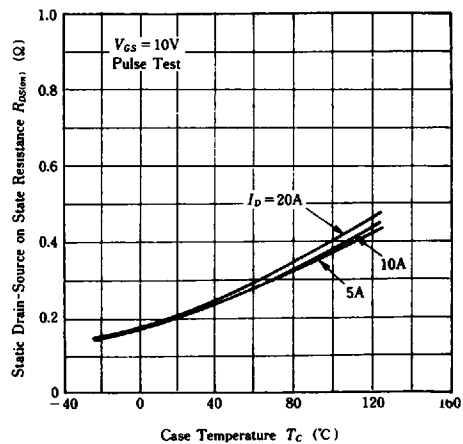
DRAIN-SOURCE SATURATION VOLTAGE VS. GATE-SOURCE VOLTAGE



STATIC DRAIN-SOURCE ON STATE RESISTANCE VS. DRAIN CURRENT

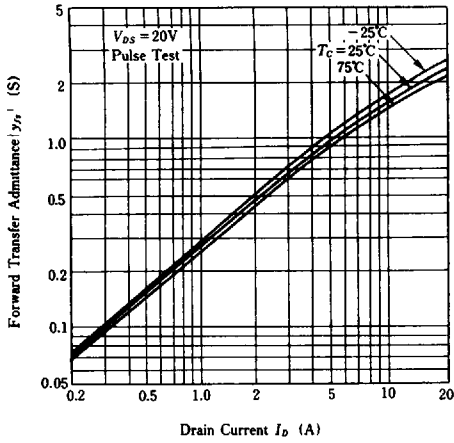


STATIC DRAIN-SOURCE ON STATE RESISTANCE VS. TEMPERATURE

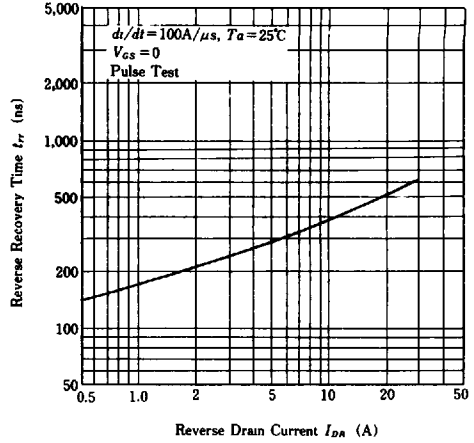


HITACHI/(OPTOELECTRONICS)

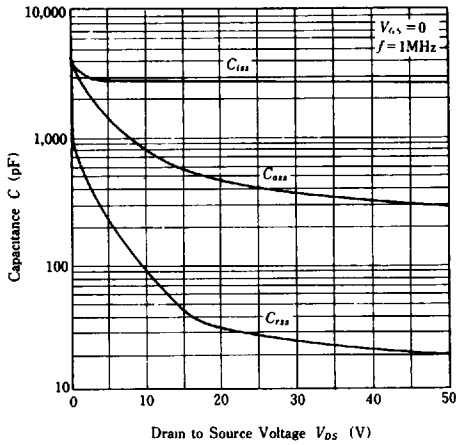
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT



