Ordering number:ENN6460

P-Channel Silicon MOSFET

MCH6605

Ultrahigh-Speed Switching Applications

Features

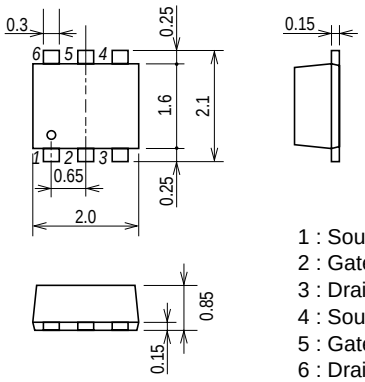
- Low ON resistance.
- Ultrahigh-speed swithcing.
- 4V drive.
- Composite type with 2 MOSFETs contained in one package, facilitating high-density mounting.

Package Dimensions

unit:mm

2173

[MCH6605]



1 : Source1
2 : Gate1
3 : Drain2
4 : Source2
5 : Gate2
6 : Drain1
SANYO : MCPH6

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		–50	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		–0.14	A
Drain Current (pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–0.56	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm) 1unit	0.8	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}=0	–50			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–50V, V_{GS}=0			–10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=–10V, I_D=–100μA	–1		–2.5	V
Forward Transfer Admittance	| yfs |	V_{DS}=–10V, I_D=–40mA	50	70		mS
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=–40mA, V_{GS}=–10V		17	22	Ω
	R_{DS}(on)2	I_D=–20mA, V_{GS}=–4V		23	32	Ω
Input Capacitance	Ciss	V_{DS}=–10V, f=1MHz		6.2		pF
Output Capacitance	Coss	V_{DS}=–10V, f=1MHz		4.0		pF
Reverse Transfer Capacitance	Crss	V_{DS}=–10V, f=1MHz		1.3		pF

Marking : FE

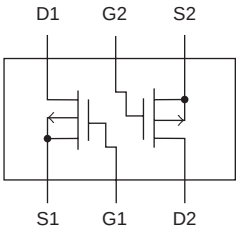
Continued on next page.

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

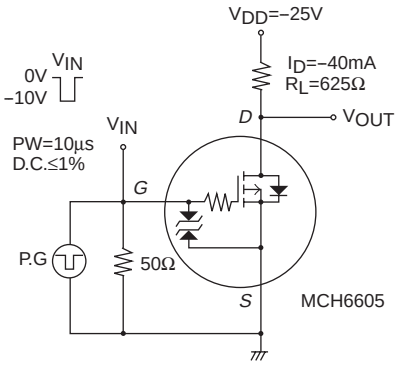
Continued from preceding page.

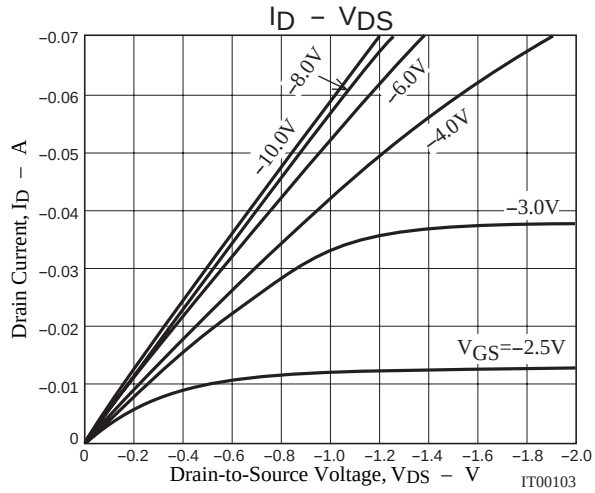
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t_d(on)	See specified Test Circuit		13		ns
Rise Time	t_r	See specified Test Circuit		10		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit		100		ns
Fall Time	t_f	See specified Test Circuit		150		ns
Total Gate Charge	Qg	V_{DS}=–10V, V_{GS}=–10V, I_D=–70mA		1.32		nC
Gate-to-Source Charge	Qgs	V_{DS}=–10V, V_{GS}=–10V, I_D=–70mA		0.17		nC
Gate-to-Drain "Miller" Charge	Qgd	V_{DS}=–10V, V_{GS}=–10V, I_D=–70mA		0.34		nC
Diode Forward Voltage	V_{SD}	I_S=–70mA, V_{GS}=0		0.85	1.2	V

