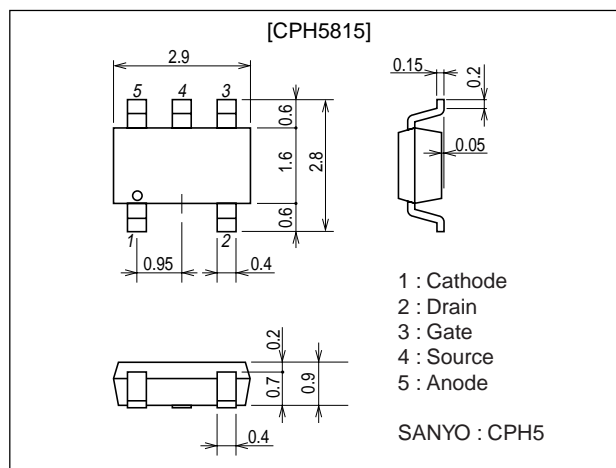


**CPH5815****DC / DC Converter Applications****Features**

- Composite type with a P-Channel Silicon MOSFET (MCH3317) and a Schottky Barrier Diode (SBS007M) contained in one package facilitating high-density mounting.
- [MOS]
 - 1) Low ON-resistance.
 - 2) Ultrahigh-speed switching.
 - 3) 1.8V drive.
- [SBD]
 - 1) Short reverse recovery time.
 - 2) Low forward voltage.

Package Dimensionsunit : mm
2171**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[MOSFET]				
Drain-to-Source Voltage	V _{DSS}		-12	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-1.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-6.0	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (600mm ² X0.8mm) 1unit	0.8	W
Channel Temperature	T _{ch}		-150	°C
Storage Temperature	T _{stg}		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V _{RSM}		15	V
Nonrepetitive Peak Reverse Surge Voltage	V _{RSM}		15	V
Average Output Current	I _O		0.5	A
Surge Forward Current	I _{FSM}	50Hz sine wave, 1 cycle	3	A
Junction Temperature	T _J		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

Marking : QR

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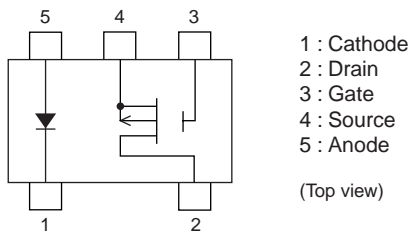
N2603 TS IM TA-3785 No.7381-1/5

CPH5815

Electrical Characteristics at Ta=25°C

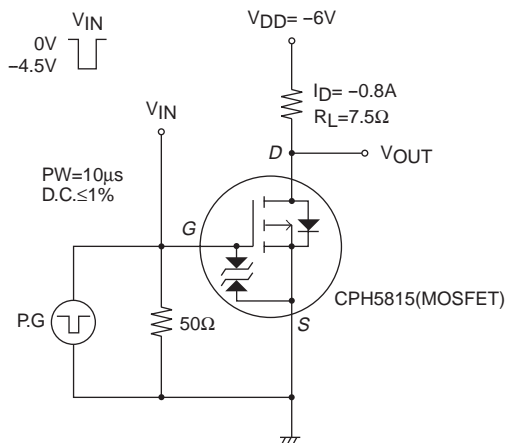
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12V, V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8.0V, V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -6V, I_D = -1mA$	-0.3		-1.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -6V, I_D = -0.8A$	1.3	1.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -0.8A, V_{GS} = -4.5V$		220	290	$m\Omega$
	$R_{DS(on)2}$	$I_D = -0.4A, V_{GS} = -2.5V$		320	450	$m\Omega$
	$R_{DS(on)3}$	$I_D = -0.1A, V_{GS} = -1.8V$		430	650	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS} = -6V, f = 1MHz$		160		pF
Output Capacitance	C_{oss}	$V_{DS} = -6V, f = 1MHz$		45		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -6V, f = 1MHz$		35		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		45		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		29		ns
Fall Time	t_f	See specified Test Circuit.		30		ns
Total Gate Charge	Q_g	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -1.5A$		2.6		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -1.5A$		0.25		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -1.5A$		0.65		nC
Diode Forward Voltage	V_{SD}	$I_S = -1.5A, V_{GS} = 0$		-0.92	-1.5	V
[SBD]						
Reverse Voltage	V_R	$I_R = 0.5mA$	15			V
Forward Voltage	V_{F1}	$I_F = 0.3A$		0.35	0.41	V
	V_{F2}	$I_F = 0.5A$		0.4	0.46	V
Reverse Current	I_R	$V_R = 6V$			200	μA
Interterminal Capacitance	C	$V_R = 10V, f = 1MHz$ cycle		20		pF
Reverse Recovery Time	t_{rr}	$I_F = I_R = 100mA$, see specified Test Circuit.			10	ns

