Ordering number : ENA1043

SANYO Semiconductors
DATA SHEET

P-Channel Silicon MOSFET

MCH6655 — General-Purpose Switching Device Applications

Features

- 4V drive.
- Composite type with 2 MOSFETs contained in a single package, facilitating high-density mounting.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−60	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		−120	mA
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−480	mA
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm²×0.8mm) 1unit	0.6	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−60V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=−10V, I_D=−100μA	−1.2		−2.6	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=−10V, I_D=−60mA	100	180		mS
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=−60mA, V_{GS}=−10V		5.1	6.6	Ω
	$R_{DS}(on)2$	I_D=−30mA, V_{GS}=−4V		6.8	9.6	Ω
Input Capacitance	Ciss	V_{DS}=−20V, f=1MHz		13.5		pF
Output Capacitance	Coss	V_{DS}=−20V, f=1MHz		3.4		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−20V, f=1MHz		1.3		pF

Marking : XG

Continued on next page.

SANYO Semiconductor Co., Ltd.
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

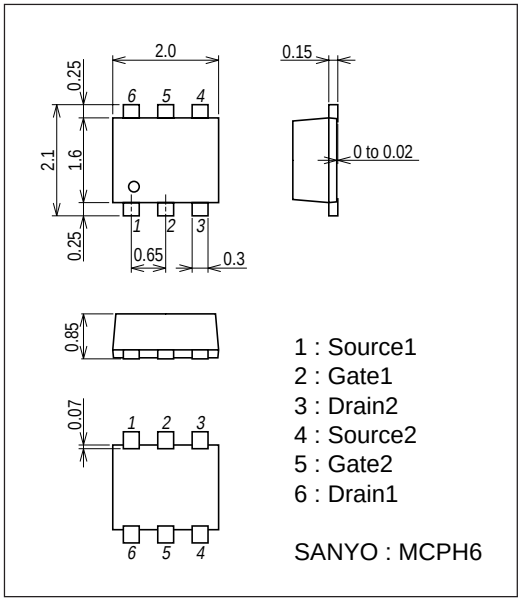
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		36.5		ns
Rise Time	t_r	See specified Test Circuit.		38		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		455		ns
Fall Time	t_f	See specified Test Circuit.		160		ns
Total Gate Charge	Qg	V_{DS}=–30V, V_{GS}=–10V, I_D=–120mA		1.6		nC
Gate-to-Source Charge	Qgs	V_{DS}=–30V, V_{GS}=–10V, I_D=–120mA		0.4		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=–30V, V_{GS}=–10V, I_D=–120mA		0.16		nC
Diode Forward Voltage	V_{SD}	I_S=–120mA, V_{GS}=0V		–0.85	–1.2	V

Package Dimensions

unit : mm (typ)

