


SANYO Semiconductors

DATA SHEET

VEC2815

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}		30	V
Average Output Current	I _O		3	A
Surge Forward Current	I _{FSM}	50Hz sine wave, 1 cycle	20	A
Junction Temperature	T _j		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

Marking : CL

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VEC2815

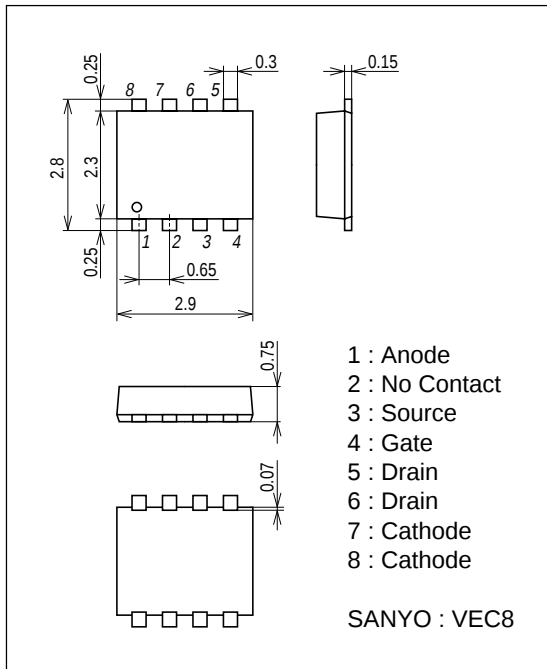
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0V	-30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-30V, VGS=0V			-1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-1.0		-2.4	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-1.5A	2.0	3.4		S
Static Drain-to-Source On-State Resistance	RDs(on)1	ID=-1.5A, VGS=-10V		65	86	mΩ
	RDs(on)2	ID=-0.7A, VGS=-4V		117	168	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		510		pF
Output Capacitance	Coss	VDS=-10V, f=1MHz		115		pF
Reverse Transfer Capacitance	Crss	VDS=-10V, f=1MHz		78		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		11		ns
Rise Time	tr	See specified Test Circuit.		17		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit.		53		ns
Fall Time	tf	See specified Test Circuit.		35		ns
Total Gate Charge	Qg	VDS=-10V, VGS=-10V, ID=-3A		11		nC
Gate-to-Source Charge	Qgs	VDS=-10V, VGS=-10V, ID=-3A		2.4		nC
Gate-to-Drain "Miller" Charge	Qgd	VDS=-10V, VGS=-10V, ID=-3A		1.7		nC
Diode Forward Voltage	VSD	IS=-3A, VGS=0V		-0.87	-1.2	V
[SBD]						
Reverse Voltage	VR	IR=2mA	30			V
Forward Voltage	VF	IF=3A		0.37	0.42	V
Reverse Current	IR	VR=15V			1.4	mA
Interterminal Capacitance	C	VR=10V, f=1MHz		90		pF
Reverse Recovery Time	trr	IF=IR=100mA, See specified Test Circuit.			20	ns

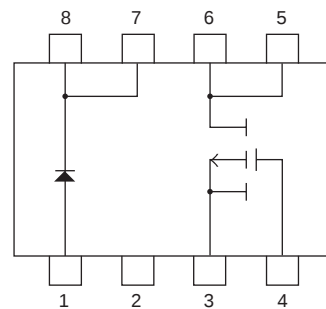
Package Dimensions

unit : mm (typ)

