



SANYO Semiconductors

DATA SHEET

CPH5835

MOSFET : P-Channel Silicon MOSFET

SBD : Schottky Barrier Diode

General-Purpose Switching Device Applications

Features

- Composite type with a P-Channel Silicon MOSFET (CPH3309) and a Schottky Barrier Diode (SBS010M) contained in one package facilitating high-density mounting.

[MOSFET]

- Low ON-resistance.
- Ultrahigh-speed switching.
- Low voltage drive.

[SBD]

- Short reverse recovery time.
- Low forward voltage.

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		-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 ×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 _R RM		15	V
Nonrepetitive Peak Reverse Surge Voltage	V _R SM		15	V
Average Output Current	I _O		2	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 : XM

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SANYO Electric Co., Ltd. Semiconductor Company

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CPH5835

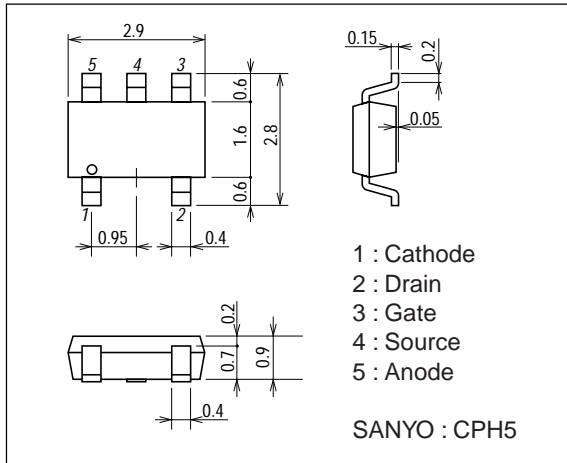
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0$	-20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V, I_D = -1mA$	-0.4		-1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = -800mA$	1.3	2.3		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -800mA, V_{GS} = -4V$		180	235	$m\Omega$
	$R_{DS(on)2}$	$I_D = -400mA, V_{GS} = -2.5V$		240	340	$m\Omega$
	$R_{DS(on)3}$	$I_D = -70mA, V_{GS} = -1.8V$		350	600	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS} = -10V, f = 1MHz$		290		pF
Output Capacitance	C_{oss}	$V_{DS} = -10V, f = 1MHz$		40		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -10V, f = 1MHz$		25		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		35		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		32		ns
Fall Time	t_f	See specified Test Circuit		27		ns
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{GS} = -4V, I_D = -1.5A$		3.2		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -10V, V_{GS} = -4V, I_D = -1.5A$		0.8		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS} = -10V, V_{GS} = -4V, I_D = -1.5A$		0.6		nC
Diode Forward Voltage	V_{SD}	$I_S = -1.5A, V_{GS} = 0$		-0.87	-1.5	V
[SBD]						
Reverse Voltage	V_R	$I_R = 1.5mA$	15			V
Forward Voltage	V_{F1}	$I_F = 0.5A$		0.27	0.32	V
	V_{F2}	$I_F = 1A$		0.30	0.35	V
Reverse Current	I_R	$V_R = 6V$			600	μA
Interterminal Capacitance	C	$V_R = 10V, f = 1MHz, 1 \text{ cycle}$		65		pF
Reverse Recovery Time	t_{rr}	$I_F = I_R = 100mA$, See specified Test Circuit.			15	ns
Thermal Resistance	$R_{th(j-a)}$	Mounted on a ceramic board (600mm ² X0.8mm)		138		$^{\circ}C / W$