Electrical Connection



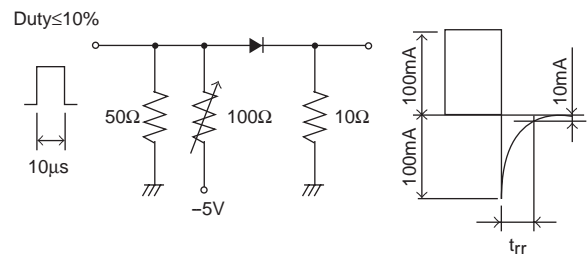
Switching Time Test Circuit

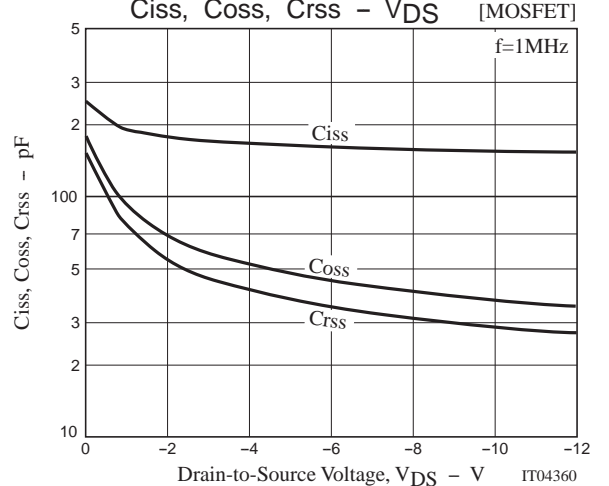
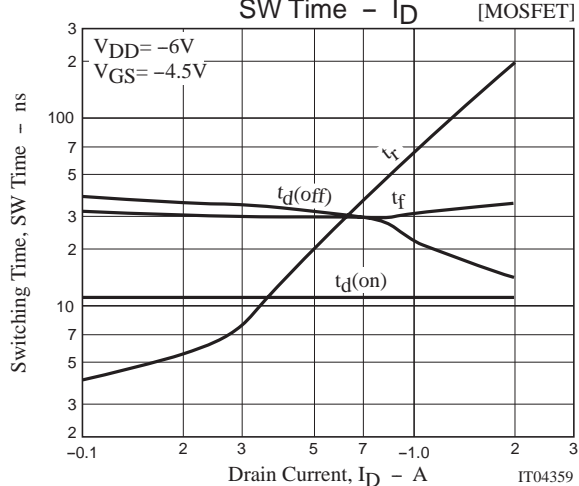
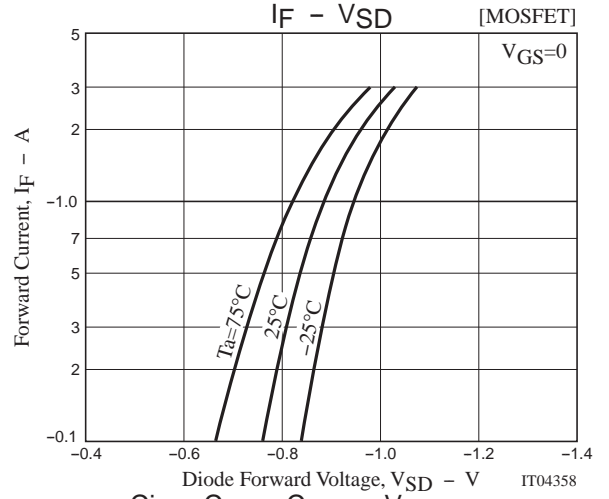