7012-004



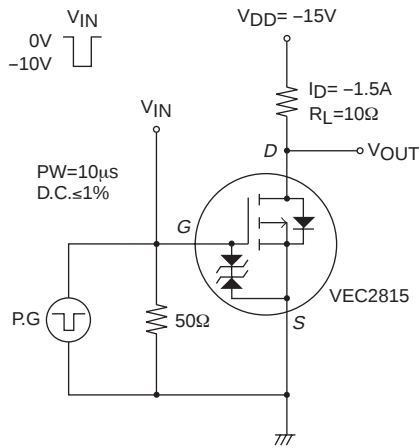
Electrical Connection



Top view

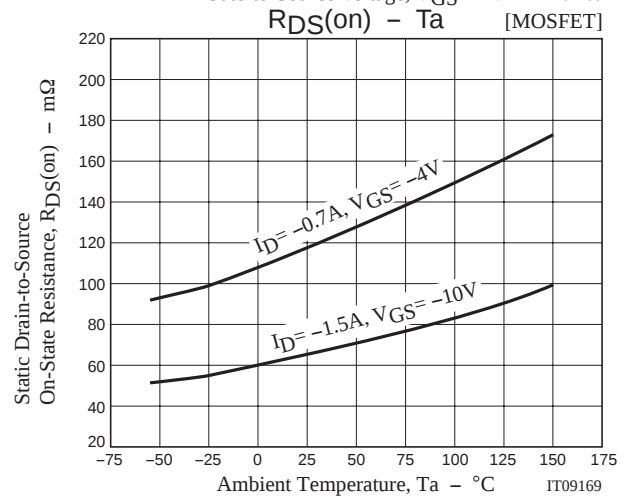
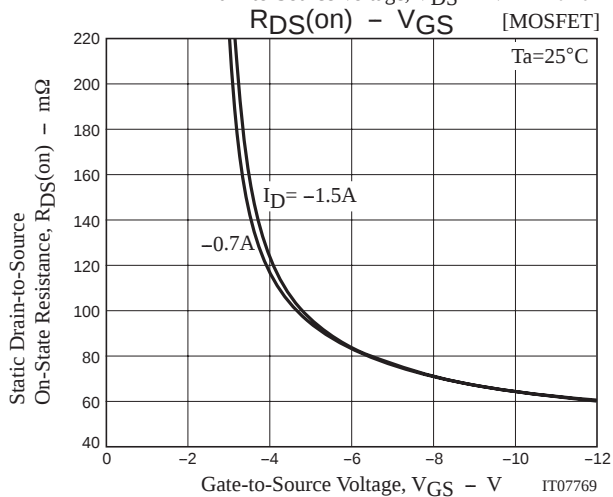
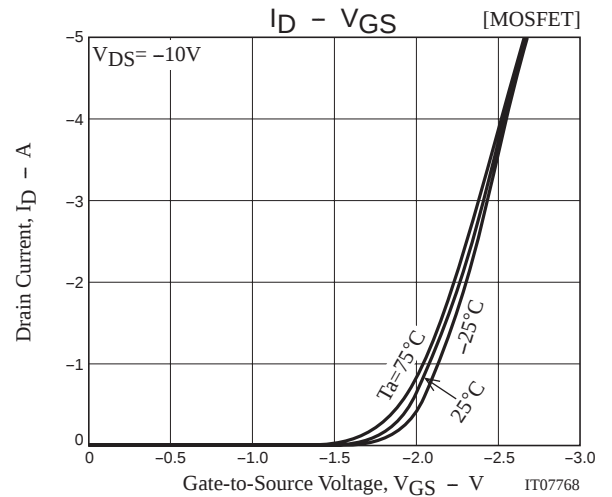
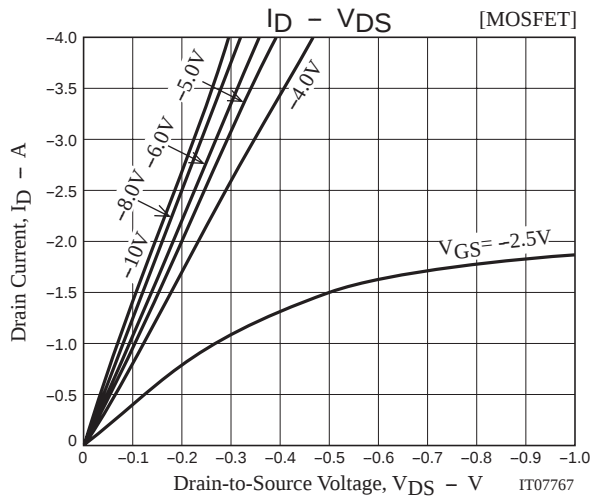
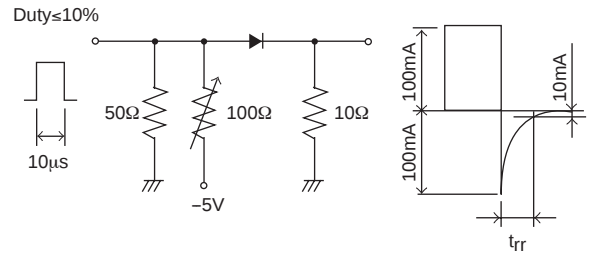
Switching Time Test Circuit

