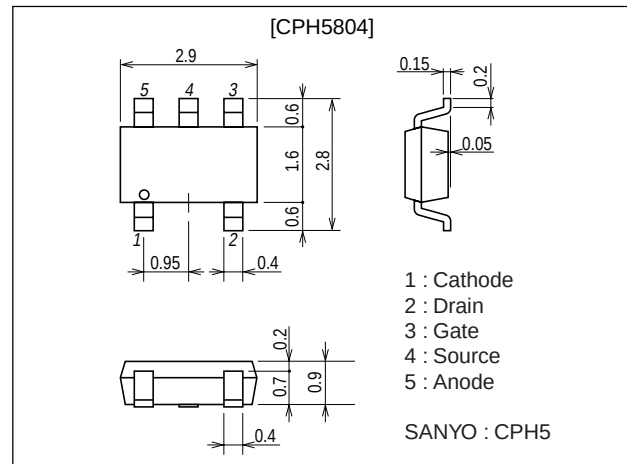


**CPH5804****DC / DC Converter Applications****Features**

- Composite type with a P-Channel Silicon MOSFET (MCH3312) and a Schottky Barrier Diode (SBS006M) contained in one package facilitating high-density mounting.
- [MOSFET]
- Low ON-resistance.
 - Ultrahigh-speed switching.
 - 4V drive.
- [SBD]
- Short reverse recovery time.
 - Low forward voltage.

Package Dimensions

unit : mm

**Specifications****Absolute Maximum Ratings** at Ta=25°C

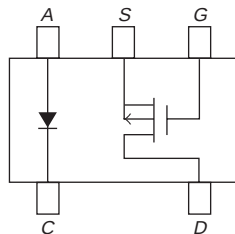
Parameter	Symbol	Conditions	Ratings	Unit
[MOSFET]				
Drain-to-Source Voltage	V _{DSS}		-30	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-2	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-8	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (600mm²×0.8mm) 1unit	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}		30	V
Average Output Current	I _O		0.5	A
Surge Forward Current	I _{FSM}	50Hz sine wave, 1 cycle	10	A
Junction Temperature	T _J		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

Marking : QE

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Electrical Characteristics at $T_a=25^{\circ}\text{C}$

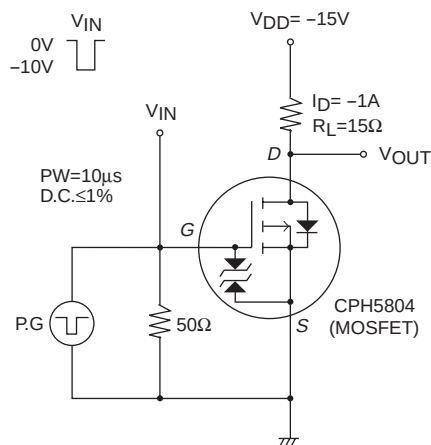
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0	-30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-30V, VGS=0			-1	μA
Gate-to-Source Leakage Current	IGSS	VGSS=±16V, VDS=0			±10	μA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-1.2		-2.6	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-1A	1.4	2.0		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-1A, VGS=-10V		110	145	mΩ
	RDS(on)2	ID=-500mA, VGS=-4V		205	290	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		200		pF
Output Capacitance	Coss	VDS=-10V, f=1MHz		47		pF
Reverse Transfer Capacitance	Crss	VDS=-10V, f=1MHz		32		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit		7.2		ns
Rise Time	tr	See specified Test Circuit		2.9		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit		21		ns
Fall Time	tf	See specified Test Circuit		8.7		ns
Total Gate Charge	Qg	VDS=-10V, VGS=-10V, ID=-2A		5.5		nC
Gate-to-Source Charge	Qgs	VDS=-10V, VGS=-10V, ID=-2A		0.98		nC
Gate-to-Drain "Miller" Charge	Qgd	VDS=-10V, VGS=-10V, ID=-2A		0.82		nC
Diode Forward Voltage	VSD	IS=-2A, VGS=0		-0.85	-1.5	V
[SBD]						
Reverse Voltage	VR	IR=0.5mA	30			V
Forward Voltage	VF1	IF=0.3A		0.35	0.4	V
	VF2	IF=0.5A		0.42	0.47	V
Reverse Current	IR	VR=10V			200	μA
Interterminal Capacitance	C	VR=10V, f=1MHz, 1 cycle		20		pF
Reverse Recovery Time	trr	IF=IR=100mA, See specified Test Circuit.			10	ns