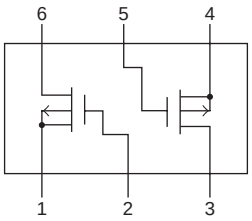
7022A-006



1 : Source1
2 : Gate1
3 : Drain2
4 : Source2
5 : Gate2
6 : Drain1

SANYO : MCPH6

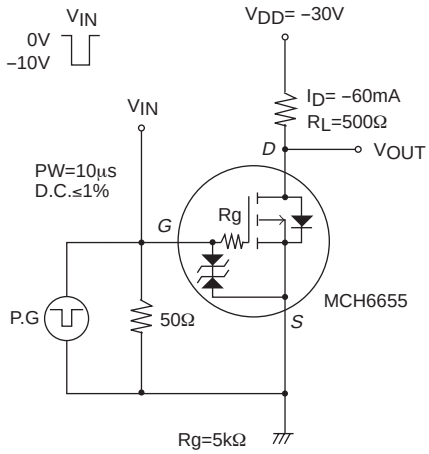
Electrical Connection

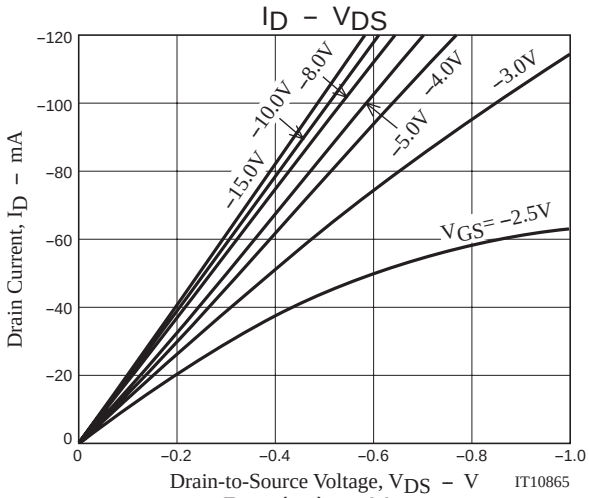


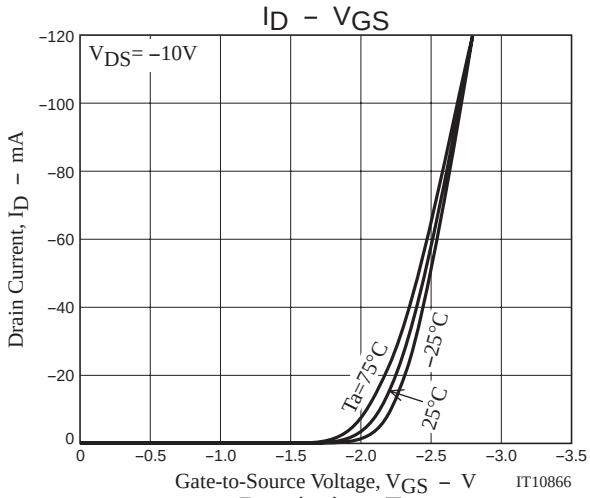
1 : Source1
2 : Gate1
3 : Drain2
4 : Source2
5 : Gate2
6 : Drain1

