Ordering number : ENN8106

SANYO Semiconductors
DATA SHEET

N-Channel Silicon MOSFET

CPH6612 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V 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}		20	V
Gate-to-Source Voltage	V_{GSS}		±12	V
Drain Current (DC)	I_D		2	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	8	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	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		1.3	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=1A	1.4	2.4		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=1A, V_{GS}=4V		125	165	mΩ
	R_{DS}(on)2	I_D=0.5A, V_{GS}=2.5V		165	235	mΩ
	R_{DS}(on)3	I_D=0.1A, V_{GS}=1.8V		230	350	mΩ
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		120		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		31		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		25		pF

Marking : FY

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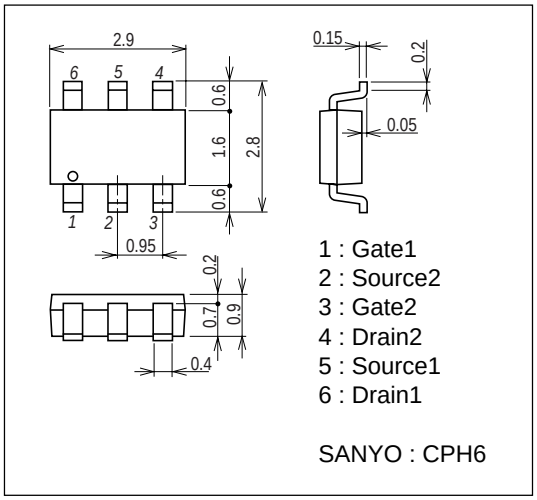
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit		9		ns
Rise Time	t_{r}	See specified Test Circuit		29		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit		18		ns
Fall Time	t_{f}	See specified Test Circuit		22		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=4V, I_{D}=2A		2.3		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=4V, I_{D}=2A		0.5		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=10V, V_{GS}=4V, I_{D}=2A		0.75		nC
Diode Forward Voltage	V_{SD}	I_{S}=2A, V_{GS}=0		0.94	1.2	V

Package Dimensions

unit : mm

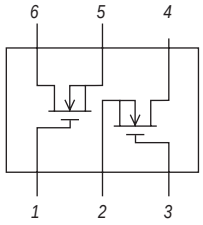
2238



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

SANYO : CPH6

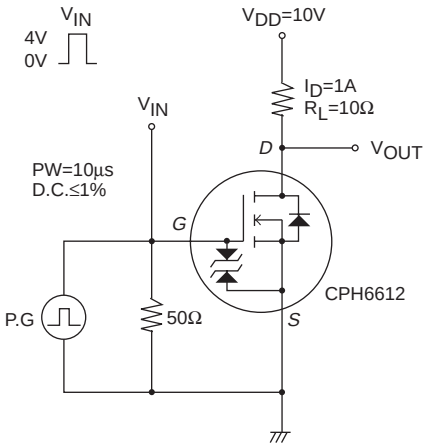
Electrical Connection

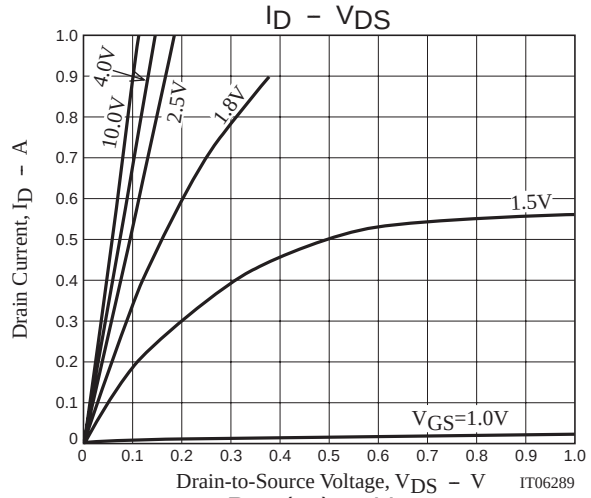


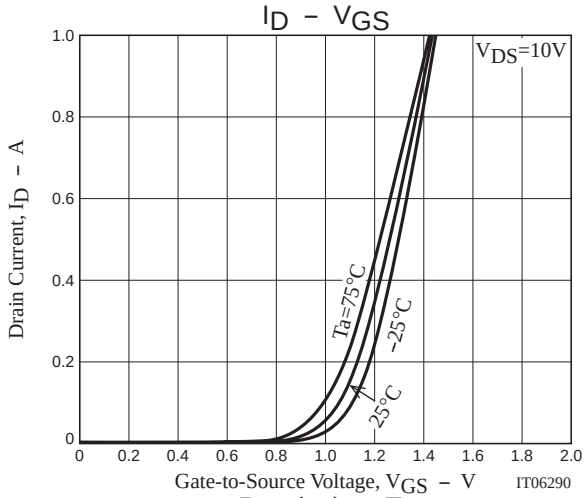
1 : Gate1
2 : Source2
3 : Gate2
4 : Drain2
5 : Source1
6 : Drain1

