Ordering number : ENN7212

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DATA SHEET

CPH6318

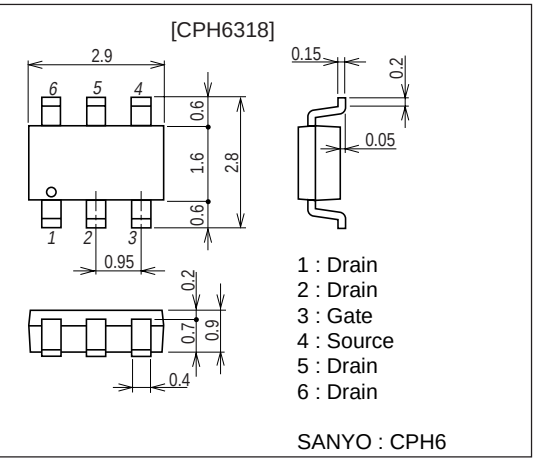
P-Channel Silicon MOSFET
High-Speed Switching Applications

Features

- Low ON-resistance.
- High-speed switching.
- 1.8V drive.

Package Dimensions

unit : mm
2151A



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−12	V
Gate-to-Source Voltage	V_{GSS}		±8	V
Drain Current (DC)	I_D		−6	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−24	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm)	1.6	W
		Mounted on a FR4 board PW≤5s	2.0	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	−12			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−12V, V_{GS}=0			−10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±6.4V, V_{DS}=0			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−6V, I_D=−1mA	−0.3		−1.0	V
Forward Transfer Admittance	|yfs|	V_{DS}=−6V, I_D=−3A	7.7	11		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−3A, V_{GS}=−4.5V		26	34	mΩ
	R_{DS}(on)2	I_D=−1.5A, V_{GS}=−2.5V		36	50	mΩ
	R_{DS}(on)3	I_D=−0.5A, V_{GS}=−1.8V		50	75	mΩ

Marking : JU

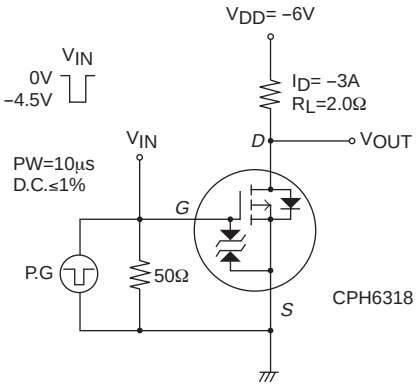
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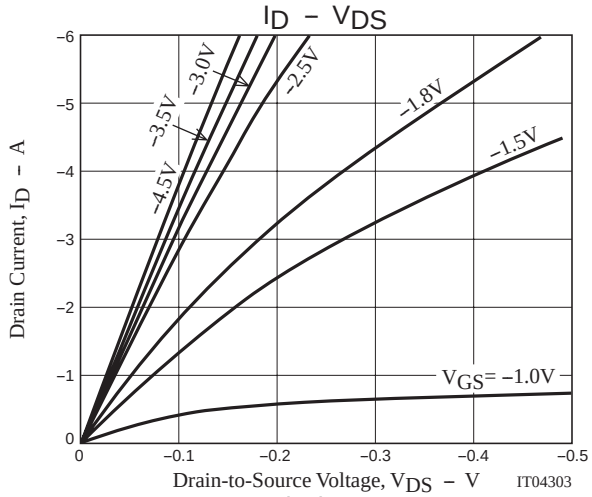
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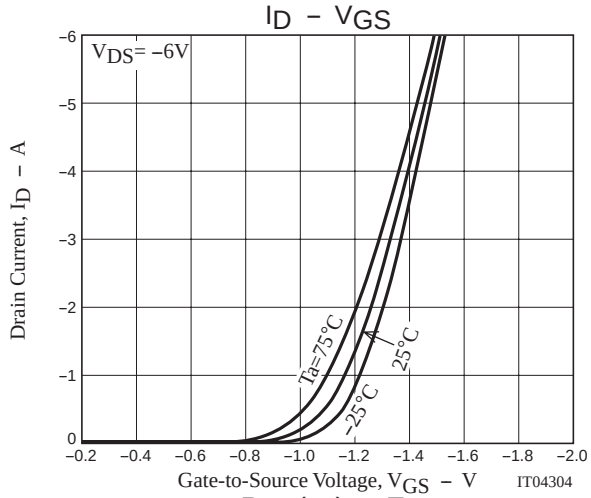
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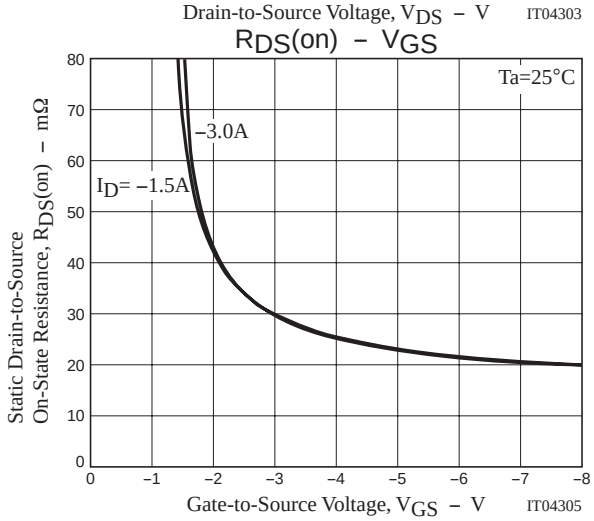
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=−6V, f=1MHz		1900		pF
Output Capacitance	Coss	V_{DS}=−6V, f=1MHz		440		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−6V, f=1MHz		360		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		28		ns
Rise Time	t_{r}	See specified Test Circuit.		170		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		190		ns
Fall Time	t_{f}	See specified Test Circuit.		170		ns
Total Gate Charge	Qg	V_{DS}=−6V, V_{GS}=−4.5V, I_{D}=−6A		22		nC
Gate-to-Source Charge	Qgs	V_{DS}=−6V, V_{GS}=−4.5V, I_{D}=−6A		3.0		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=−6V, V_{GS}=−4.5V, I_{D}=−6A		7.0		nC
Diode Forward Voltage	V_{SD}	I_{S}=−6A, V_{GS}=0		−0.86	−1.5	V

