Ordering number:ENN6426

P-Channel Silicon MOSFET

CPH3305

Ultrahigh-Speed Switching Applications

Features

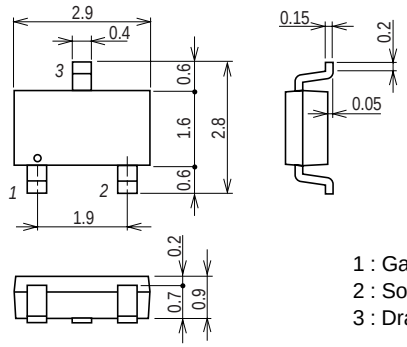
- Low ON resistance.
- Ultrahigh-speed switching.
- 4V drive.

Package Dimensions

unit:mm

2152A

[CPH3305]



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		–0.8	A
Drain Current (pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–3.2	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm)	1	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	–60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–60V, 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=–1mA	–1.0		–2.4	V
Forward Transfer Admittance	| yfs |	V_{DS}=–10V, I_D=–0.4A	0.5	0.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}1$	I_D=–0.4A, V_{GS}=–10V		980	1300	mΩ
	$R_{DS(on)}2$	I_D=–0.2A, V_{GS}=–4V		1300	1800	mΩ
Input Capacitance	Ciss	V_{DS}=–20V, f=1MHz		75		pF
Output Capacitance	Coss	V_{DS}=–20V, f=1MHz		22		pF
Reverse Transfer Capacitance	Crss	V_{DS}=–20V, f=1MHz		7		pF

Marking : JE

Continued on next page.

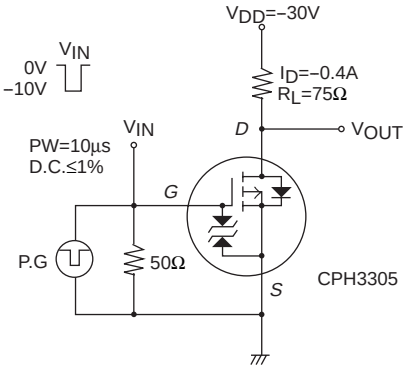
SANYO Electric Co.,Ltd. Semiconductor Company

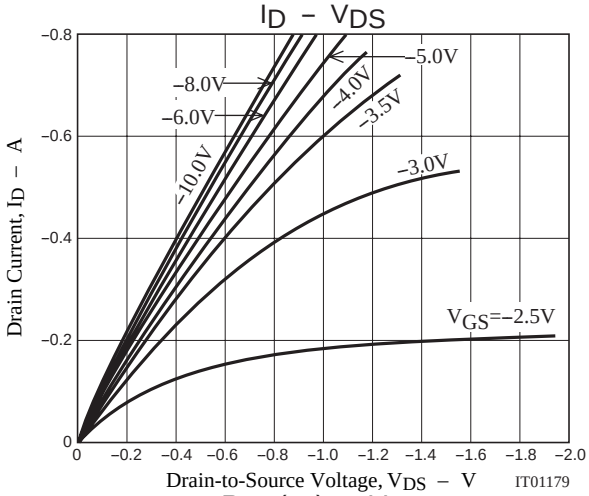
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

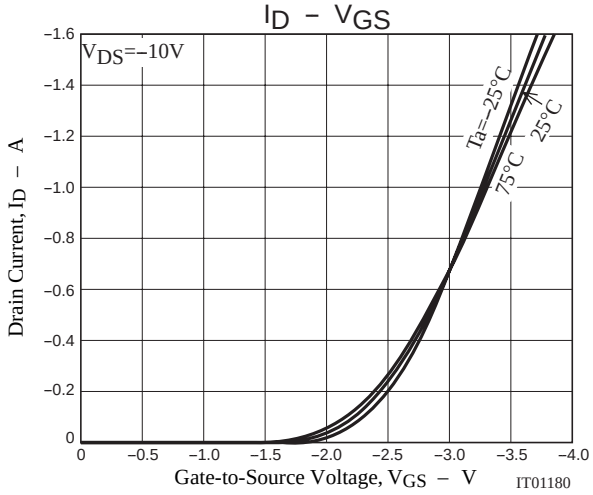
Continued from preceding page.

