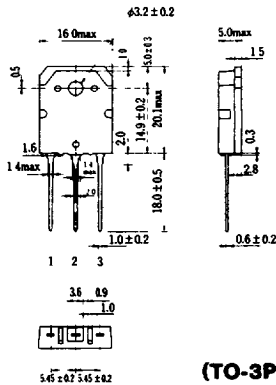
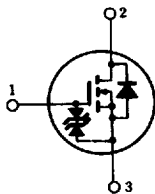


SILICON N-CHANNEL MOS FET

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. Drain
(Flange)
3. Source
(Dimensions in mm)

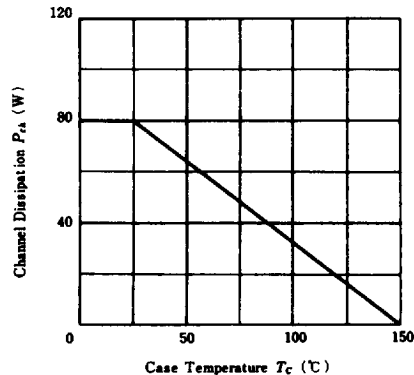
ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	900	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current	I_D	4	A
Drain Peak Current	$I_{D(pulse)}$ *	10	A
Body-Drain Diode Reverse Drain Current	I_{DR}	4	A
Channel Dissipation	P_{ch} **	80	W
Channel Temperature	T_{ch}	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

*PW≤10μs, duty cycle≤1%
** Value at Tc=25°C

(TO-3P)

POWER VS. TEMPERATURE DERATING



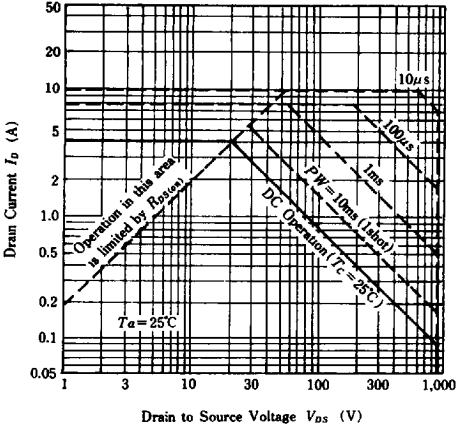
ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DS}$	$I_D=10mA, V_{GS}=0$	900	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)GS}$	$I_G=±100μA, V_{DS}=0$	±20	—	—	V
Gate-Source Leak Current	I_{GSS}	$V_{GS}=±16V, V_{DS}=0$	—	—	±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=720V, V_{GS}=0$	—	—	250	μA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D=1mA, V_{DS}=10V$	2.0	—	4.0	V
Static Drain-Source on State Resistance	$R_{DS(on)}$	$I_D=2A, V_{GS}=10V^*$	—	4.0	5.5	Ω
Forward Transfer Admittance	$ y_{fs} $	$I_D=2A, V_{DS}=20V^*$	1.1	1.7	—	S
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0, f=1MHz$	—	650	—	pF
Output Capacitance	C_{oss}		—	350	—	pF
Reverse Transfer Capacitance	C_{rss}		—	250	—	pF
Turn-On Delay Time	$t_{d(on)}$	$I_D=2A, V_{GS}=10V, R_L=15Ω$	—	15	—	ns
Rise Time	t_r		—	80	—	ns
Turn-Off Delay Time	$t_{d(off)}$		—	90	—	ns
Fall Time	t_f		—	70	—	ns
Body-Drain Diode Forward Voltage	V_{DF}	$I_F=4A, V_{GS}=0$	—	1.0	—	V
Body-Drain Diode Reverse Recovery Time	t_{rr}	$I_F=4A, V_{GS}=0, di_F/dt=100A/μs$	—	1200	—	ns

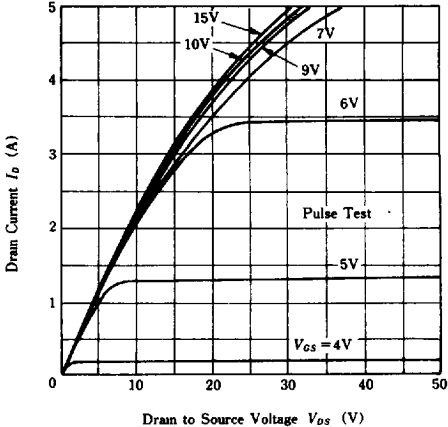
*Pulse Test

HITACHI/(OPTOELECTRONICS)

