Ordering number : ENN7121

P-Channel Silicon MOSFET

CPH3317

Ultrahigh-Speed Switching Applications

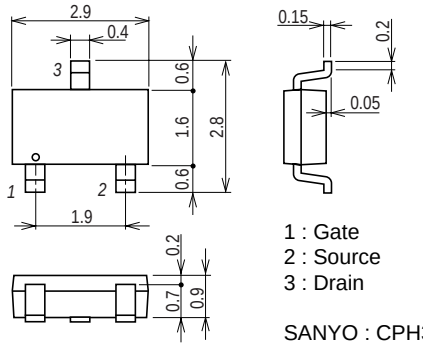
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Package Dimensions

unit : mm
2152A

[CPH3317]



1 : Gate
2 : Source
3 : Drain

SANYO : CPH3

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−20	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		−1	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−4	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm)	0.9	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	−20			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−20V, V_{GS}=0			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0			±10	μA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=−10V, I_D=−1mA	−0.4		−1.4	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=−10V, I_D=−500mA	0.84	1.2		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=−500mA, V_{GS}=−4V		360	470	mΩ
	$R_{DS}(on)2$	I_D=−300mA, V_{GS}=−2.5V		520	730	mΩ

Marking : JS

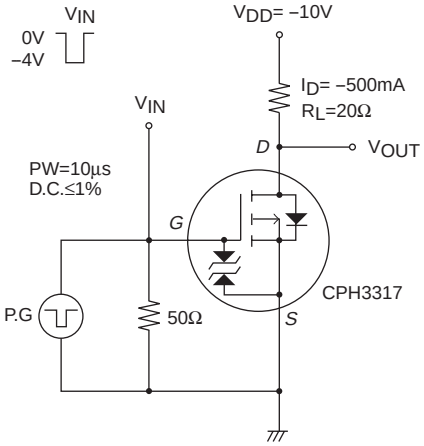
Continued on next page.

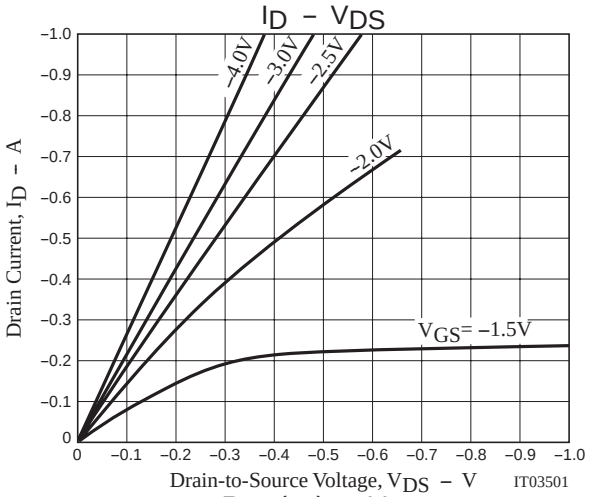
SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

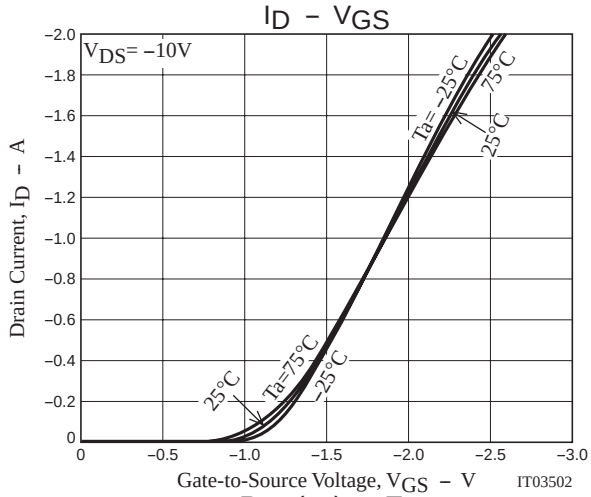
Continued from preceding page.

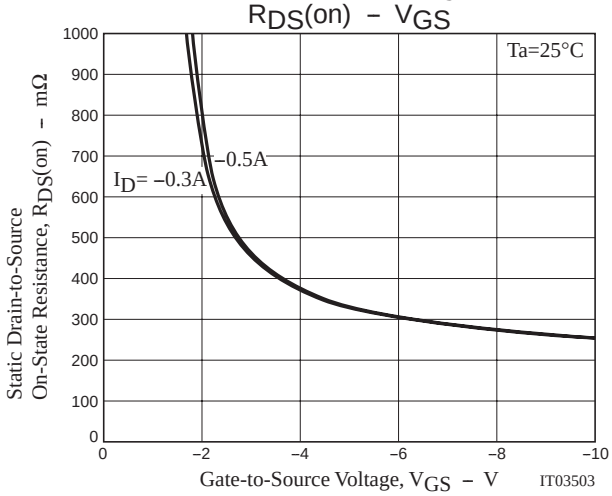
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=–10V, f=1MHz		115		pF
Output Capacitance	Coss	V_{DS}=–10V, f=1MHz		23		pF
Reverse Transfer Capacitance	Crss	V_{DS}=–10V, f=1MHz		15		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		8		ns
Rise Time	t_{r}	See specified Test Circuit.		6		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		15		ns
Fall Time	t_{f}	See specified Test Circuit.		7		ns
Total Gate Charge	Qg	V_{DS}=–10V, V_{GS}=-4V, I_{D}=-1A		1.5		nC
Gate-to-Source Charge	Qgs	V_{DS}=–10V, V_{GS}=-4V, I_{D}=-1A		0.4		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=–10V, V_{GS}=-4V, I_{D}=-1A		0.3		nC
Diode Forward Voltage	V_{SD}	I_{S}=–1A, V_{GS}=0		–0.89	–1.5	V

