



SANYO Semiconductors

DATA SHEET

CPH5826

MOSFET : N-Channel Silicon MOSFET

SBD : Schottky Barrier Diode

General-Purpose Switching Device
Applications

Features

- DC / DC converter applications.
- Composite type with a N-channel silicon MOSFET (MCH3406) and a schottky barrier diode (SB07-03C) contained in one package facilitating high-density mounting.
- [MOSFET]
 - Low ON-resistance.
 - Ultrahigh-speed switching.
 - 1.8V drive.
- [SBD]
 - Short reverse recovery time.
 - Low forward voltage.
 - Low reverse current.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[MOSFET]				
Drain-to-Source Voltage	V _{DSS}		20	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		3	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	12	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (600mm ² ×0.8mm) 1unit	0.9	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V _{RRM}		30	V
Nonrepetitive Peak Reverse Surge Voltage	V _{RSM}		35	V
Average Output Current	I _O		700	mA
Surge Forward Current	I _{FSM}	50Hz sine wave, 1 cycle	5	A
Junction Temperature	T _J		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

Marking : XC

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SANYO Electric Co.,Ltd. Semiconductor Company

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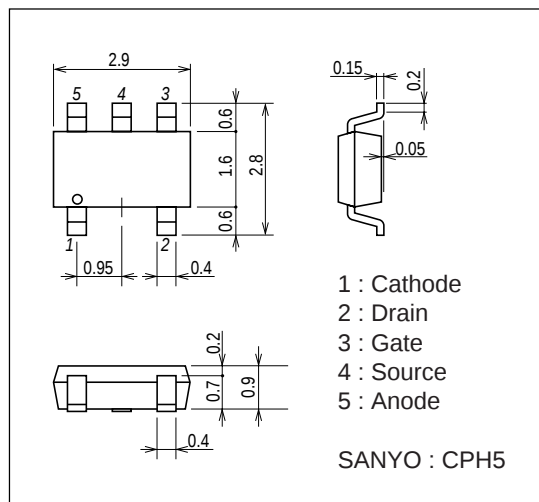
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0	20			V
Zero-Gate Voltage Drain Current	IDSS	VDS=20V, VGS=0			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±8V, VDS=0			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	0.4		1.3	V
Forward Transfer Admittance	yfs	VDS=10V, ID=1.5A	3.0	4.9		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=1.5A, VGS=4V		48	63	mΩ
	RDS(on)2	ID=1A, VGS=2.5V		58	82	mΩ
	RDS(on)3	ID=0.5A, VGS=1.8V		72	110	mΩ
Input Capacitance	Ciss	VDS=10V, f=1MHz		280		pF
Output Capacitance	Coss	VDS=10V, f=1MHz		60		pF
Reverse Transfer Capacitance	Crss	VDS=10V, f=1MHz		38		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit		13		ns
Rise Time	tr	See specified Test Circuit		35		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit		35		ns
Fall Time	tf	See specified Test Circuit		25		ns
Total Gate Charge	Qg	VDS=10V, VGS=4V, ID=3A		8.8		nC
Gate-to-Source Charge	Qgs	VDS=10V, VGS=4V, ID=3A		0.85		nC
Gate-to-Drain "Miller" Charge	Qgd	VDS=10V, VGS=4V, ID=3A		0.85		nC
Diode Forward Voltage	VSD	IS=3A, VGS=0		0.82	1.2	V
[SBD]						
Reverse Voltage	VR	IR=300μA	30			V
Forward Voltage	VF	IF=700mA			0.55	V
Reverse Current	IR	VR=15V			80	μA
Interterminal Capacitance	C	VR=10V, f=1MHz, 1 cycle		25		pF
Reverse Recovery Time	trr	IF=IR=100mA, See specified Test Circuit.			10	ns