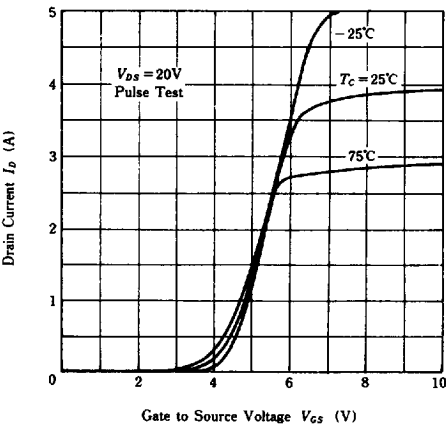
MAXIMUM SAFE OPERATION AREA



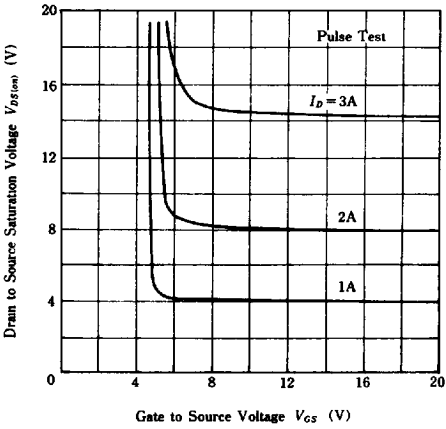
TYPICAL OUTPUT CHARACTERISTICS



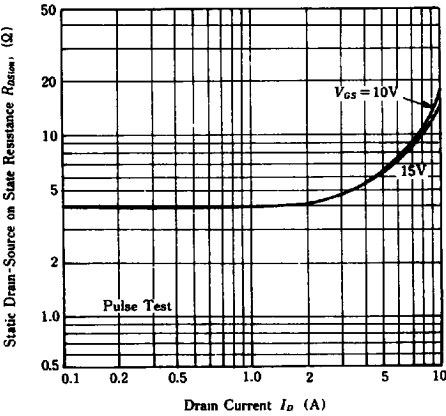
TYPICAL TRANSFER CHARACTERISTICS



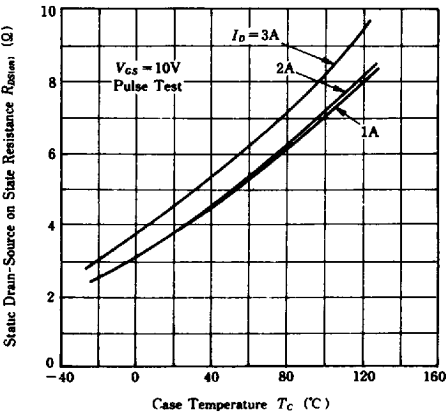
DRAIN-SOURCE SATURATION VOLTAGE VS. GATE-SOURCE VOLTAGE



STATIC DRAIN-SOURCE ON STATE RESISTANCE VS. DRAIN CURRENT

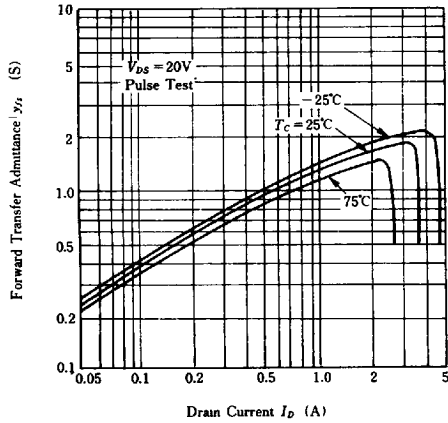


STATIC DRAIN-SOURCE ON STATE RESISTANCE VS. TEMPERATURE

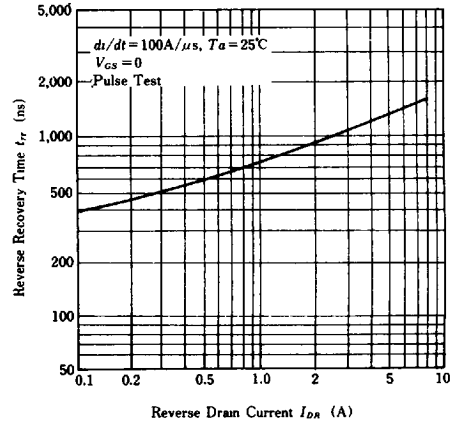


HITACHI/(OPTOELECTRONICS)

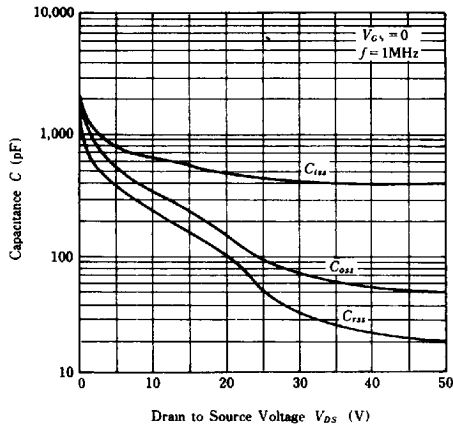
FORWARD TRANSFER ADMITTANCE
VS. DRAIN CURRENT