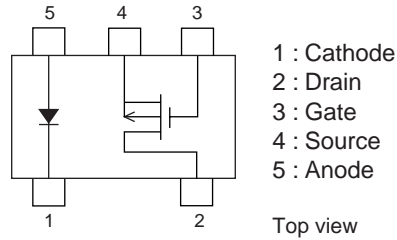
Package Dimensions

unit : mm

2171

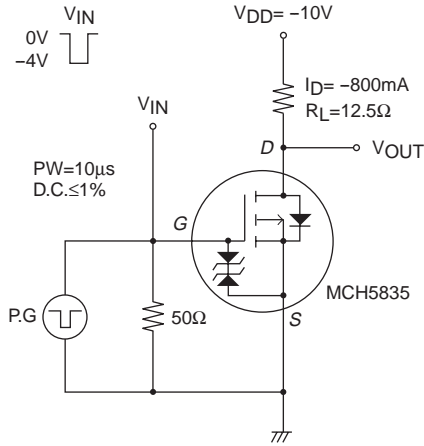


Electrical Connection



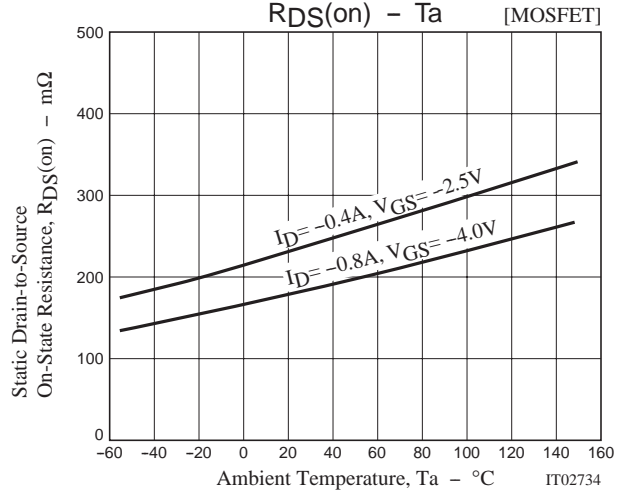
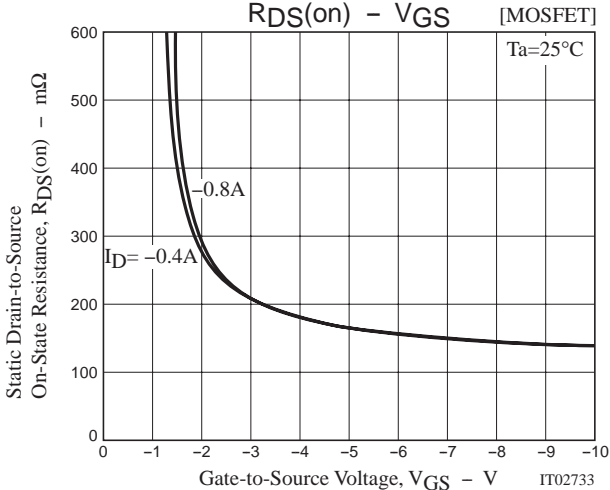
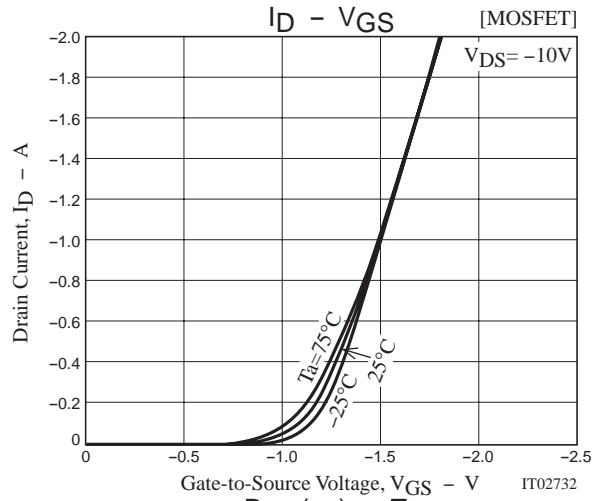
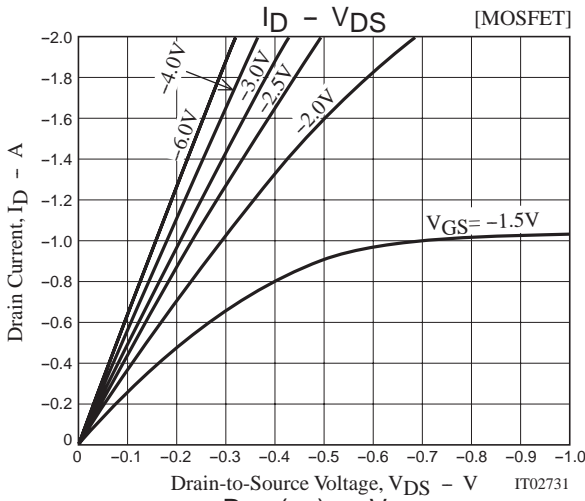
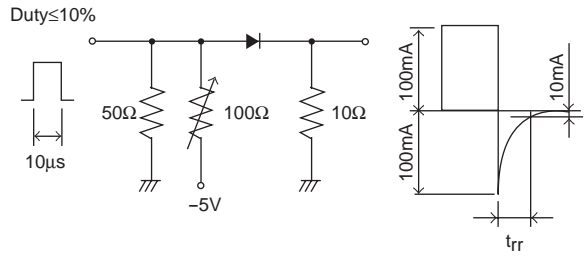
Switching Time Test Circuit