Electrical Connection (Top view)

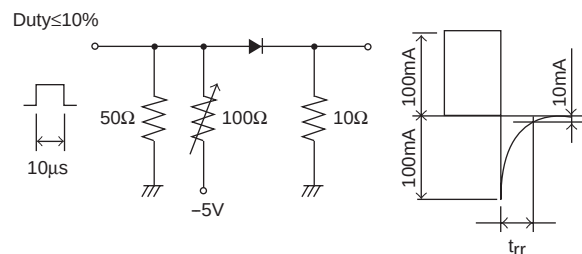
G : Gate
S : Source
A : Anode
C : Cathode
D : Drain

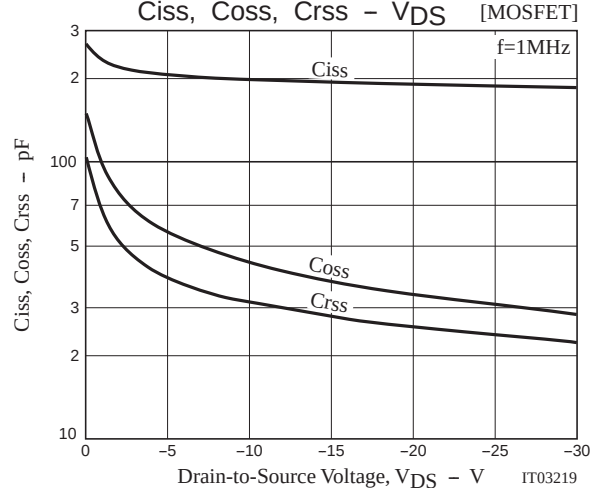
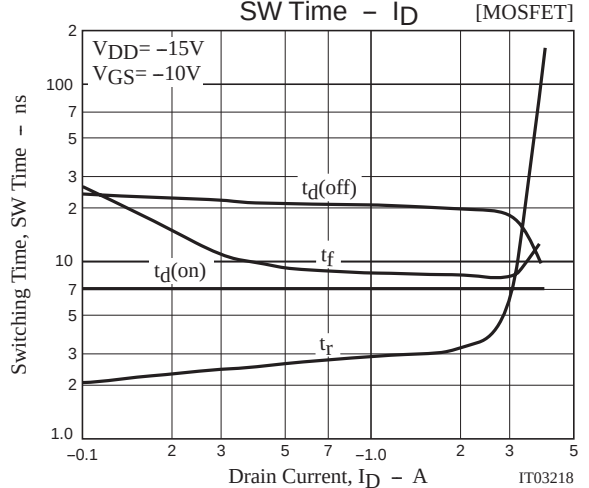
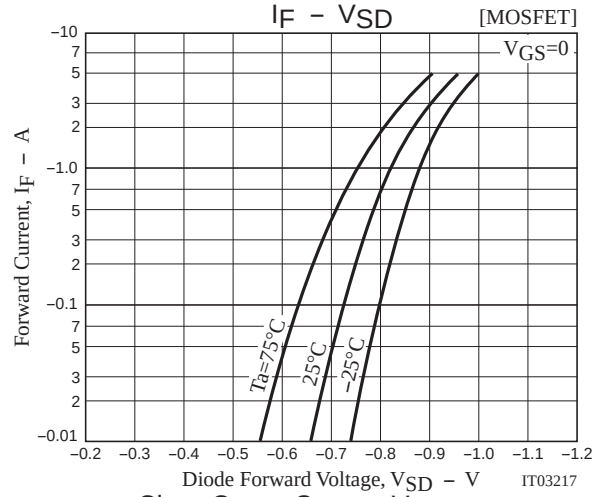