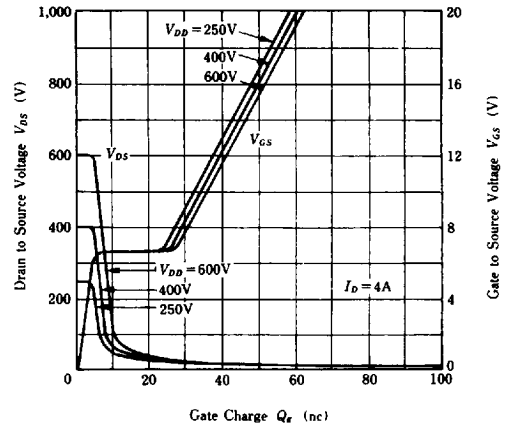
BODY-DRAIN DIODE REVERSE
RECOVERY TIME



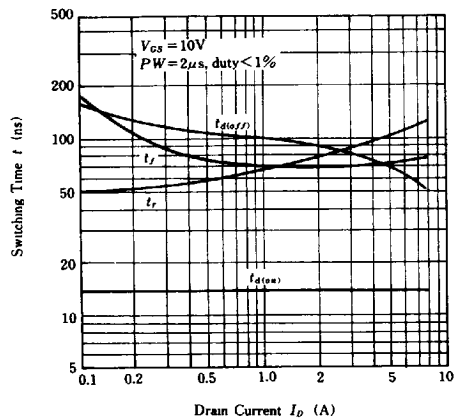
TYPICAL CAPACITANCE
VS. DRAIN-SOURCE VOLTAGE



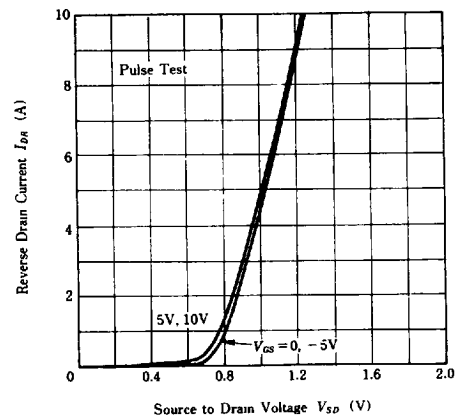
DYNAMIC INPUT CHARACTERISTICS



SWITCHING CHARACTERISTICS

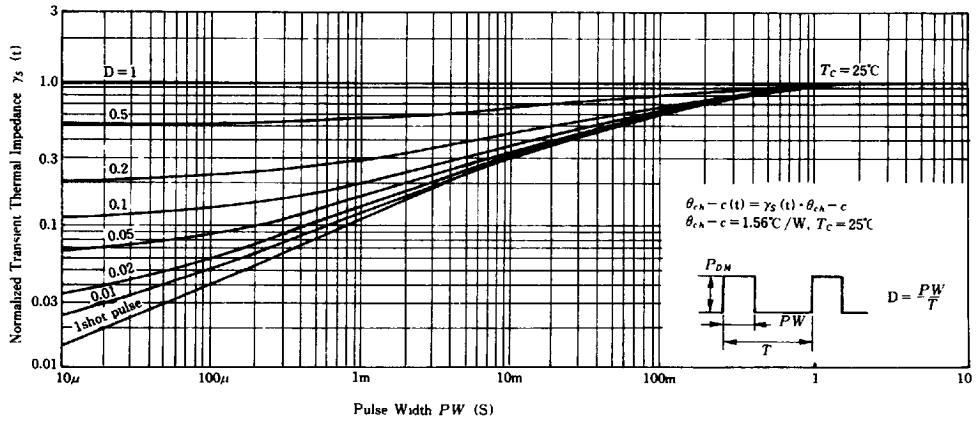


REVERSE DRAIN CURRENT VS.
SOURCE TO DRAIN VOLTAGE

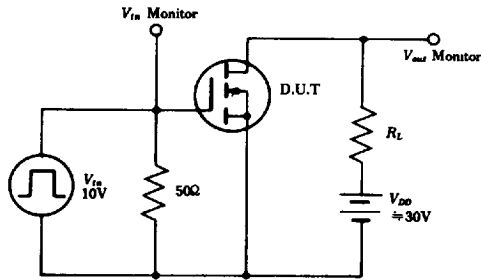


HITACHI/(OPTOELECTRONICS)

NORMALIZED TRANSIENT THERMAL IMPEDANCE VS. PULSE WIDTH



SWITCHING TIME TEST CIRCUIT



WAVEFORMS