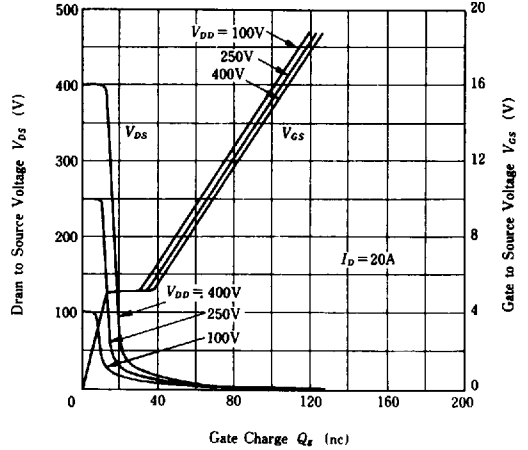
BODY-DRAIN DIODE REVERSE RECOVERY TIME



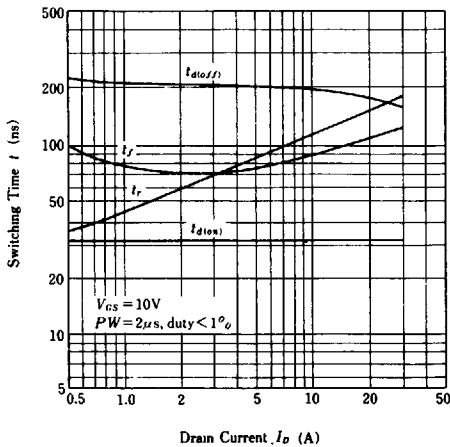
TYPICAL CAPACITANCE VS. DRAIN-SOURCE VOLTAGE



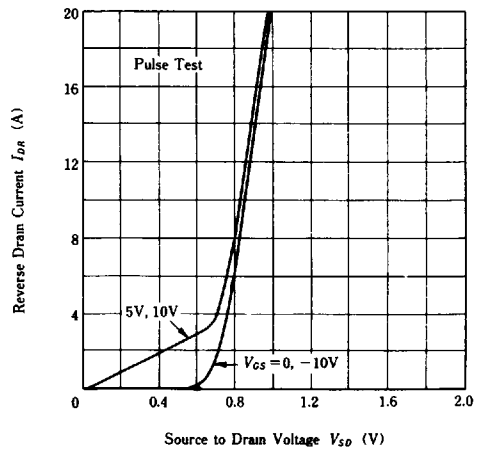
DYNAMIC INPUT CHARACTERISTICS



SWITCHING CHARACTERISTICS

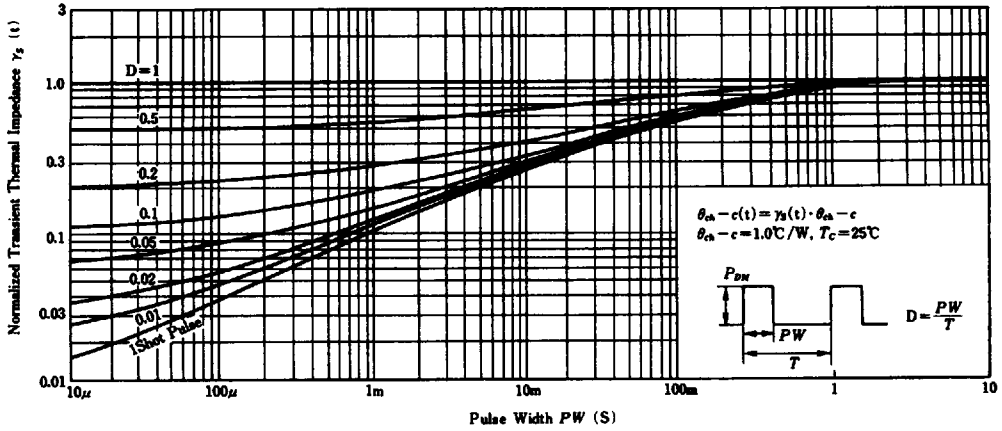


REVERSE DRAIN CURRENT VS. SOURCE TO DRAIN VOLTAGE

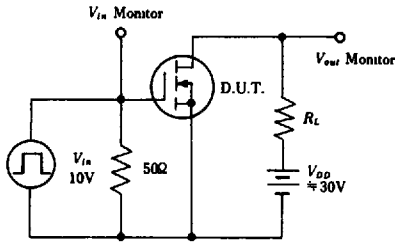


HITACHI/(OPTOELECTRONICS)

NORMALIZED TRANSIENT THERMAL IMPEDANCE VS. PULSE WIDTH



SWITCHING TIME TEST CIRCUIT



WAVEFORMS