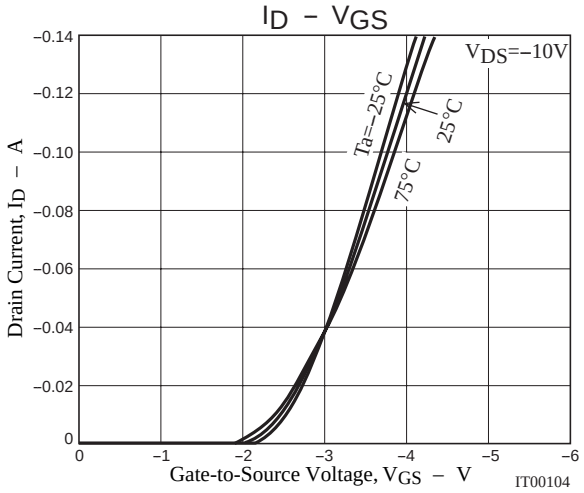
Electrical Connection

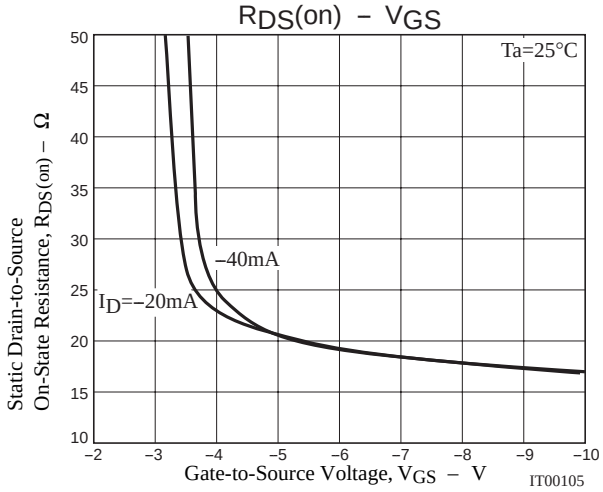


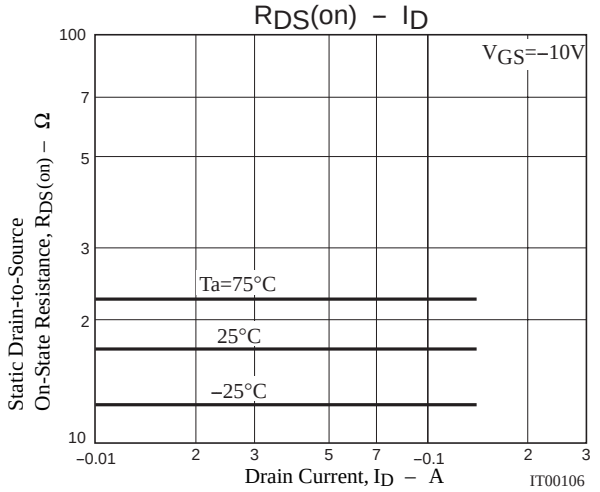
Switching Time Test Circuit

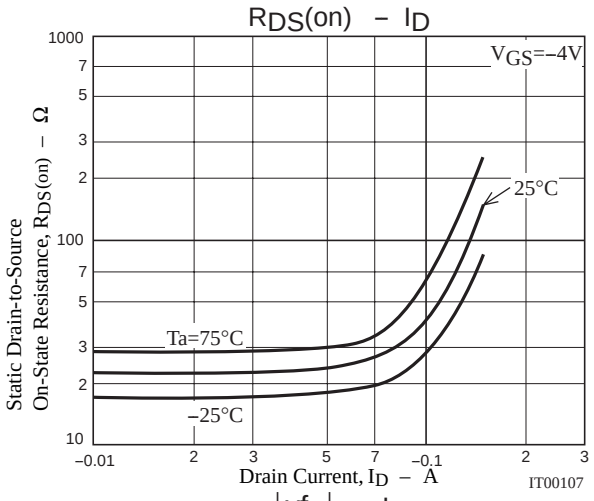


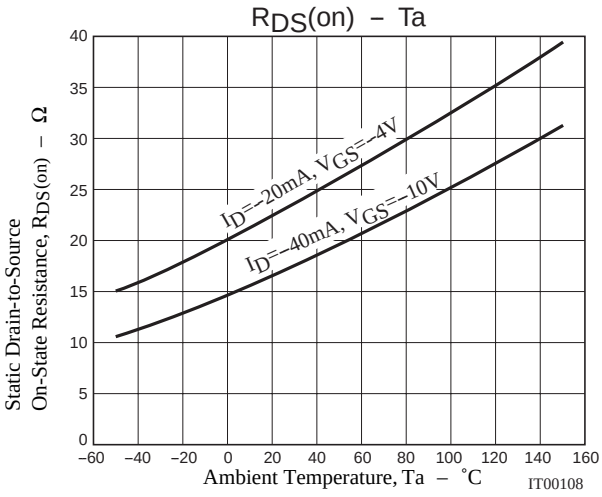


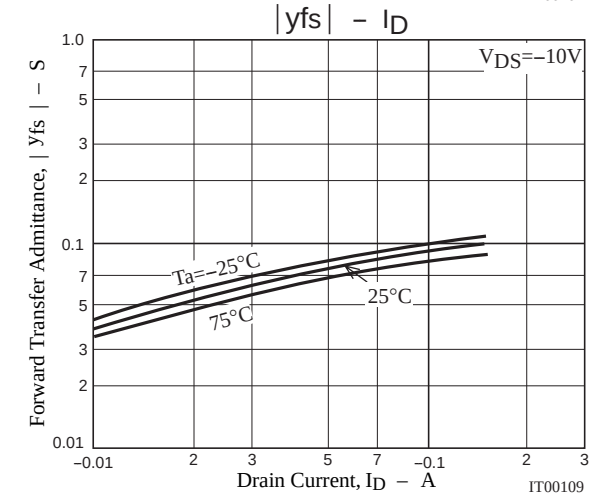


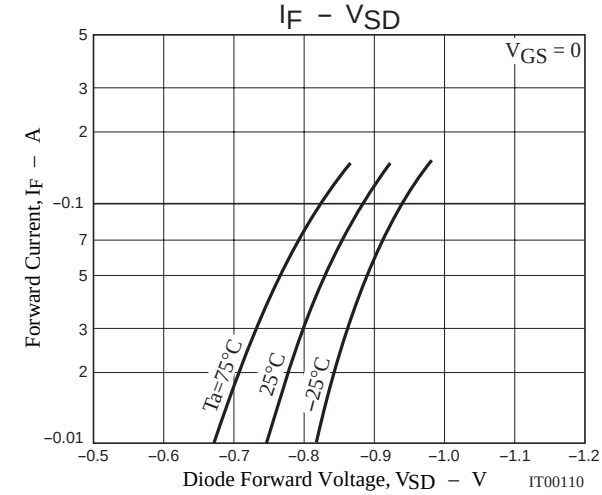


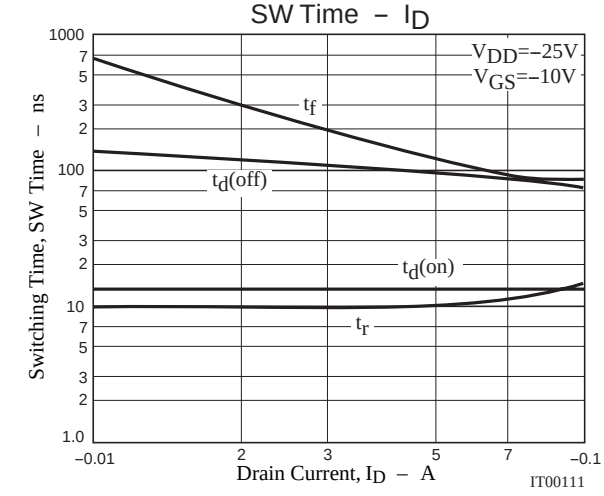


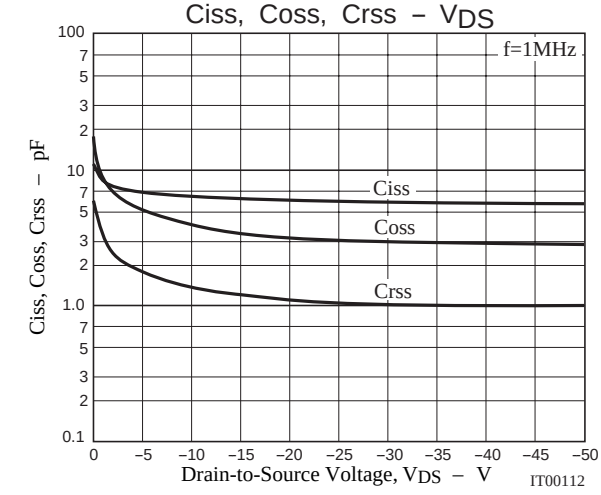

RDS(on) – ID
VGS=–4V
25°C
Ta=75°C
–25°C