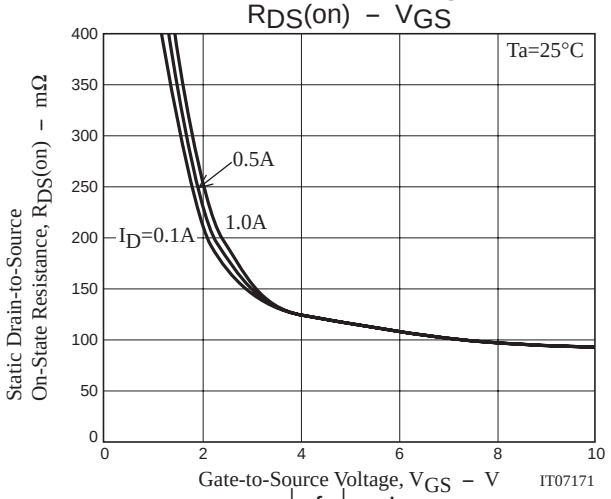
Top view

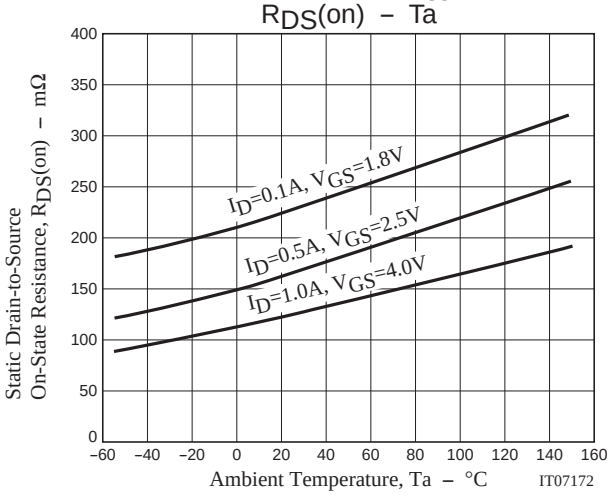
Switching Time Test Circuit

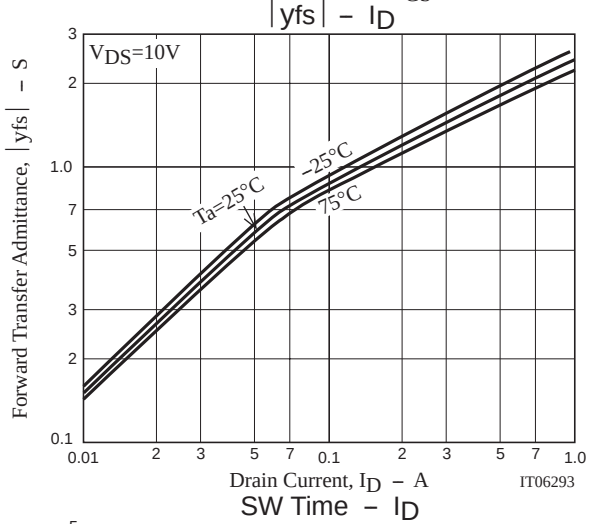


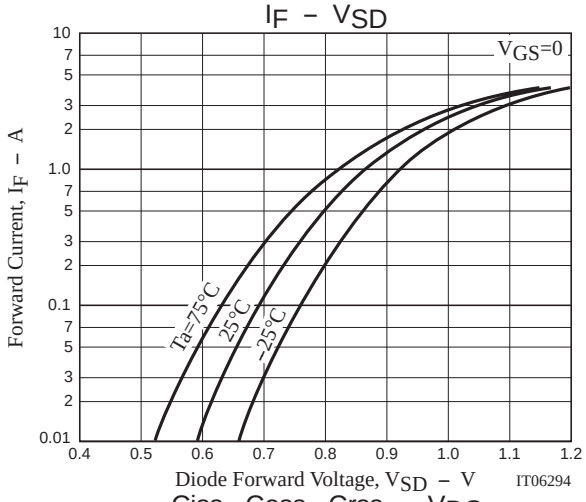

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
4.0V
10.0V
2.5V
1.8V
1.5V
VGS=1.0V
IT06289

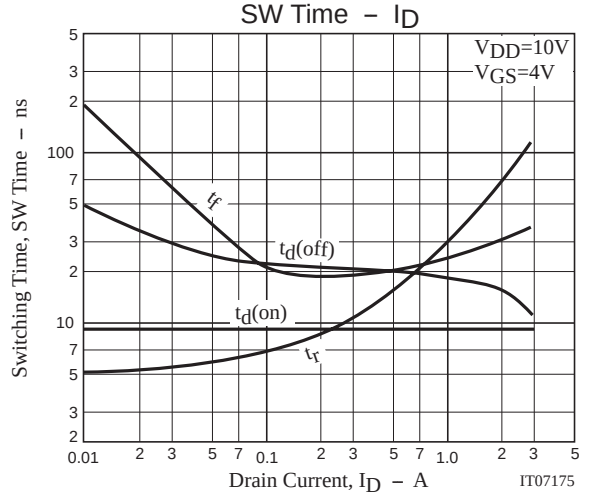

ID – VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
VDS=10V
Ta=75°C
25°C
–25°C
IT06290