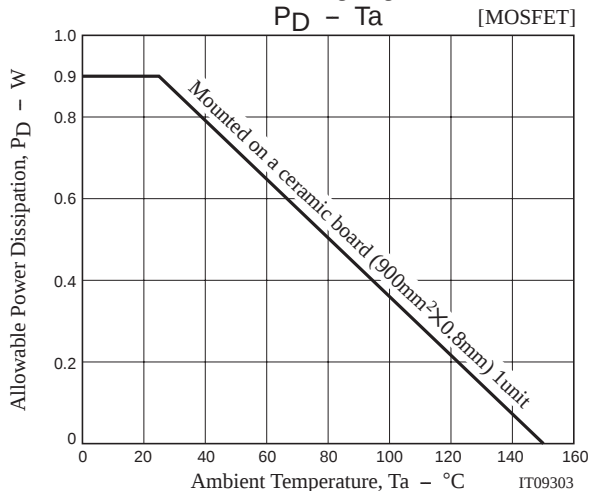
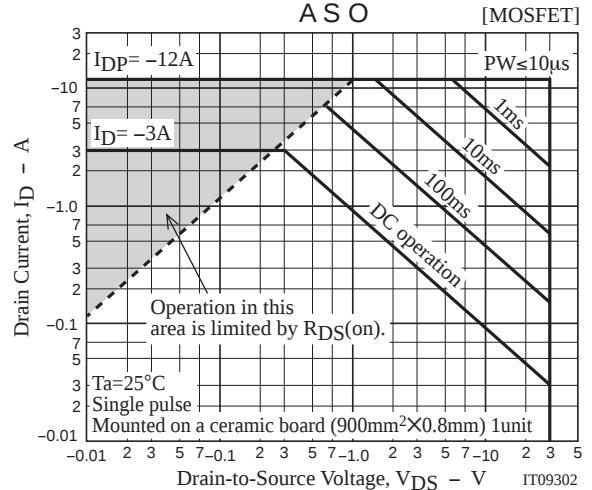
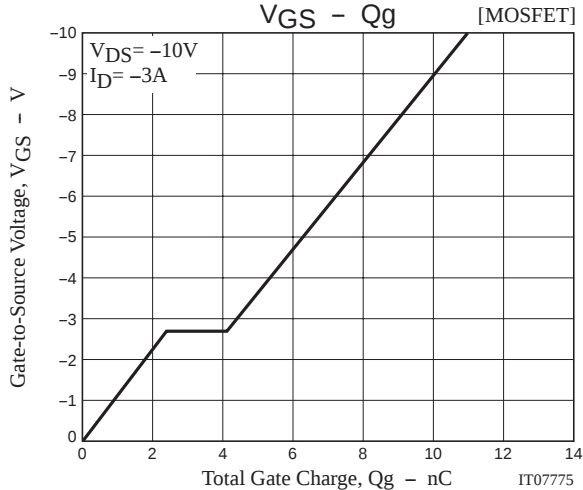
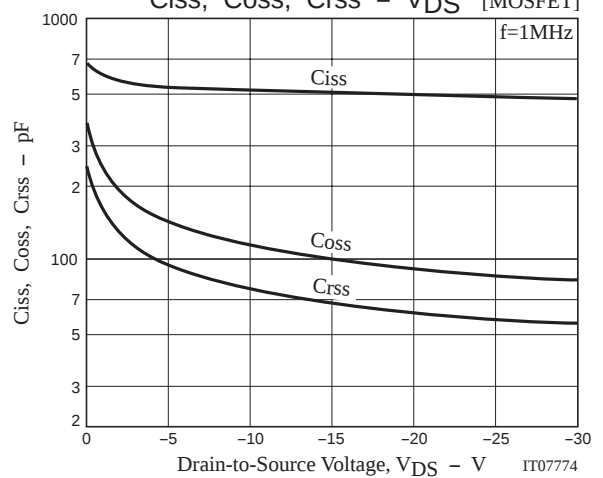