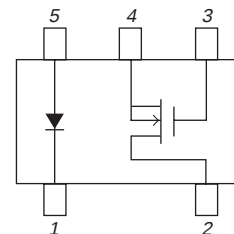
Package Dimensions

unit : mm

2171



Electrical Connection

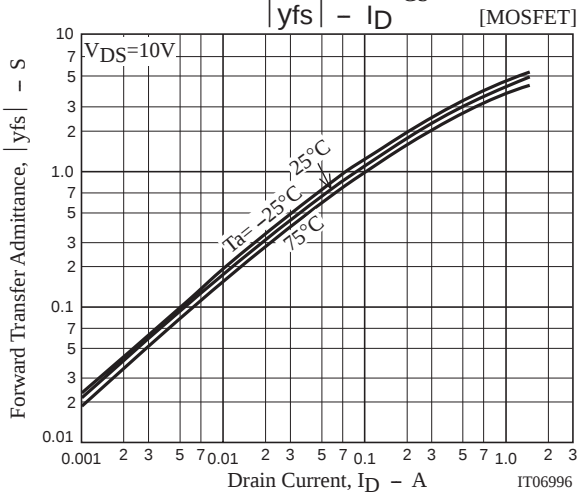
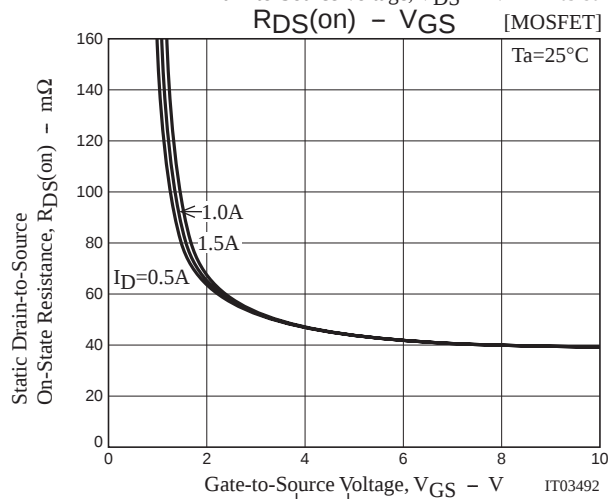
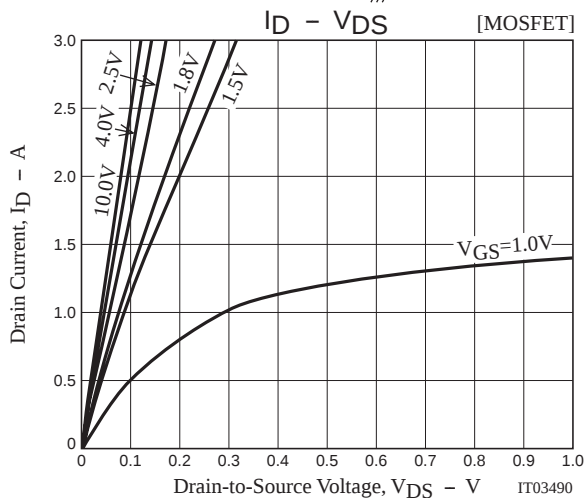
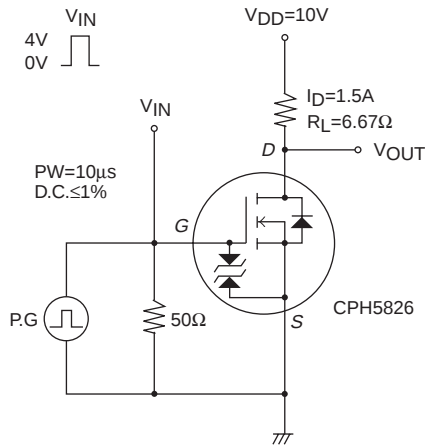