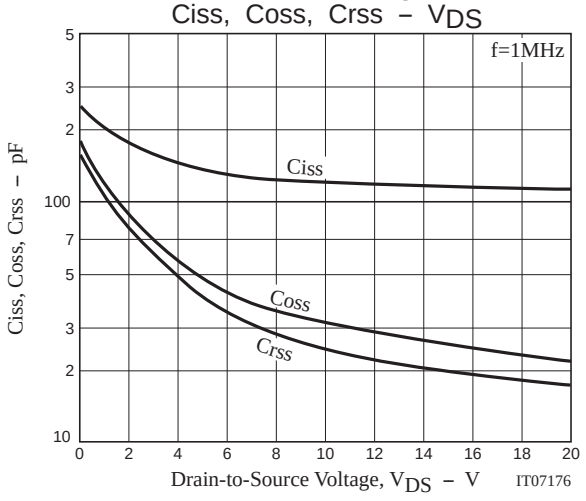

RDS(on) – VGS
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
Ta=25°C
0.5A
1.0A
ID=0.1A
IT07171

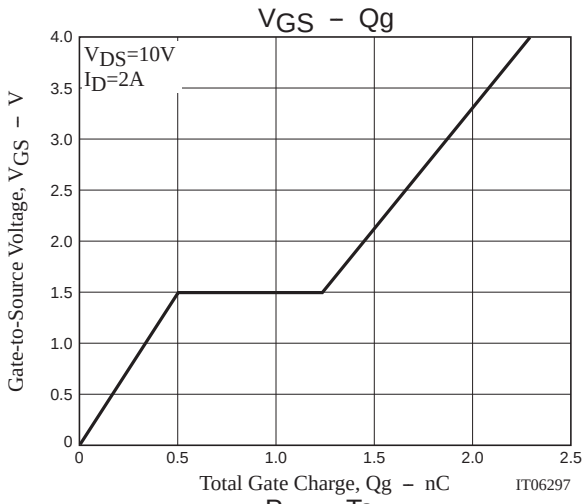

RDS(on) – Ta
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
ID=0.1A, VGS=1.8V
ID=0.5A, VGS=2.5V
ID=1.0A, VGS=4.0V
IT07172

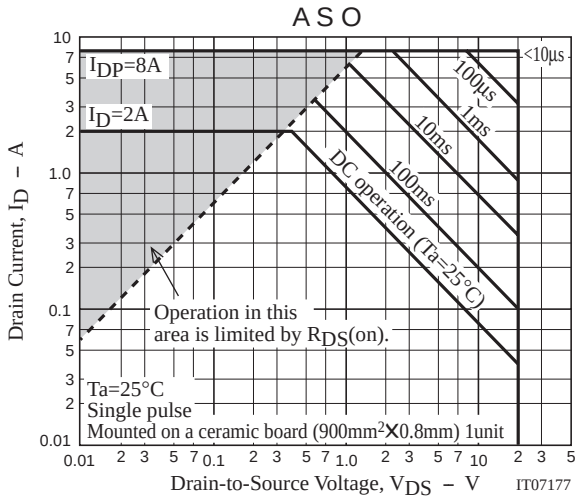

|yfs| – ID
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
VDS=10V
Ta=25°C
–25°C
75°C
IT06293

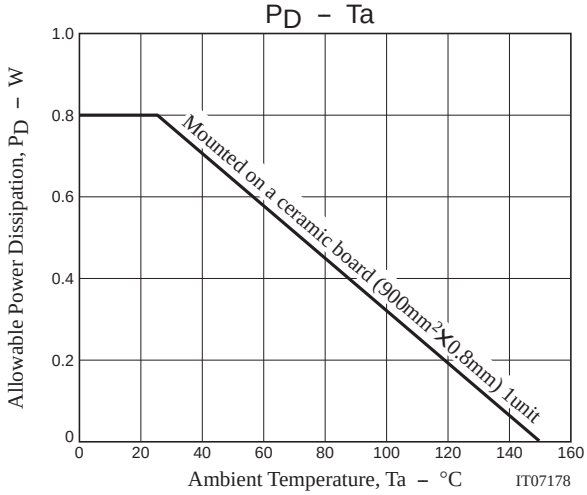

IF – VSD
Forward Current, IF – A
Diode Forward Voltage, VSD – V
VGS=0
Ta=75°C
25°C
–25°C
IT06294


SW Time – ID
Switching Time, SW Time – ns
Drain Current, ID – A
VDD=10V
VGS=4V
tf
td(off)
td(on)
tr
IT07175


Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
f=1MHz
Ciss
Coss
Crss
IT07176







Note on usage : Since the CPH6612 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.