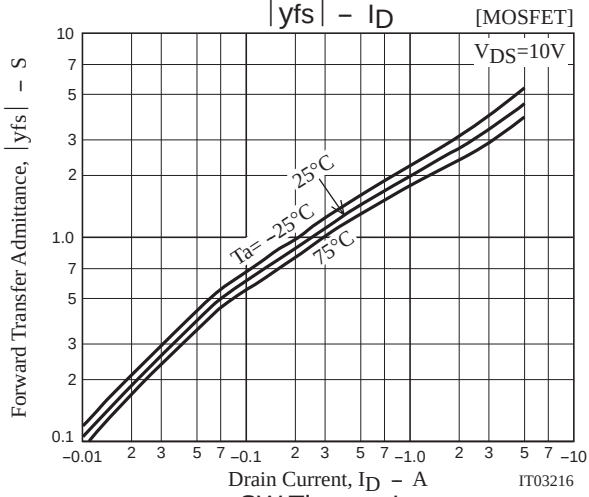
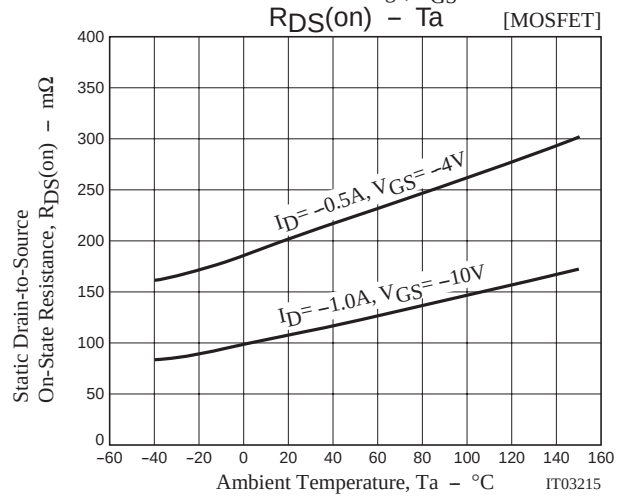
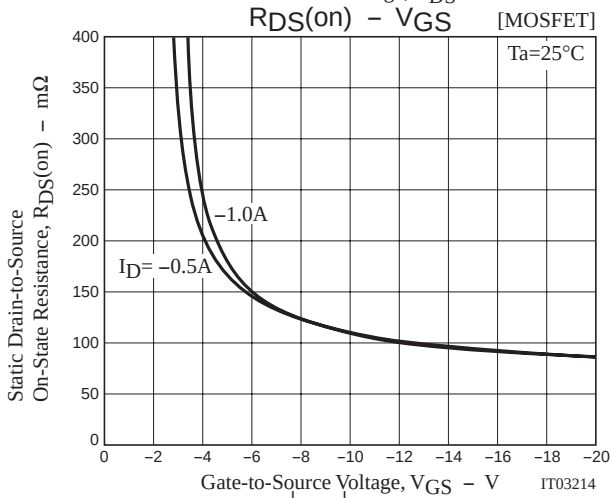
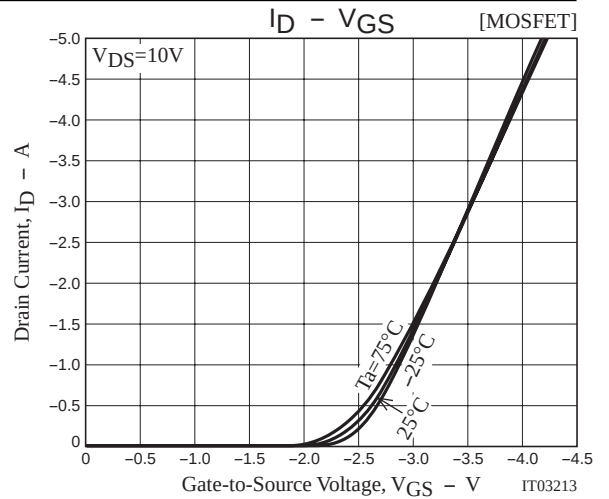
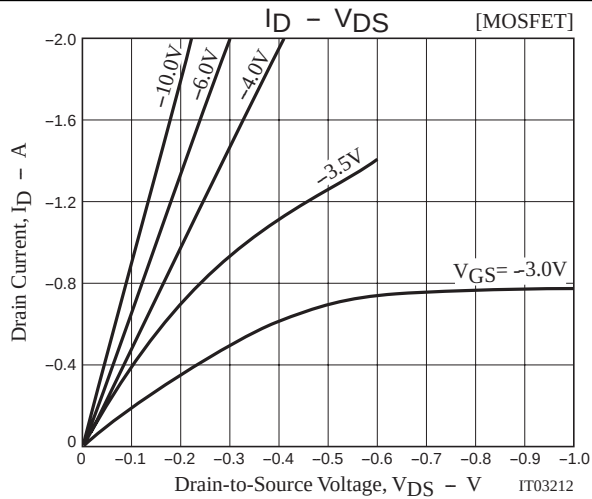
Switching Time Test Circuit