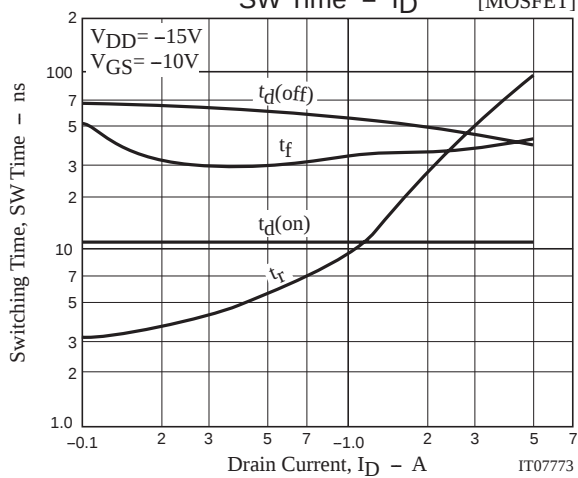
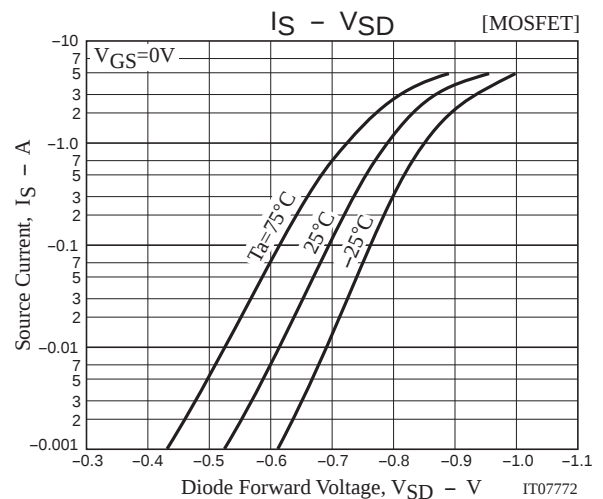
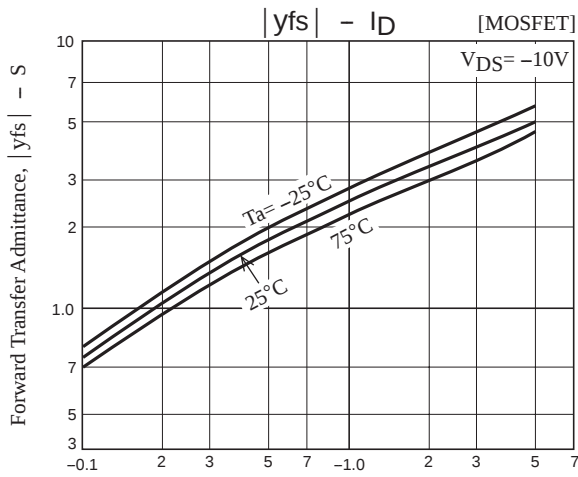
[MOSFET]

