



SANYO Semiconductors

DATA SHEET

VEC2803

MOSFET : P-Channel Silicon MOSFET

SBD : Schottky Barrier Diode

General-Purpose Switching Device Applications

Features

- DC/DC converter.
- Composite type with a P-Channel Silicon MOSFET and a Schottky Barrier Diode contained in one package facilitating high-density mounting.

[MOSFET]

- Low ON-resistance.
- 4V 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}		-30	V
Gate-to-Source Voltage	V _{GSS}		±20	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 (900mm 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		1	A
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 : BN

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SANYO Electric Co., Ltd. Semiconductor Company

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

VEC2803

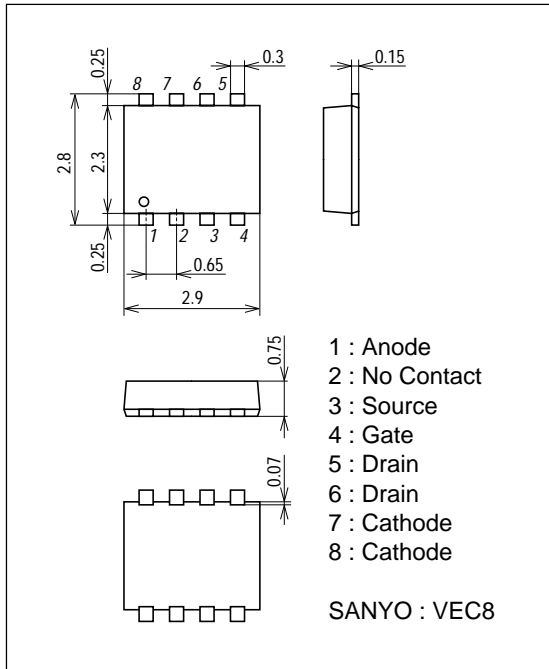
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1mA, V_{GS}=0$	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10V, I_D=-1mA$	-1.0		-2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10V, I_D=-1.5A$	2.0	3.4		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-1.5A, V_{GS}=-10V$		65	86	$m\Omega$
	$R_{DS(on)2}$	$I_D=-0.7A, V_{GS}=-4V$		117	168	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		510		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		115		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		78		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		17		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		53		ns
Fall Time	t_f	See specified Test Circuit.		35		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3A$		11		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3A$		2.4		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3A$		1.7		nC
Diode Forward Voltage	V_{SD}	$I_S=-3A, V_{GS}=0$		-0.87	-1.2	V
[SBD]						
Reverse Voltage	V_R	$I_R=0.5mA$	30			V
Forward Voltage	V_{F1}	$I_F=0.5A$		0.35	0.39	V
	V_{F2}	$I_F=1A$		0.4	0.45	V
Reverse Current	I_R	$V_R=15V$			360	μA
Interterminal Capacitance	C	$V_R=10V, f=1MHz$		27		pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=100mA$, See specified Test Circuit.			10	ns

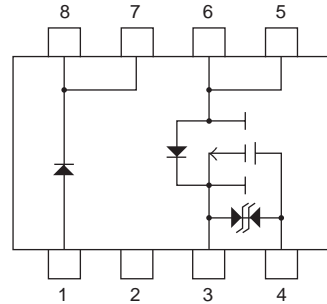
Package Dimensions

unit : mm

2241



Electrical Connection



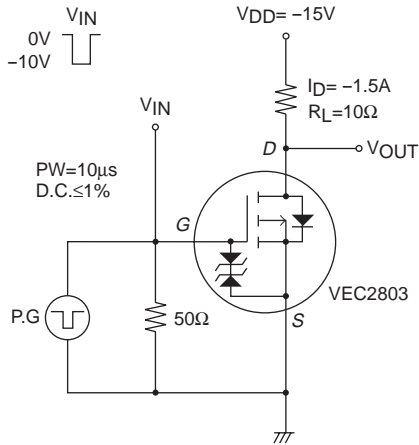
- 1 : Anode
- 2 : No Contact
- 3 : Source
- 4 : Gate
- 5 : Drain
- 6 : Drain
- 7 : Cathode
- 8 : Cathode