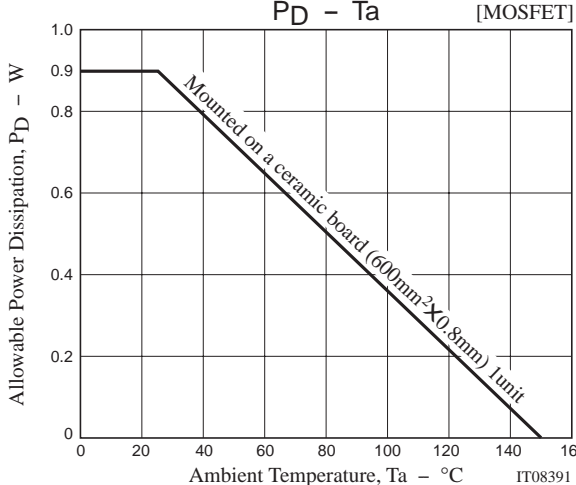
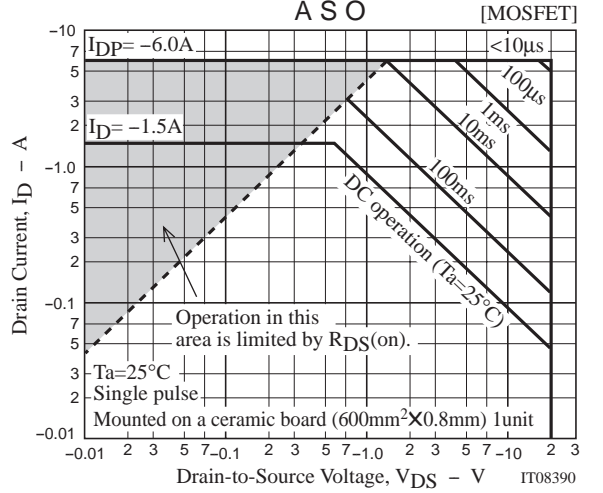
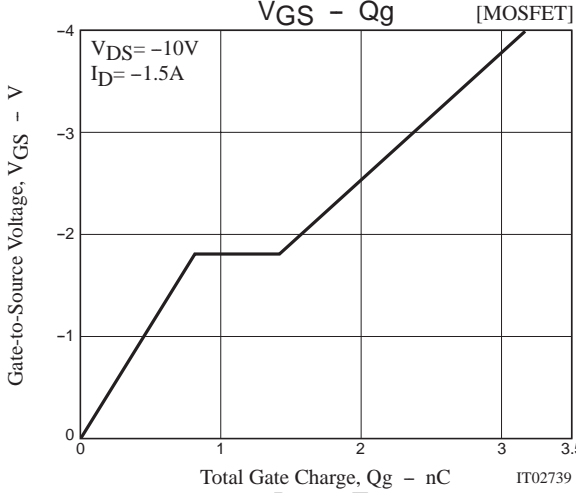
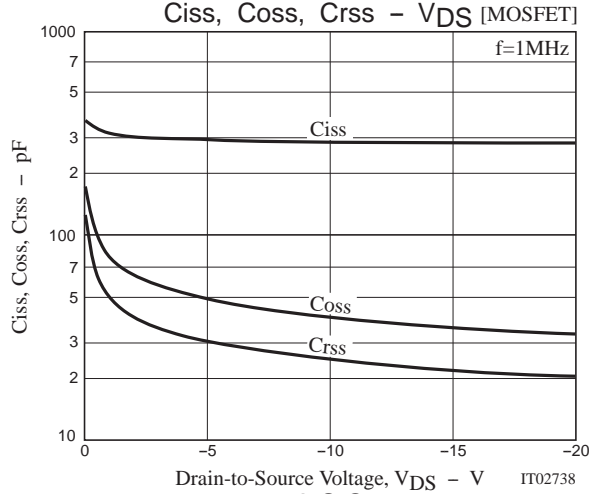