1 : Cathode
2 : Drain
3 : Gate
4 : Source
5 : Anode

Top view

Switching Time Test Circuit

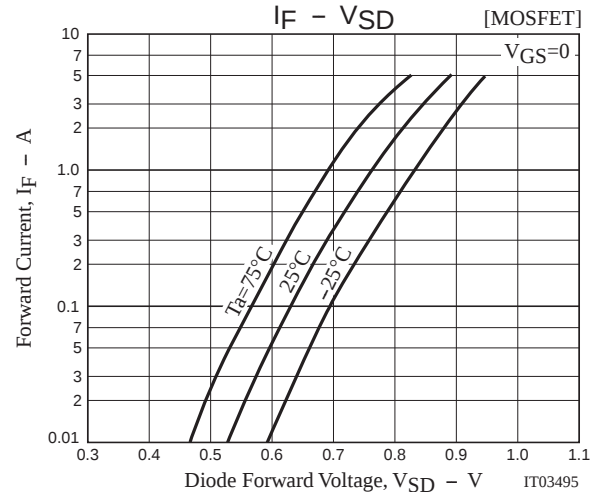
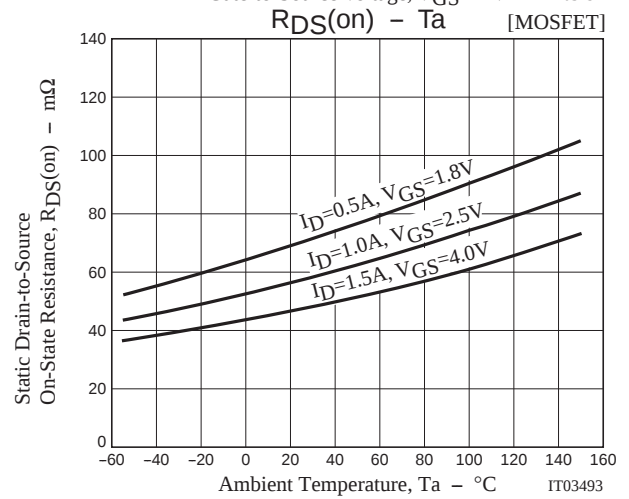
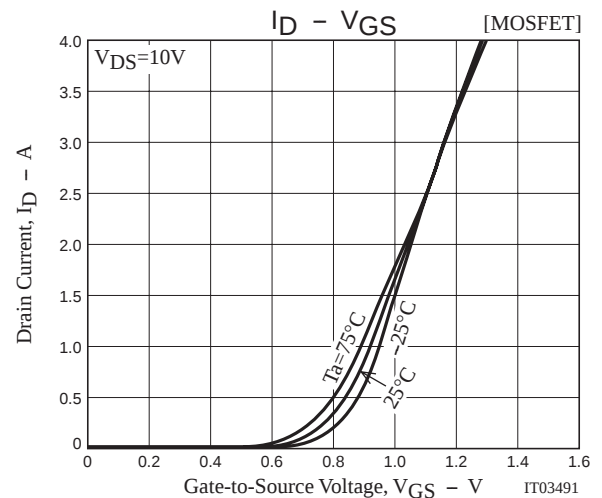
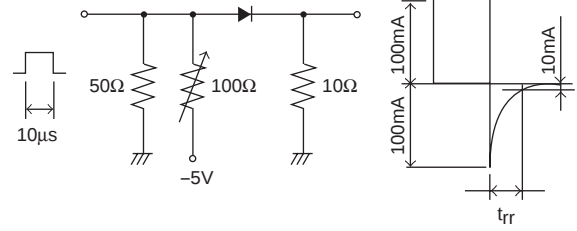
[MOSFET]