Top view

VEC2803

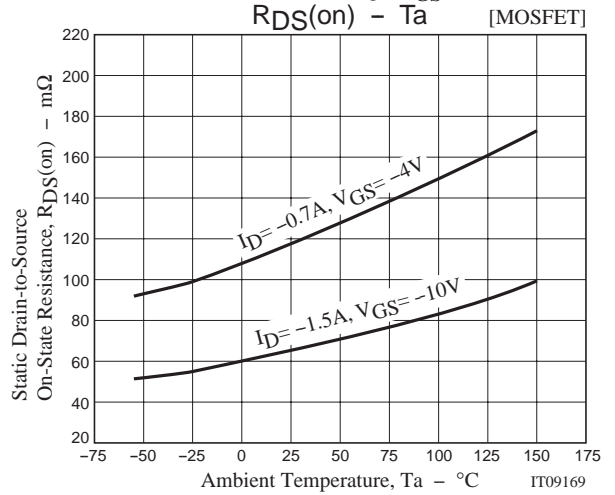
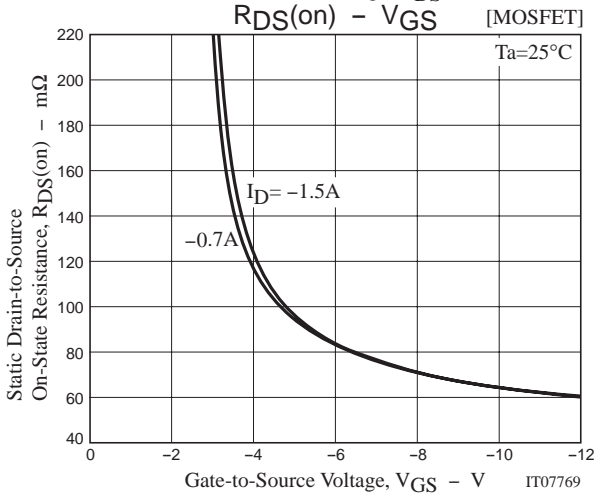
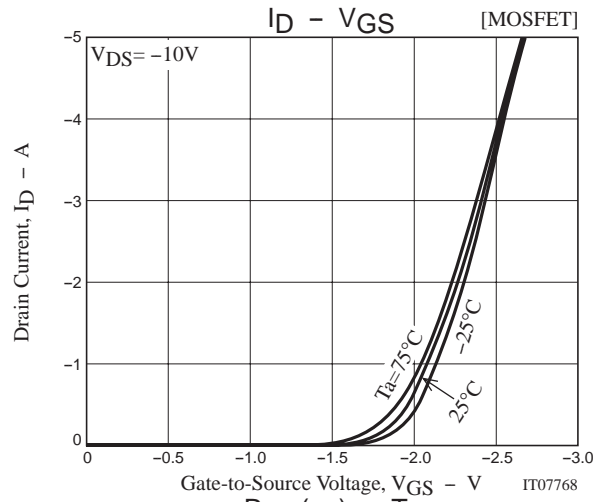
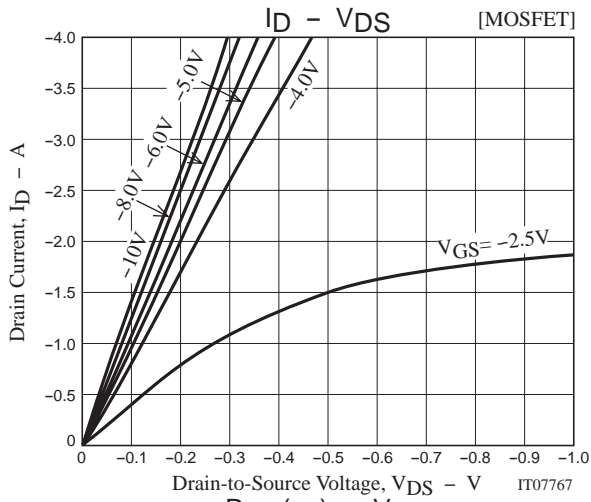
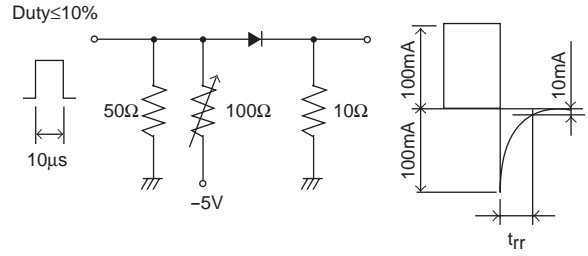
Switching Time Test Circuit