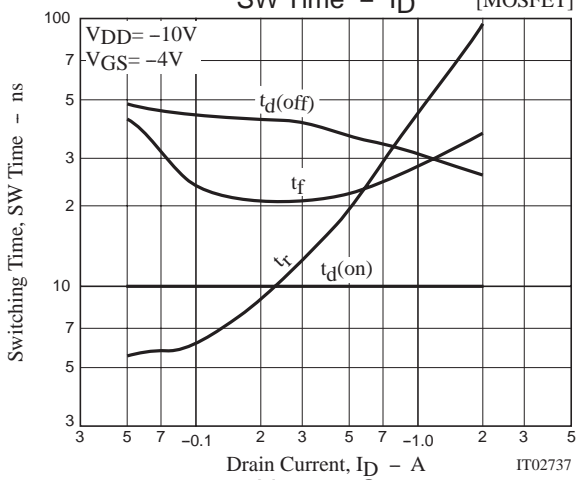
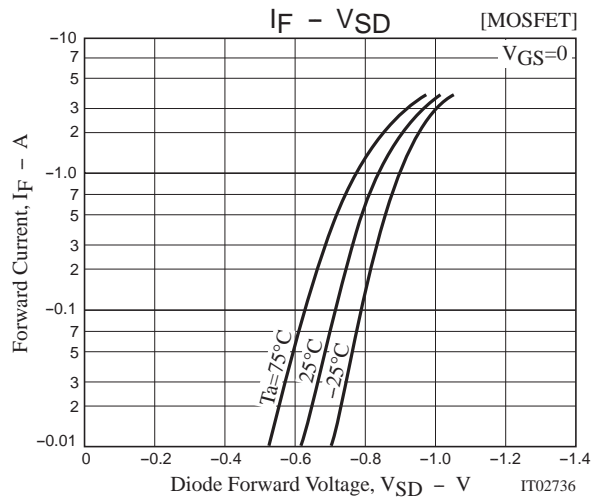
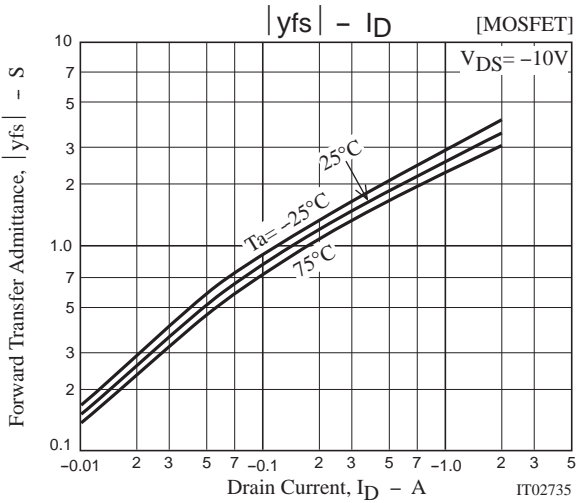
[MOSFET]