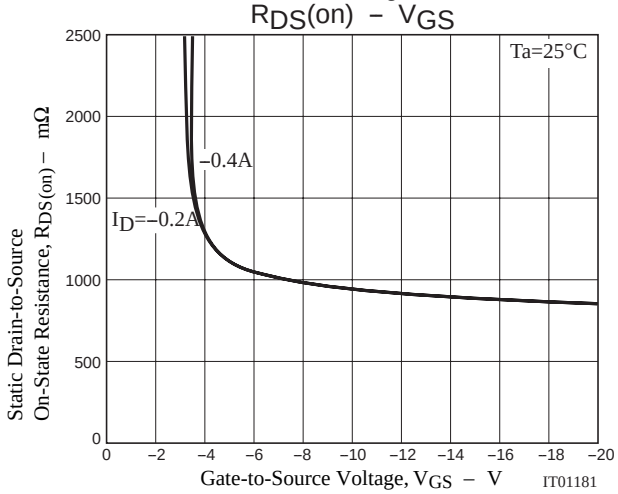
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		6		ns
Rise Time	t_r	See specified Test Circuit		4		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		21		ns
Fall Time	t_f	See specified Test Circuit		16		ns
Total Gate Charge	Qg	V_{DS}=–10V, V_{GS}=–10V, I_D=–0.8A		3.7		nC
Gate-to-Source Charge	Qgs	V_{DS}=–10V, V_{GS}=–10V, I_D=–0.8A		0.6		nC
Gate-to-Drain "Miller" Charge	Qgd	V_{DS}=–10V, V_{GS}=–10V, I_D=–0.8A		0.5		nC
Diode Forward Voltage	V_{SD}	I_S=–0.8A, V_{GS}=0		–0.84	–1.2	V