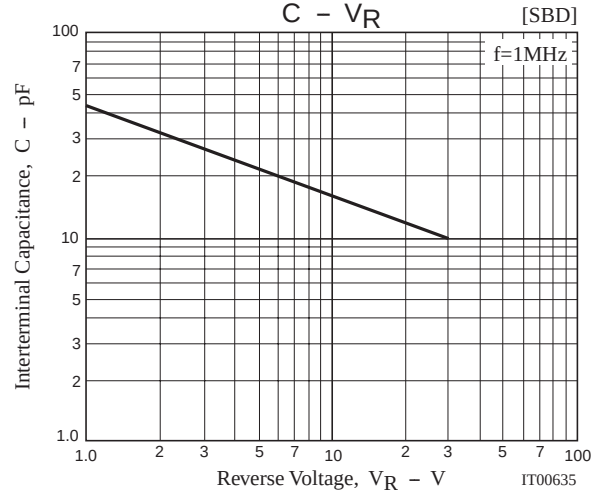
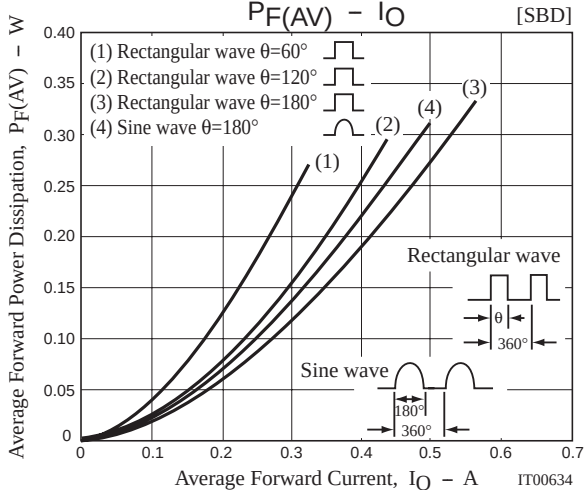
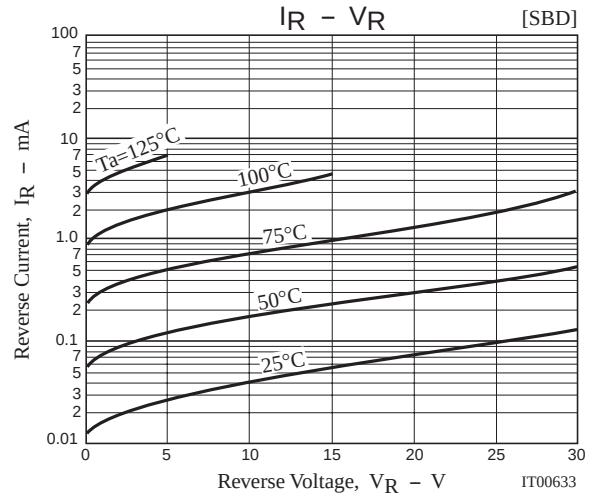
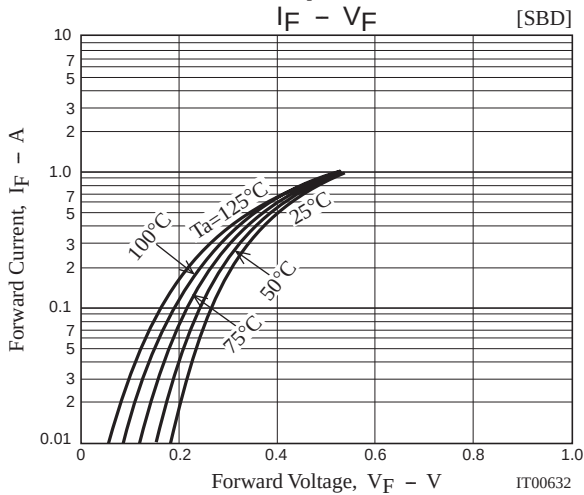
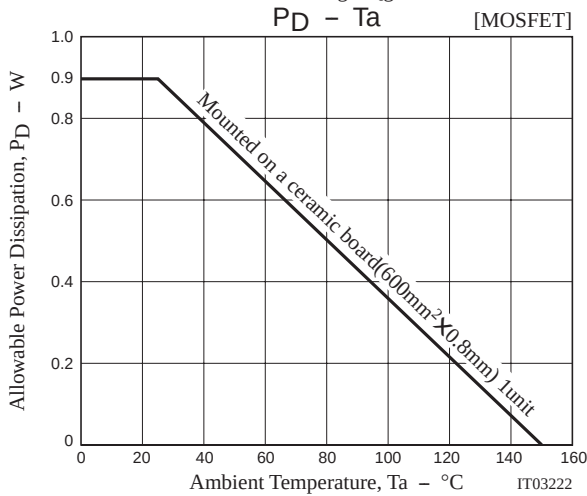