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Drain Current, ID – A
IT00107

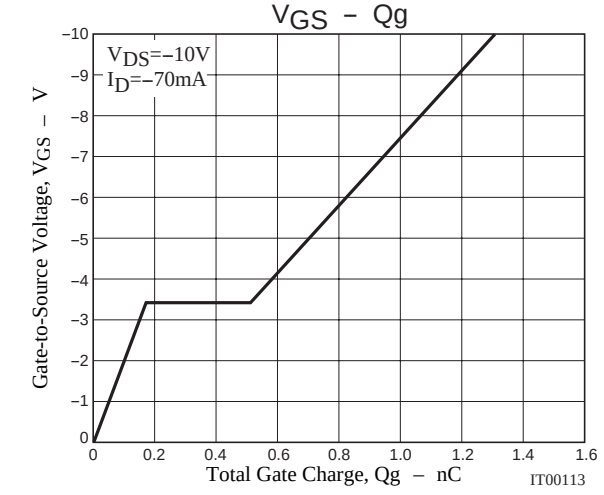

RDS(on) – Ta
ID=–20mA, VGS=–4V
ID=–40mA, VGS=–10V
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Ambient Temperature, Ta – °C
IT00108

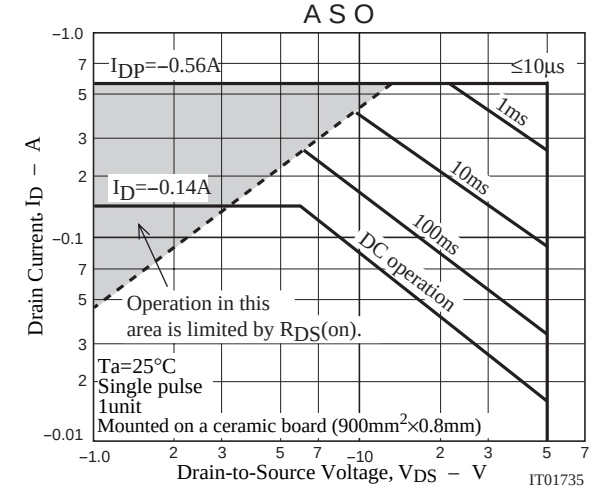

|yfs| – ID
VDS=–10V
Ta=–25°C
25°C
75°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT00109


IF – VSD
VGS = 0
Ta=75°C
25°C
–25°C
Forward Current, IF – A
Diode Forward Voltage, VSD – V
IT00110


SW Time – ID
VDD=–25V
VGS=–10V
tf
td(off)
td(on)
tr
Switching Time, SW Time – ns
Drain Current, ID – A
IT00111


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT00112


VGS – Qg
VDS=–10V
ID=–70mA
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT00113


A S O
IDP=–0.56A
≤10μs
1ms
10ms
100ms
DC operation
ID=–0.14A
Operation in this area is limited by RDS(on).
Ta=25°C
Single pulse
1unit
Mounted on a ceramic board (900mm2×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT01735