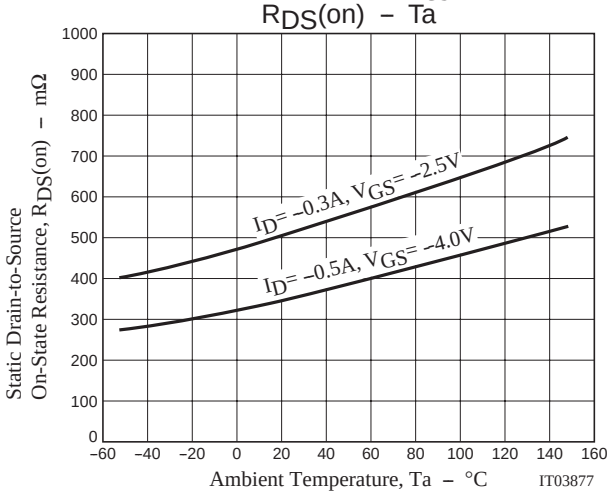
Switching Time Test Circuit

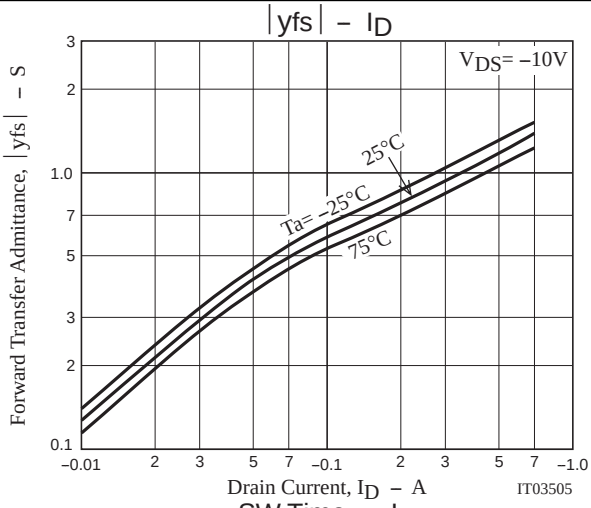


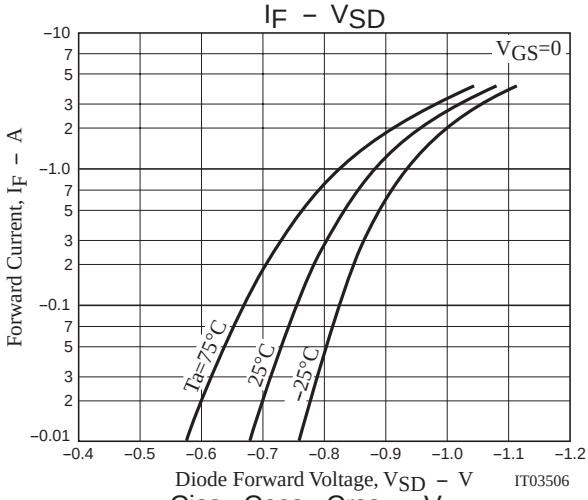


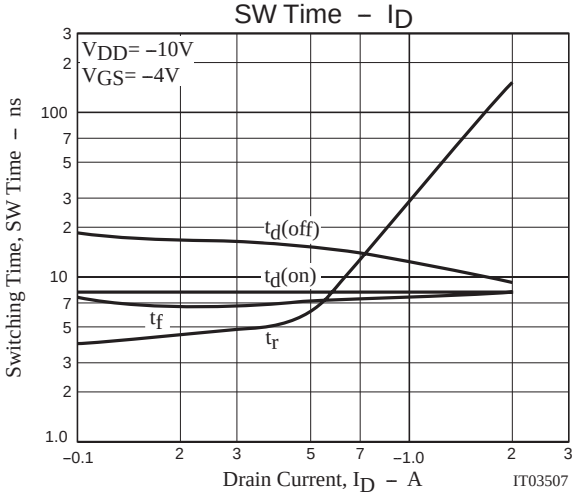


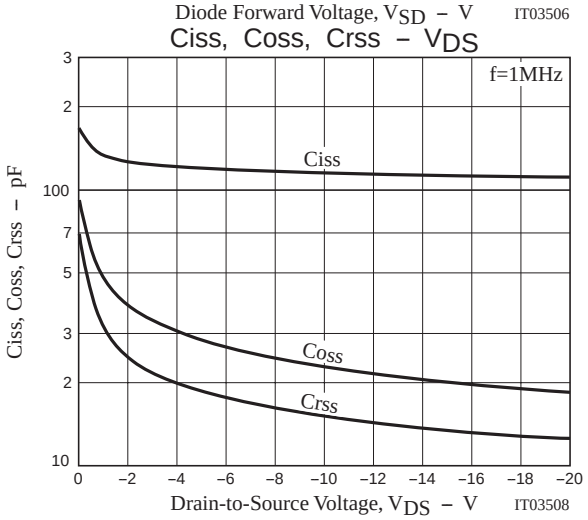


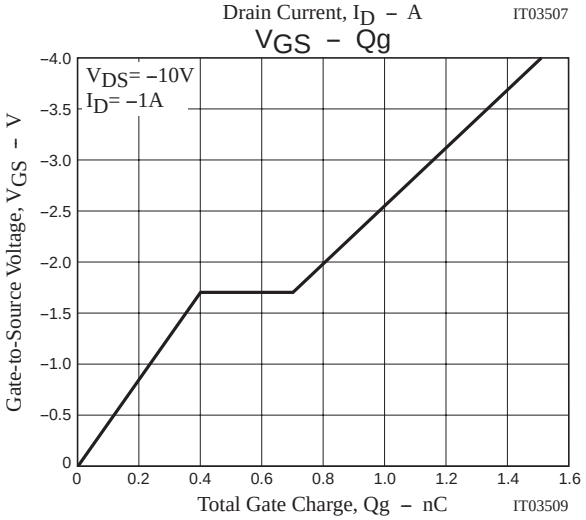


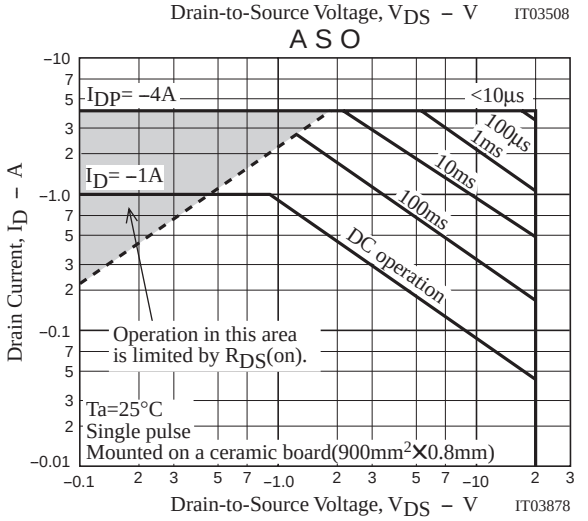

|yfs| – ID
VDS= –10V
25°C
Ta= –25°C
75°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT03505

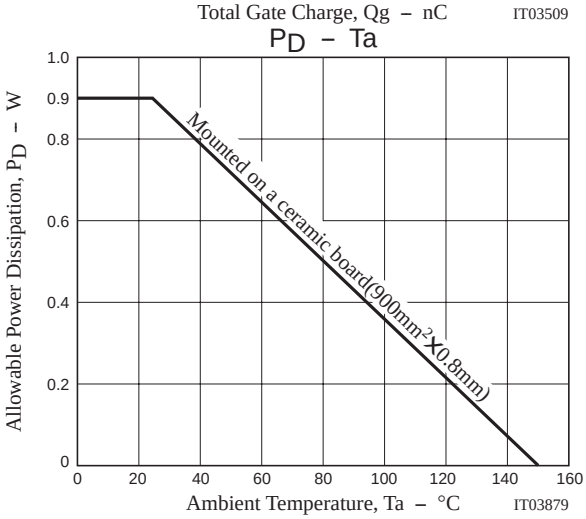

IF – VSD
VGS=0
Ta=75°C
25°C
–25°C
Forward Current, IF – A
Diode Forward Voltage, VSD – V
IT03506


SW Time – ID
VDD= –10V
VGS= –4V
td(off)
td(on)
tf
tr
Switching Time, SW Time – ns
Drain Current, ID – A
IT03507


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT03508


VGS – Qg
VDS= –10V
ID= –1A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT03509


ASO
IDP= –4A
<10µs
100µs
1ms
10ms
100ms
DC operation
ID= –1A
Operation in this area
is limited by RDS(on).
Ta=25°C
Single pulse
Mounted on a ceramic board(900mm²×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT03878


PD – Ta
Mounted on a ceramic board(900mm²×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT03879

Note on usage : Since the CPH3317 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.