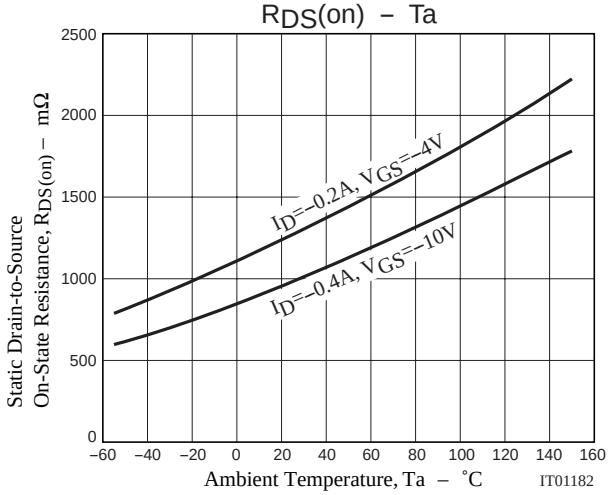
Switching Time Test Circuit

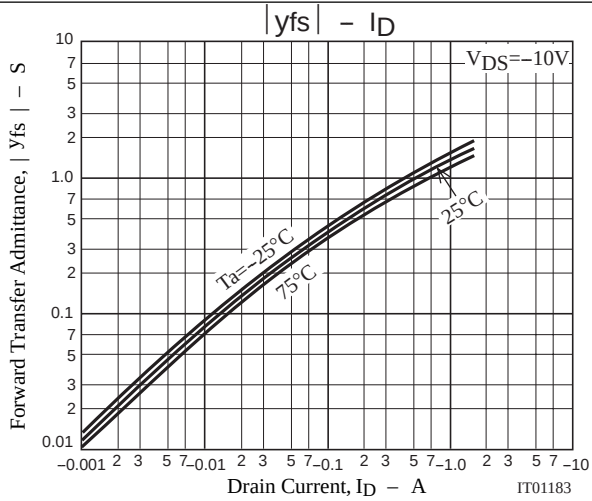


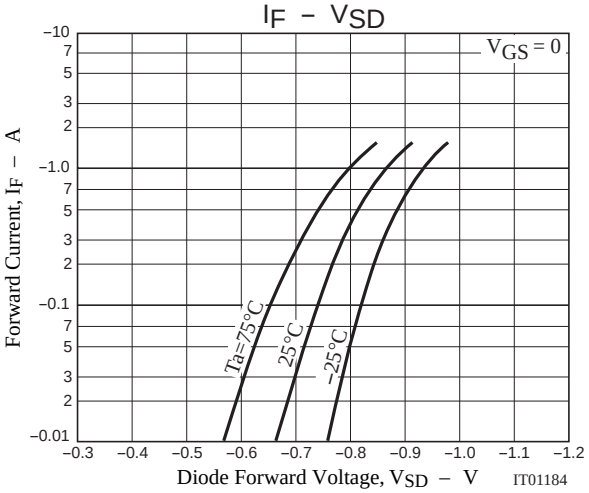


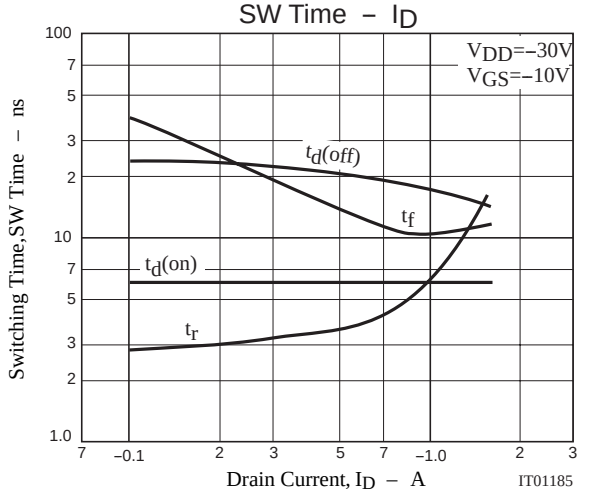


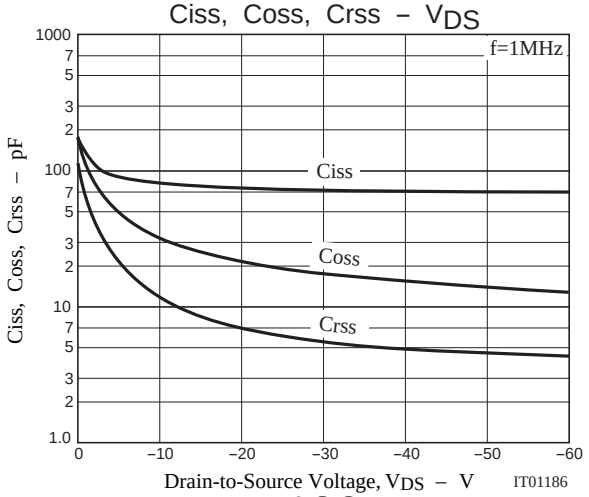


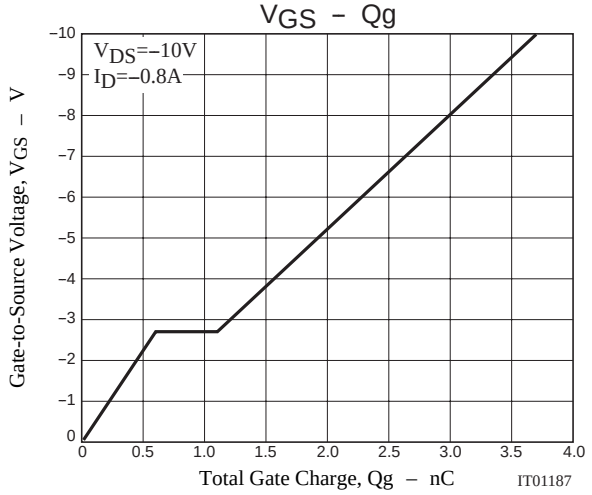


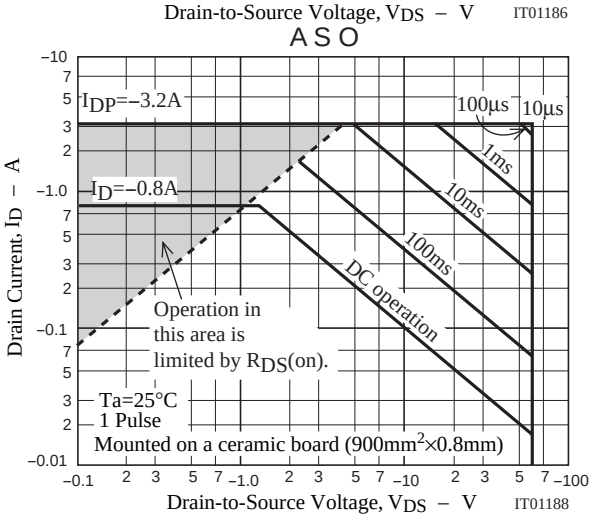

|yfs| – ID
VDS=–10V
Ta=–25°C
25°C
75°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT01183

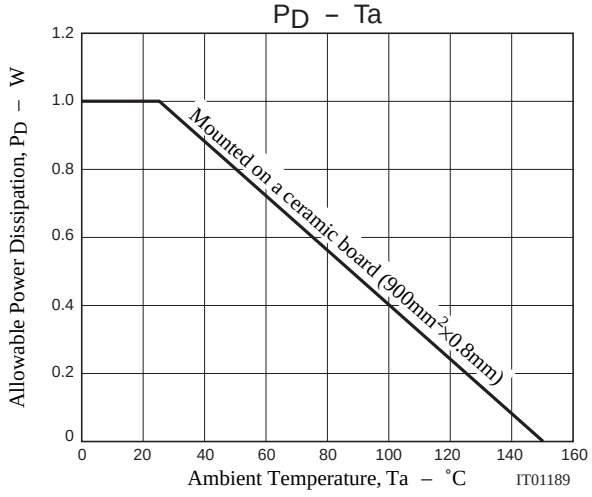

IF – VSD
VGS = 0
Ta=75°C
25°C
–25°C
Forward Current, IF – A
Diode Forward Voltage, VSD – V
IT01184


SW Time – ID
VDD=–30V
VGS=–10V
td(off)
tf
td(on)
tr
Switching Time,SW Time – ns
Drain Current, ID – A
IT01185


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT01186


VGS – Qg
VDS=–10V
ID=–0.8A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT01187


A S O
IDP=–3.2A
ID=–0.8A
100µs
10µs
1ms
10ms
100ms
DC operation
Operation in
this area is
limited by RDS(on).
Ta=25°C
1 Pulse
Mounted on a ceramic board (900mm2×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT01188


PD – Ta
Mounted on a ceramic board (900mm2×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT01189