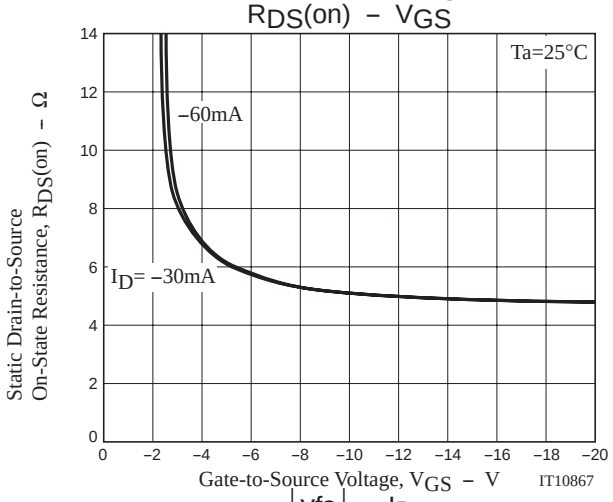
Top view

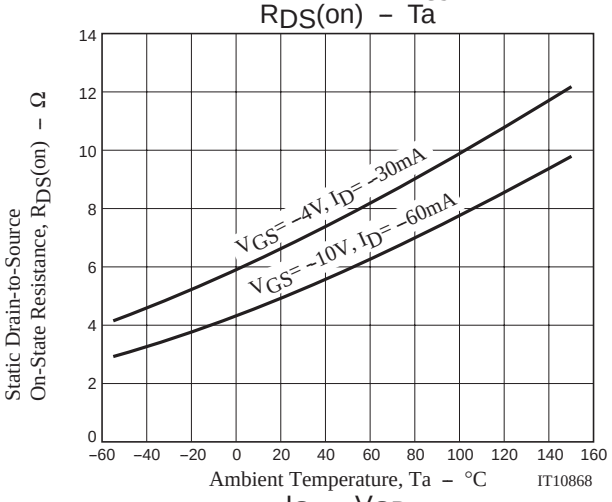
Switching Time Test Circuit

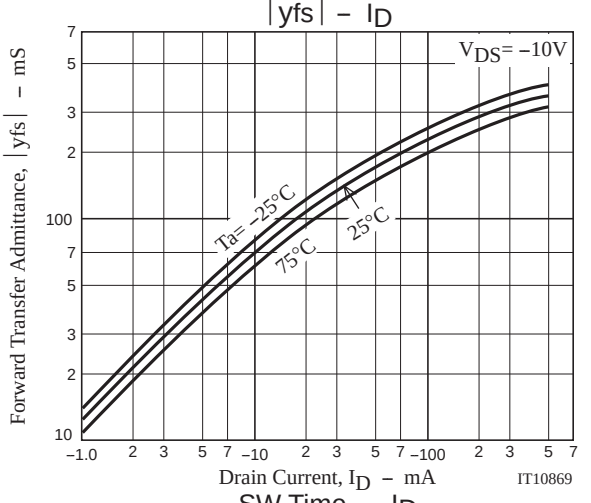


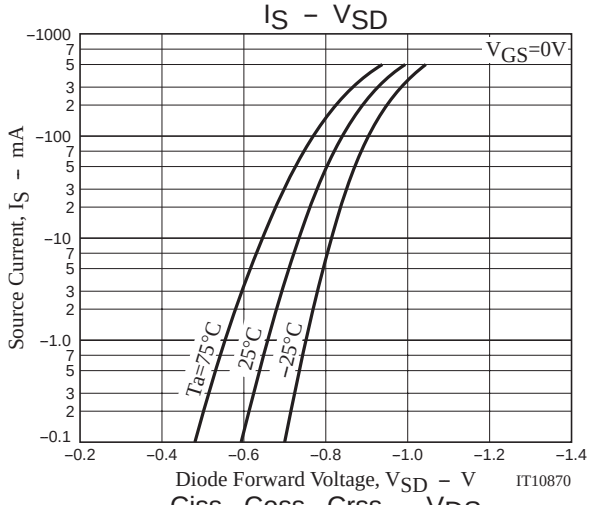

ID – VDS
Drain Current, ID – mA
Drain-to-Source Voltage, VDS – V
IT10865
–15.0V
–10.0V
–8.0V
–5.0V
–4.0V
–3.0V
VGS= –2.5V

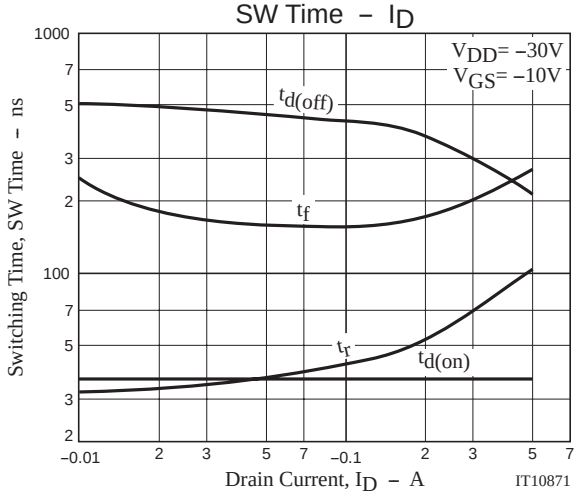

ID – VGS
VDS= –10V
Drain Current, ID – mA
Gate-to-Source Voltage, VGS – V
IT10866
Ta=75°C
25°C
–25°C

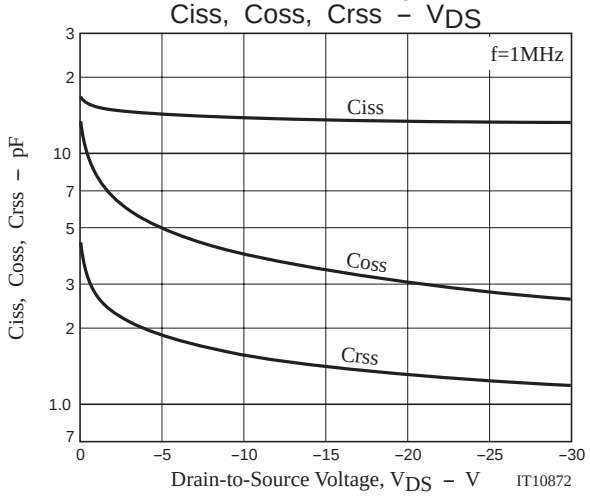

RDS(on) – VGS
Ta=25°C
–60mA
ID= –30mA
Static Drain-to-Source
On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT10867