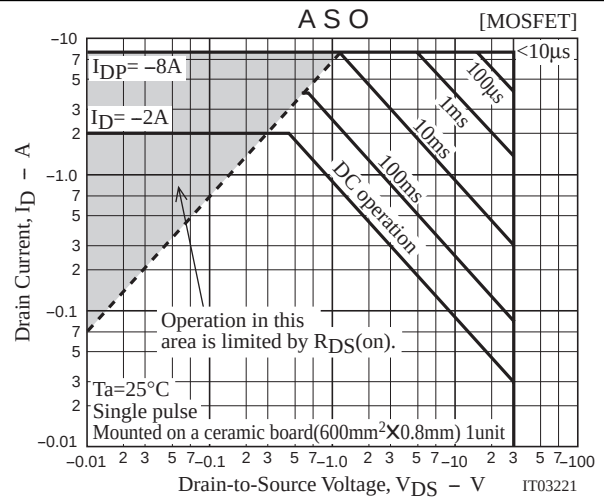
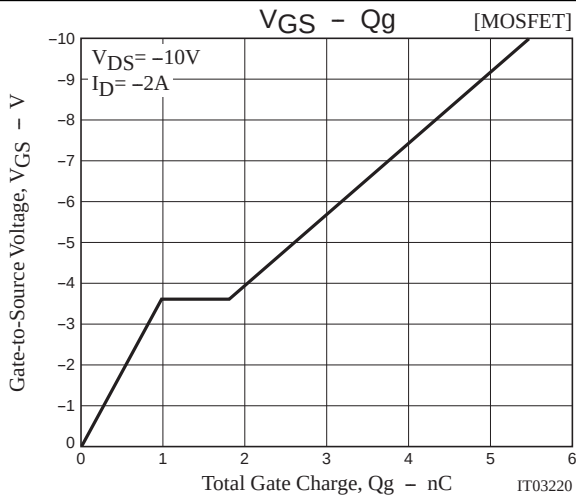
[MOSFET]

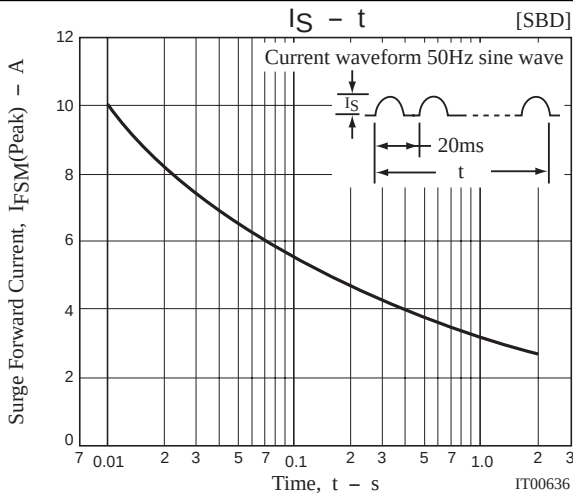
**trr Test Circuit**

[SBD]









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