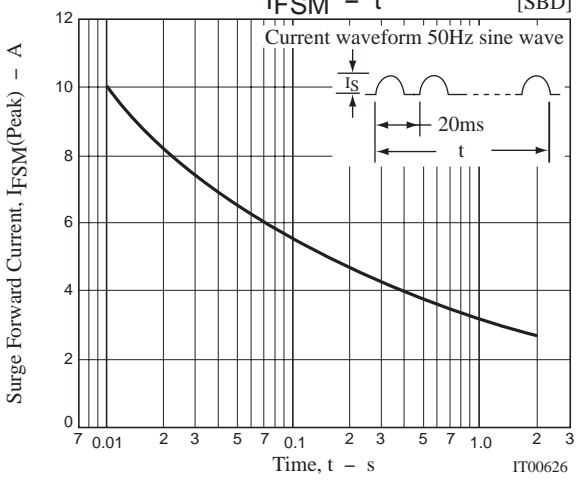
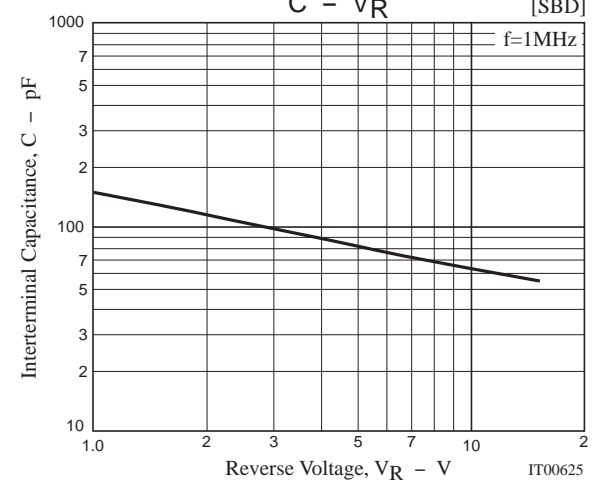
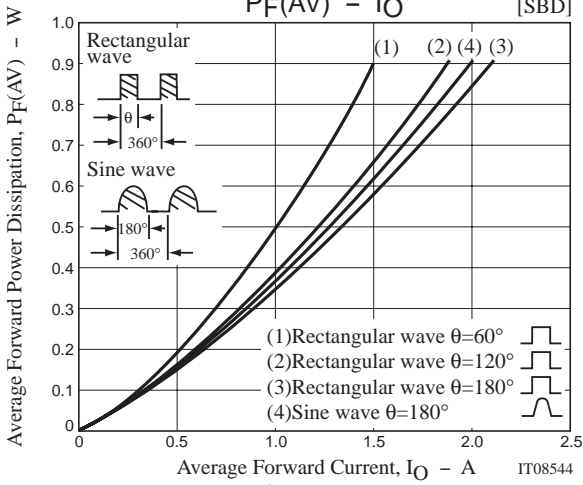
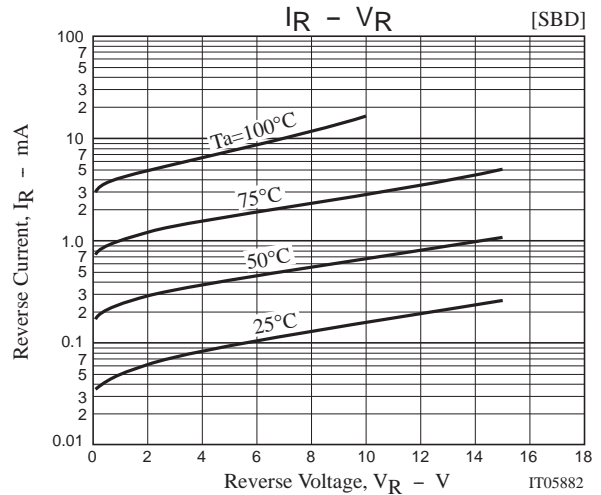
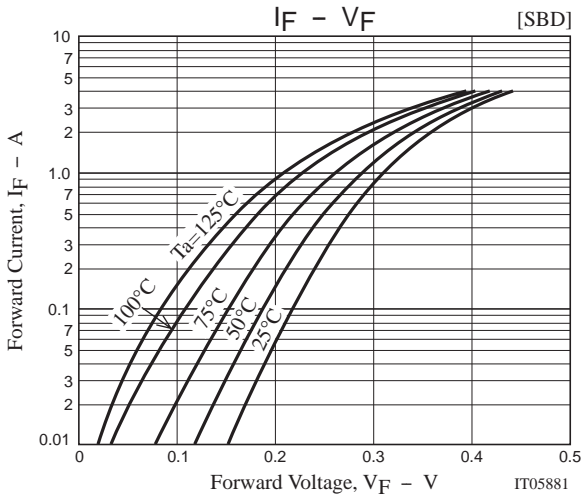
t_{rr} Test Circuit

[SBD]





CPH5835



Note on usage : Since the CPH5835 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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