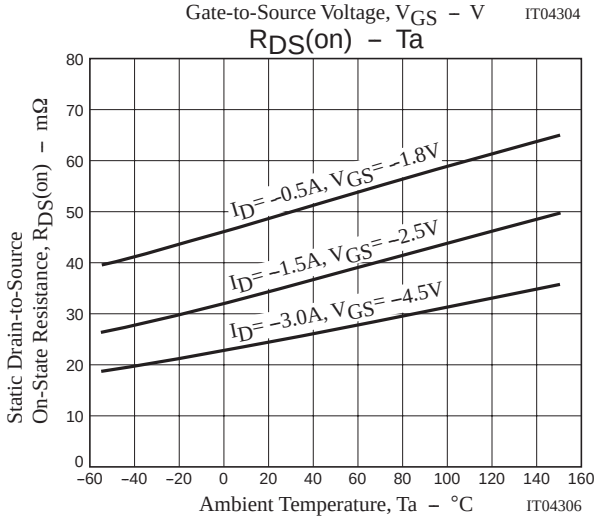
Switching Time Test Circuit

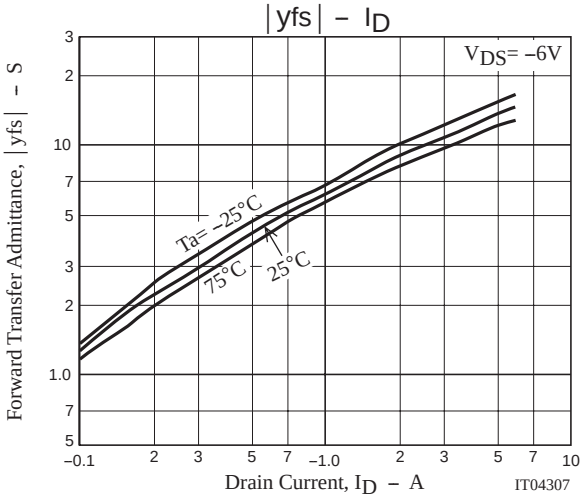


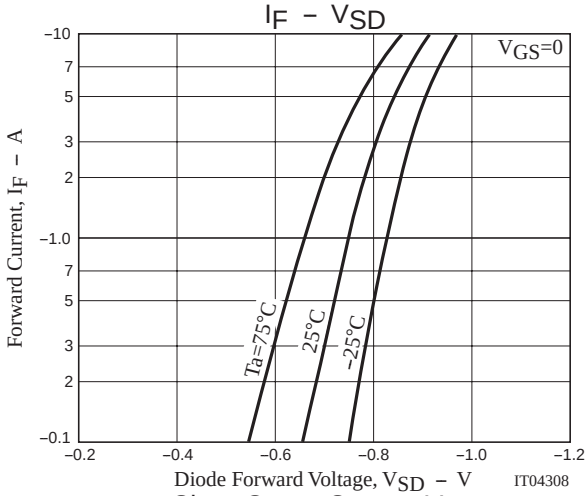


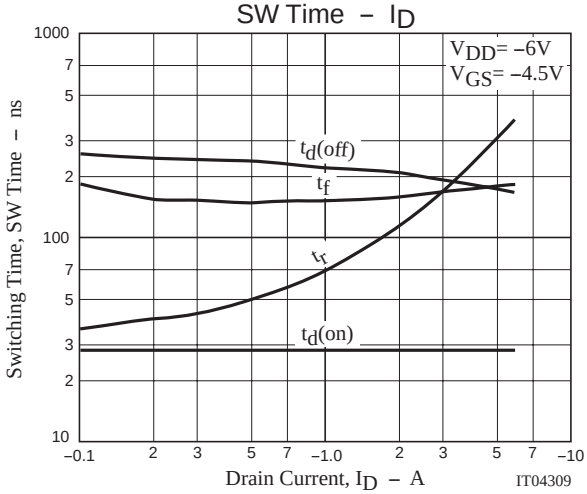


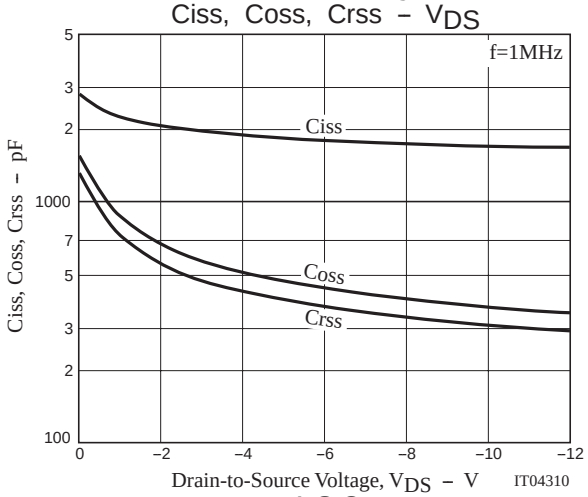


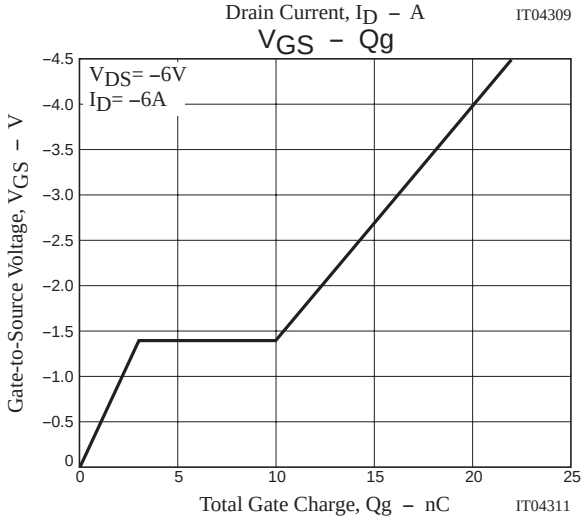


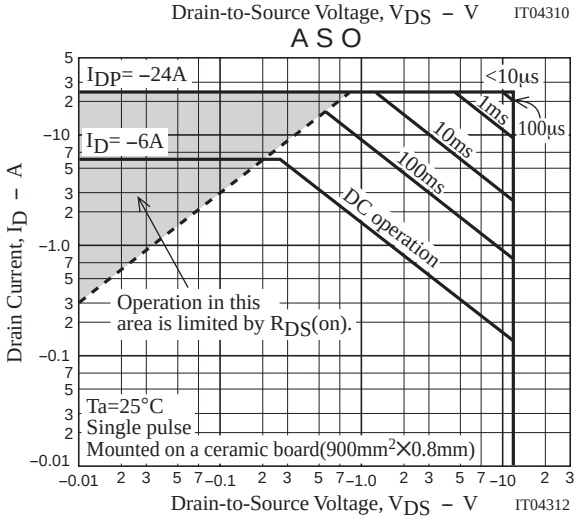

|yfs| – ID
VDS= –6V
Ta= –25°C
75°C
25°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT04307

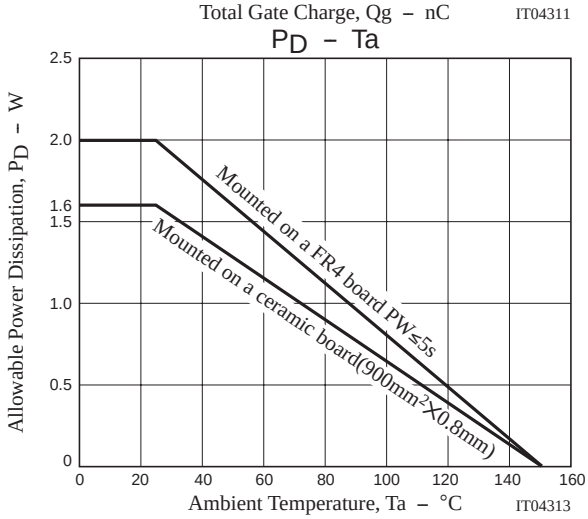

IF – VSD
VGS=0
Ta=75°C
25°C
–25°C
Forward Current, IF – A
Diode Forward Voltage, VSD – V
IT04308


SW Time – ID
VDD= –6V
VGS= –4.5V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT04309


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT04310


VGS – Qg
VDS= –6V
ID= –6A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT04311


ASO
IDP= –24A
ID= –6A
<10µs
1ms
100µs
10ms
100ms
DC operation
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
IT04312


PD – Ta
Mounted on a FR4 board PW≤5s
Mounted on a ceramic board(900mm2×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT04313

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