[MOSFET]

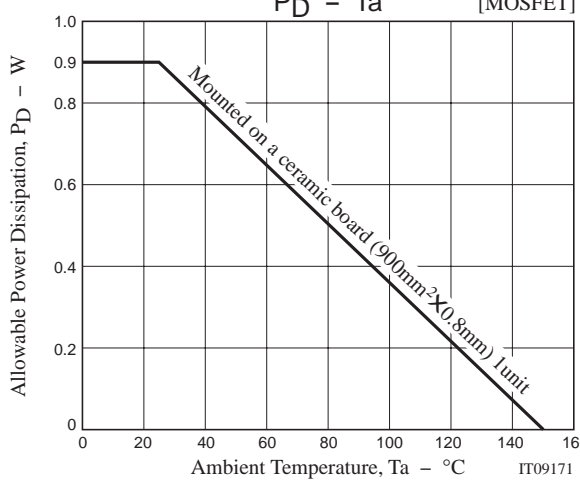
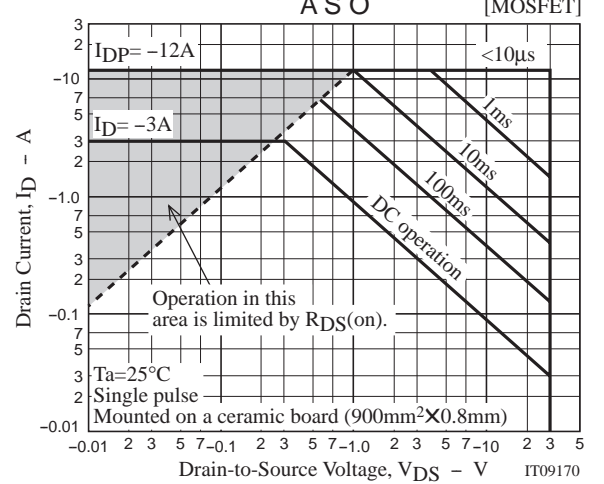
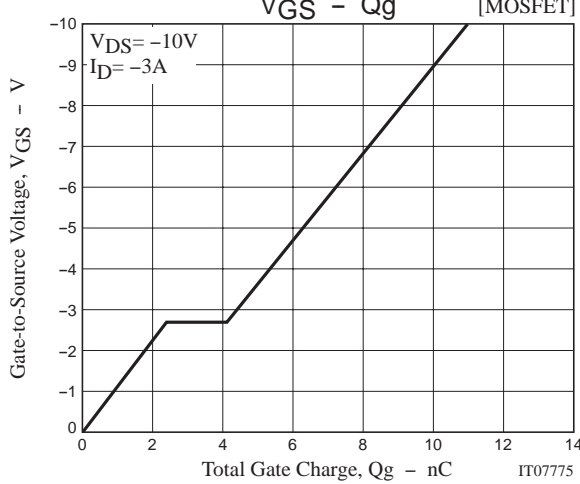