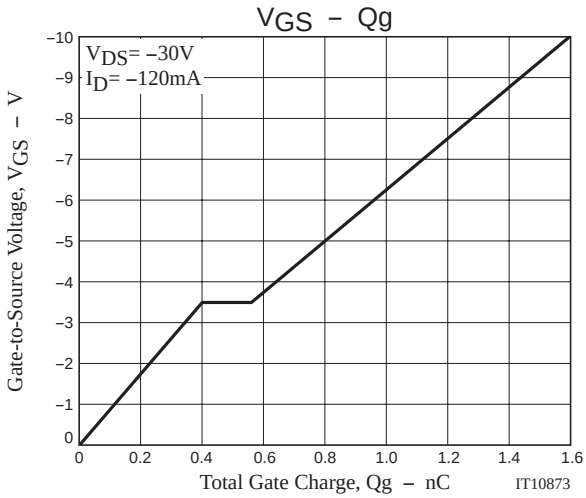

RDS(on) – Ta
VGS= –4V, ID= –30mA
VGS= –10V, ID= –60mA
Static Drain-to-Source
On-State Resistance, RDS(on) – Ω
Ambient Temperature, Ta – °C
IT10868

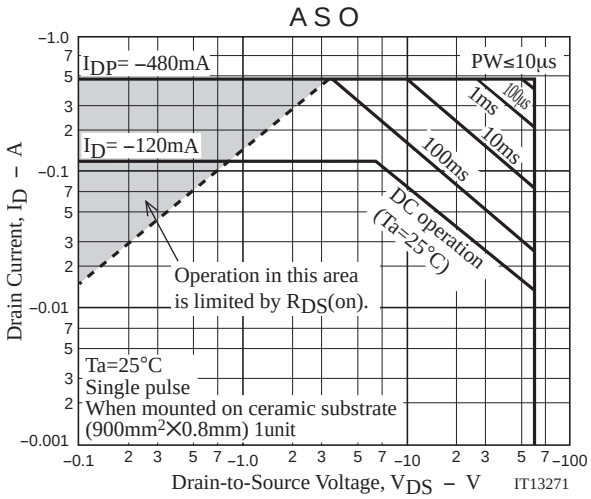

|yfs| – ID
VDS= –10V
Ta= –25°C
75°C
25°C
Forward Transfer Admittance, |yfs| – mS
Drain Current, ID – mA
IT10869

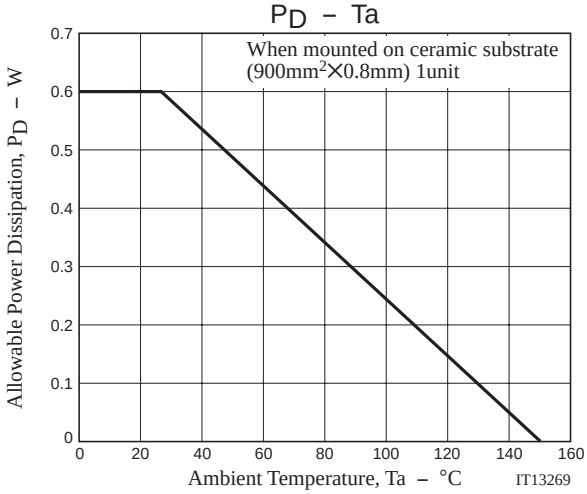

IS – VSD
VGS=0V
Ta=75°C
25°C
–25°C
Source Current, IS – mA
Diode Forward Voltage, VSD – V
IT10870


SW Time – ID
VDD= –30V
VGS= –10V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT10871


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT10872







Note on usage : Since the MCH6655 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

This catalog provides information as of February, 2008. Specifications and information herein are subject to change without notice.