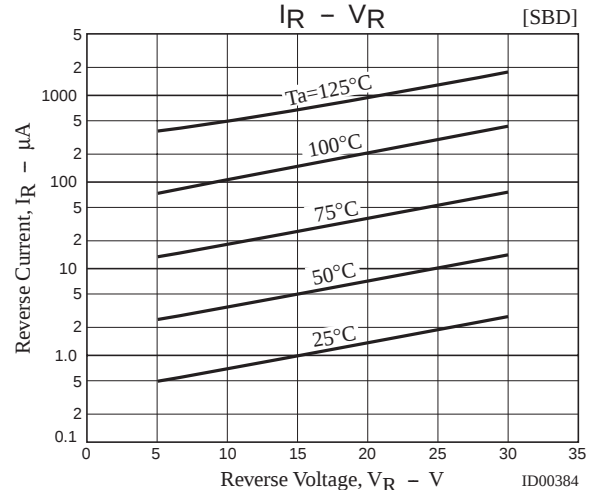
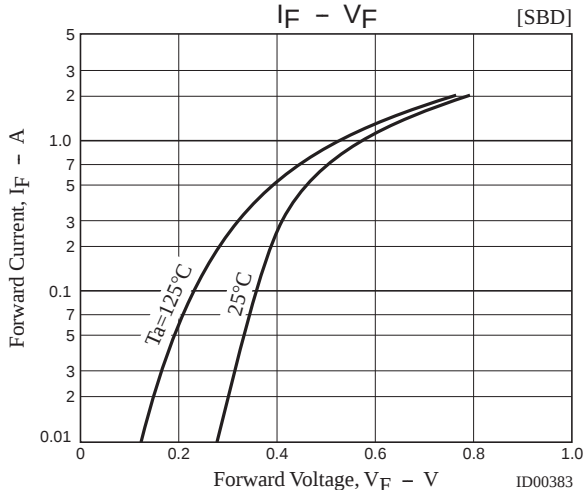
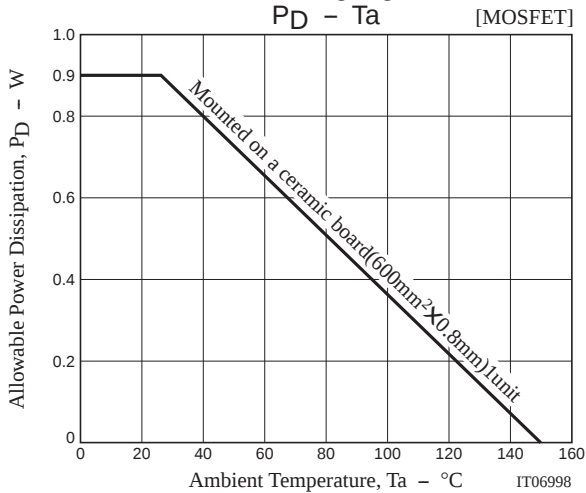
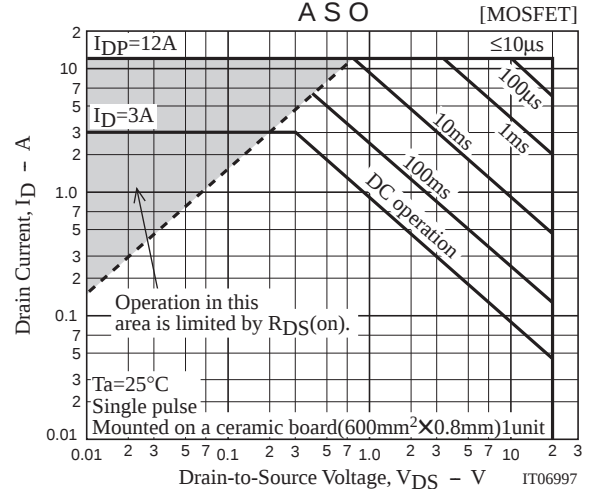
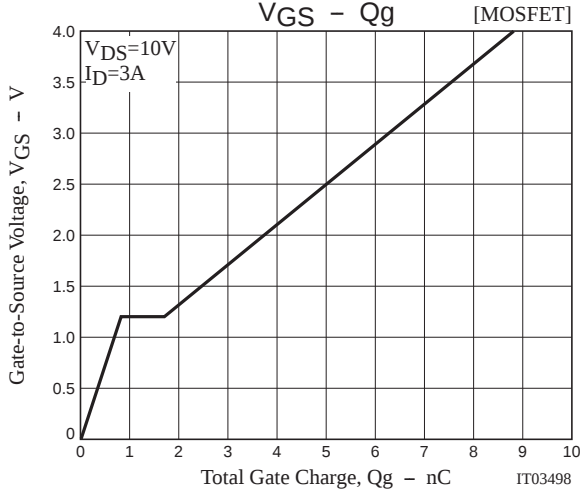
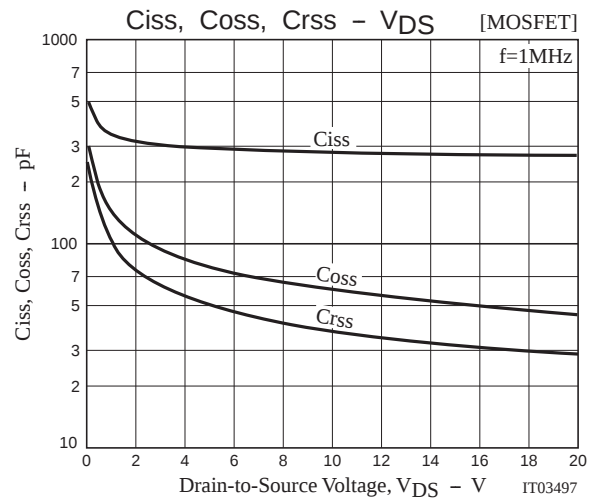
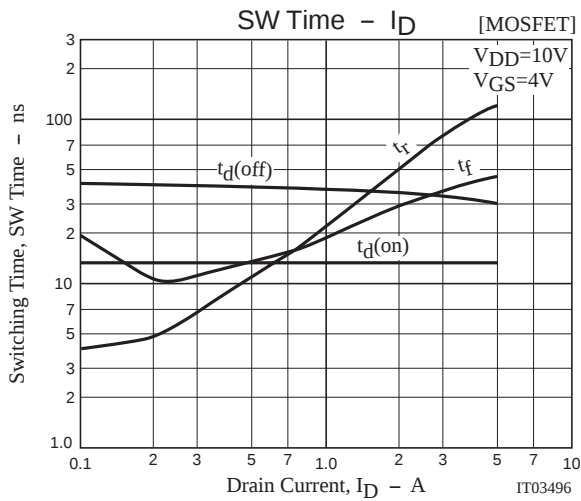