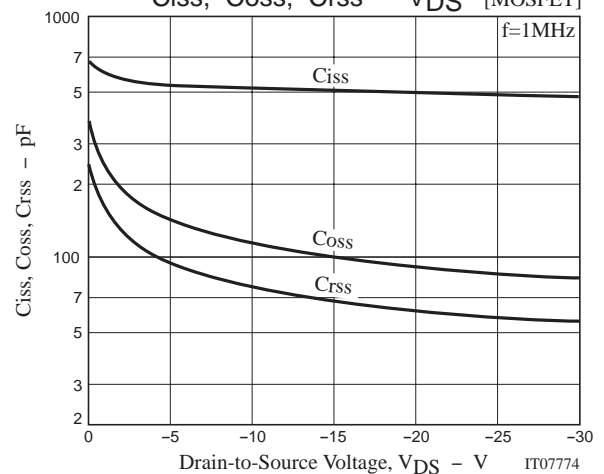
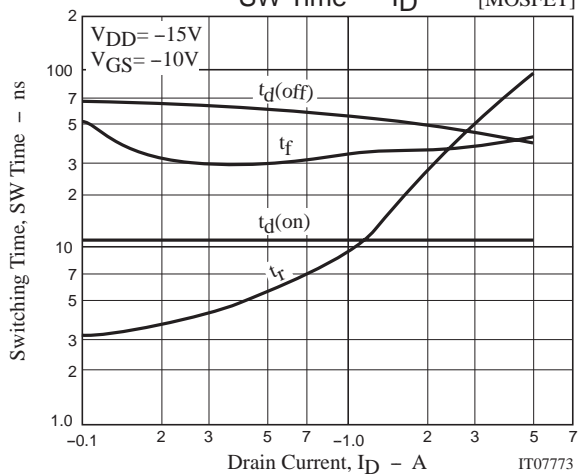
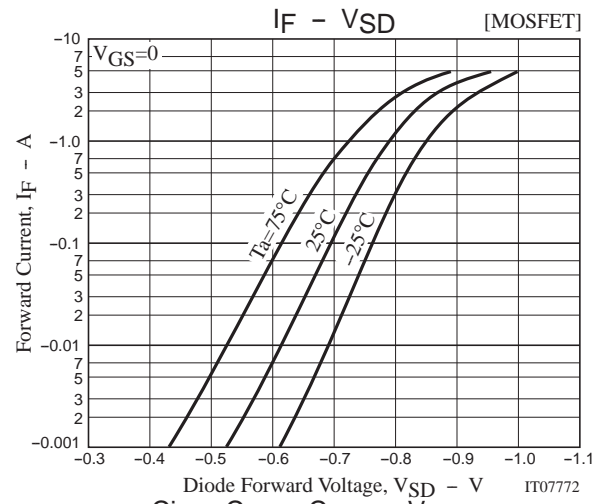
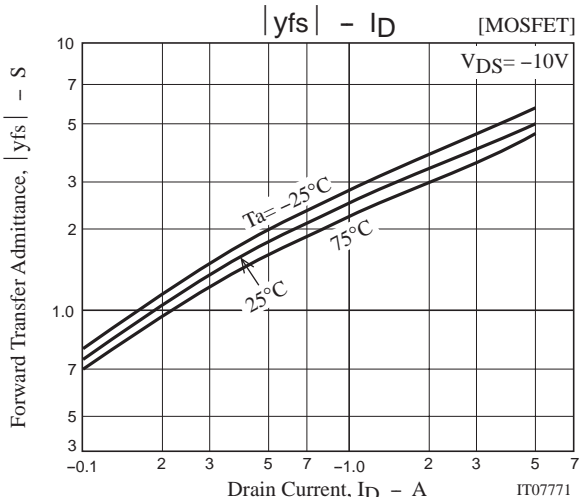