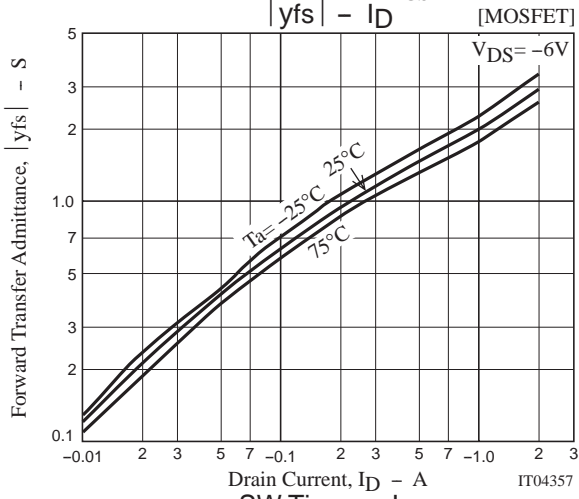
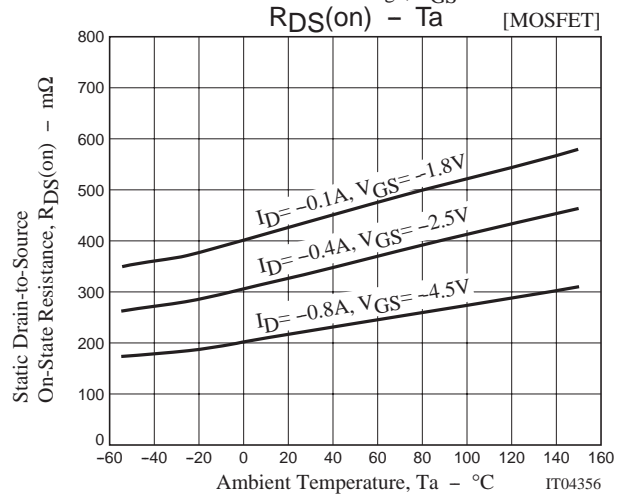
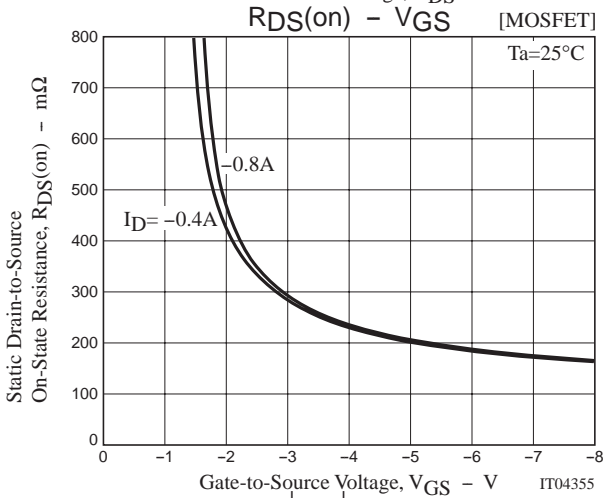
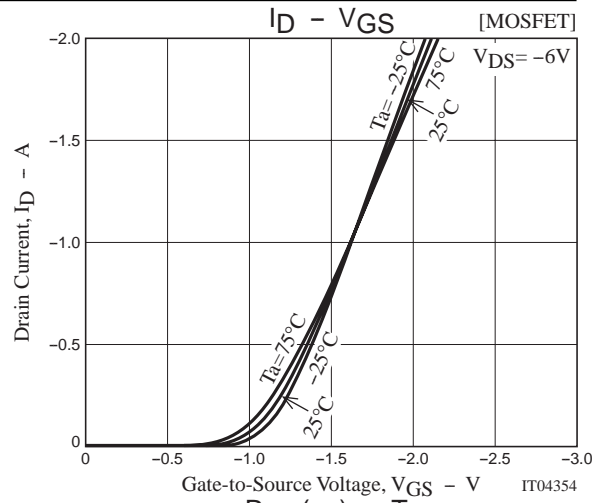
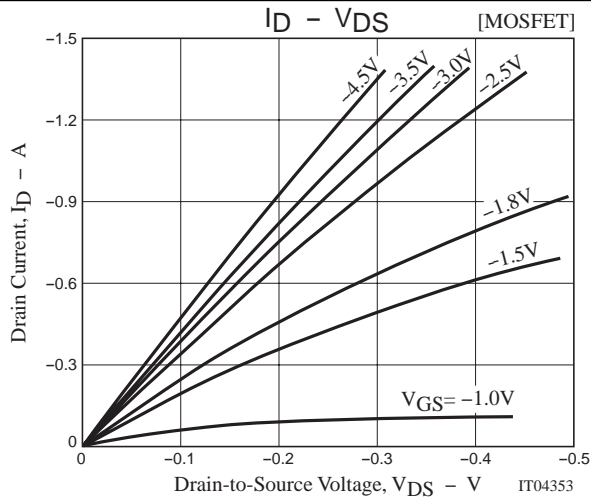
[MOSFET]