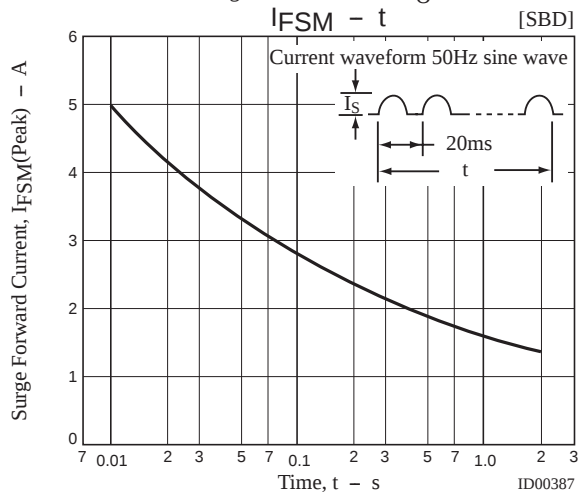
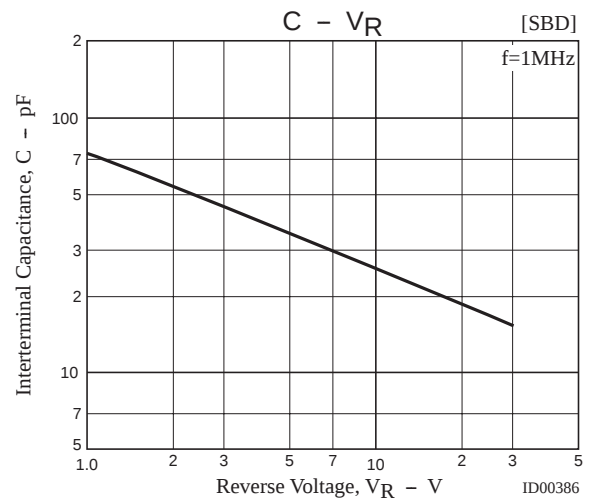
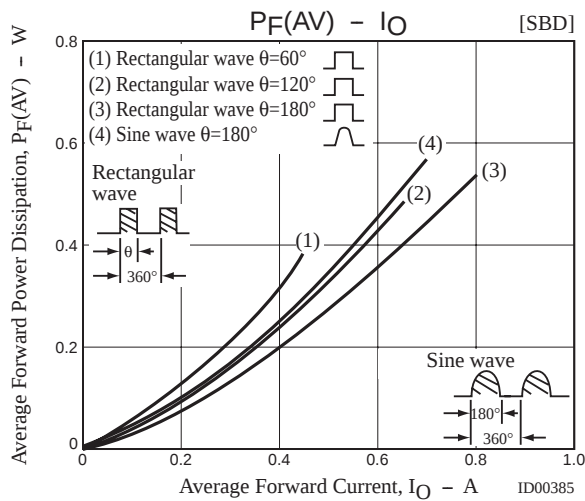
trr Test Circuit

[SBD]

Duty ≤ 10%







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