t_{rr} Test Circuit

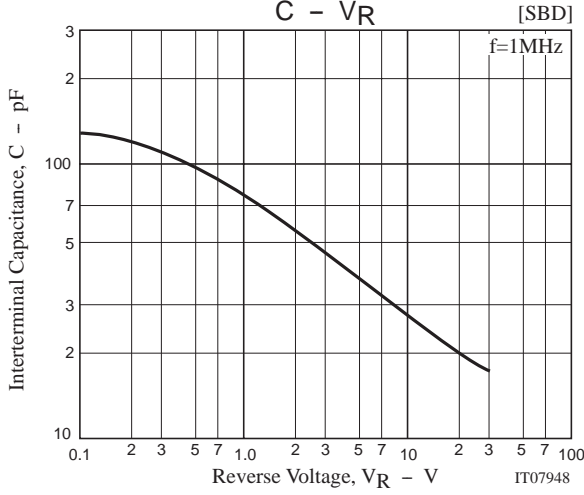
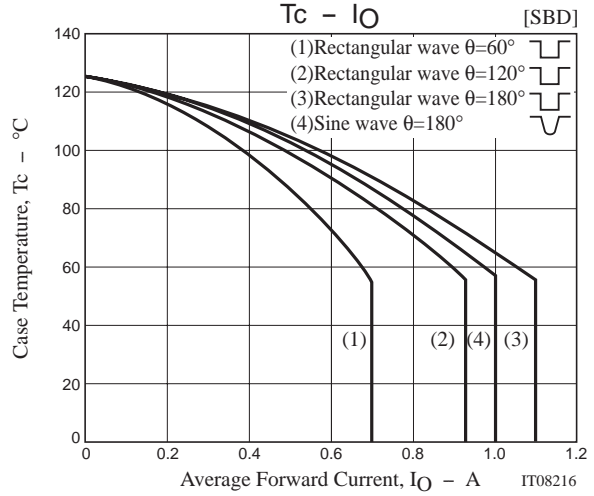
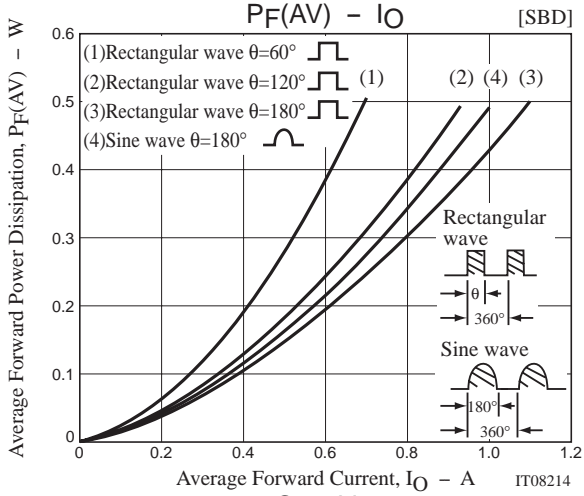
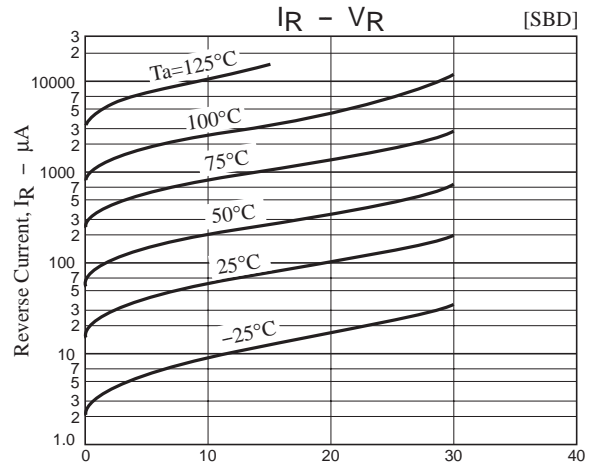
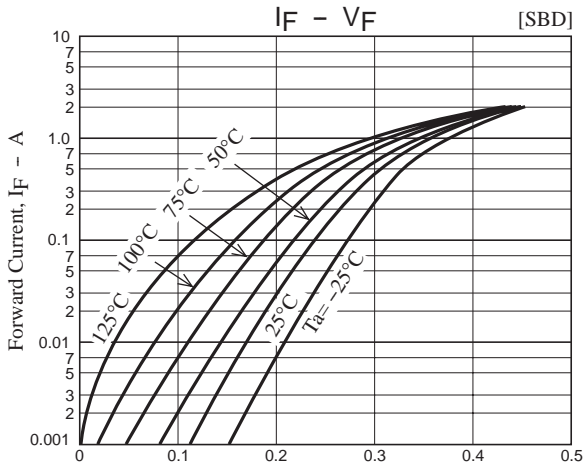
[SBD]



VEC2803



VEC2803



Note on usage : Since the VEC2803 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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