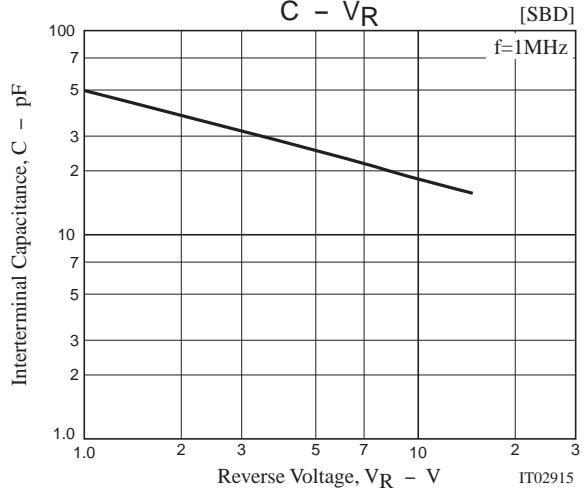
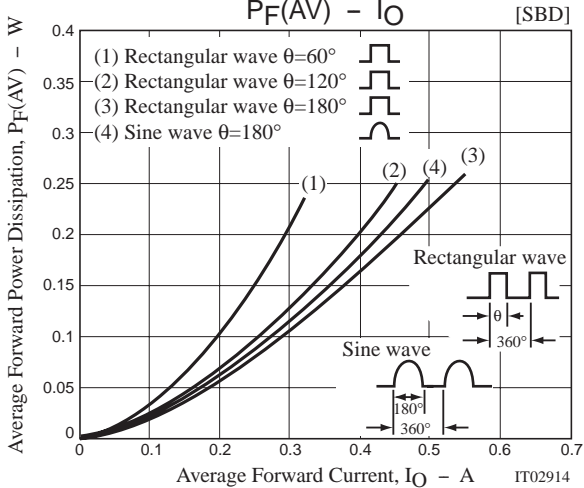
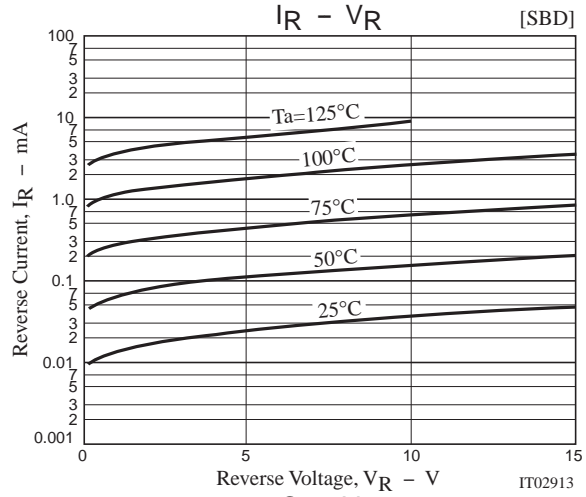
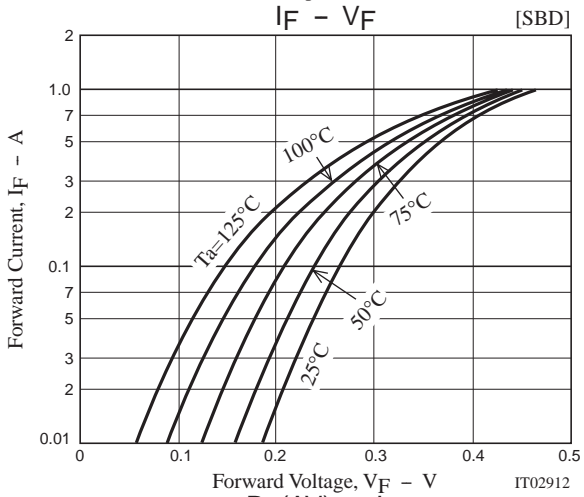
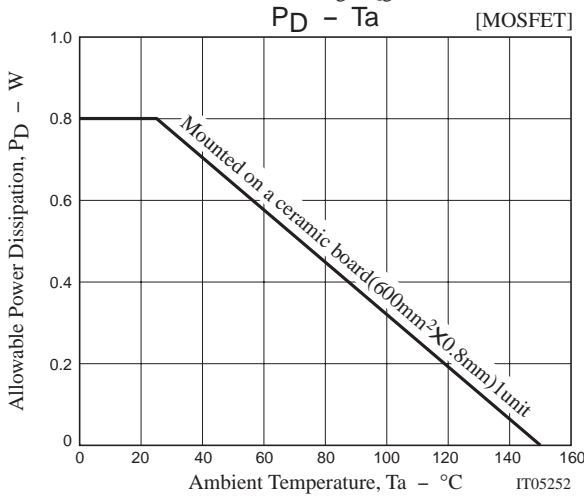
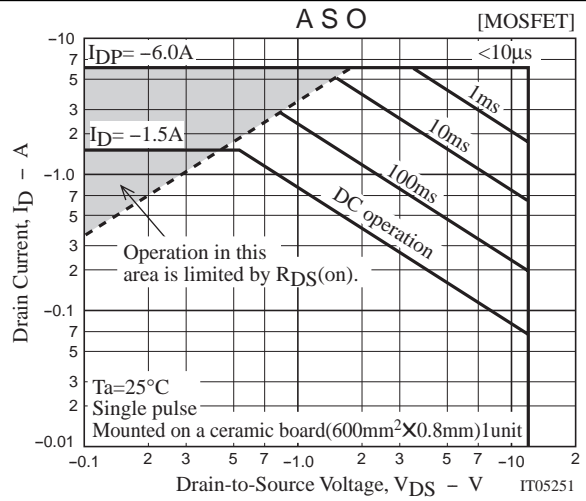
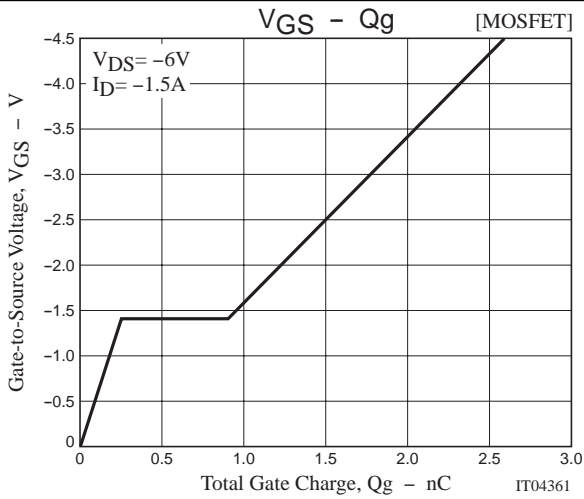


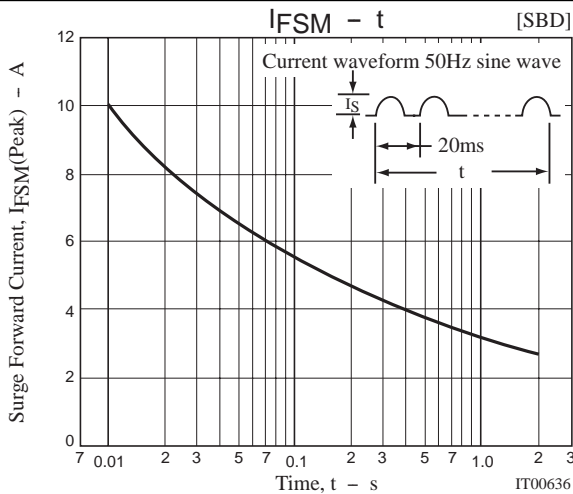
t_{rr} Test Circuit

[SBD]









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