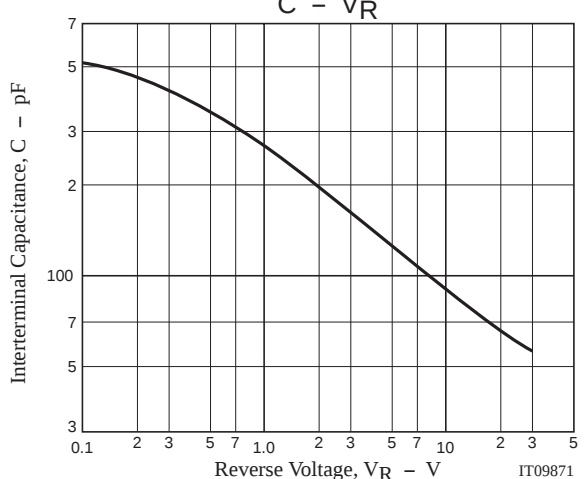
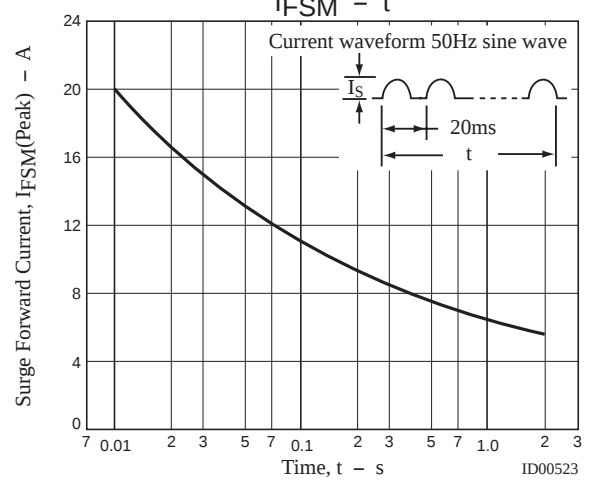
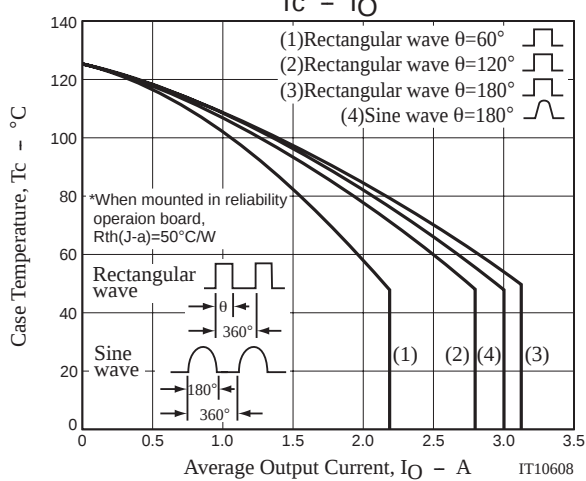
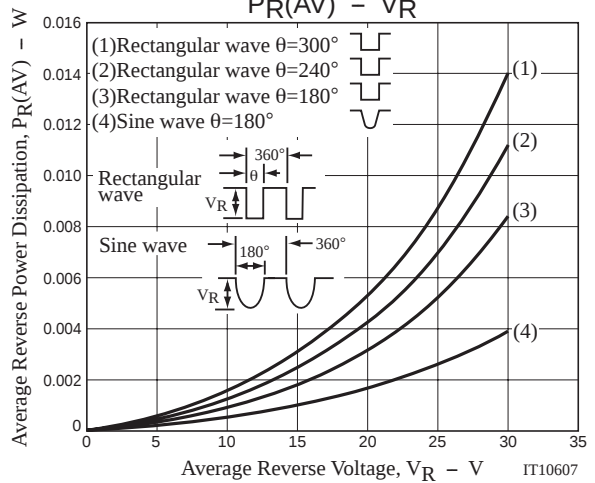
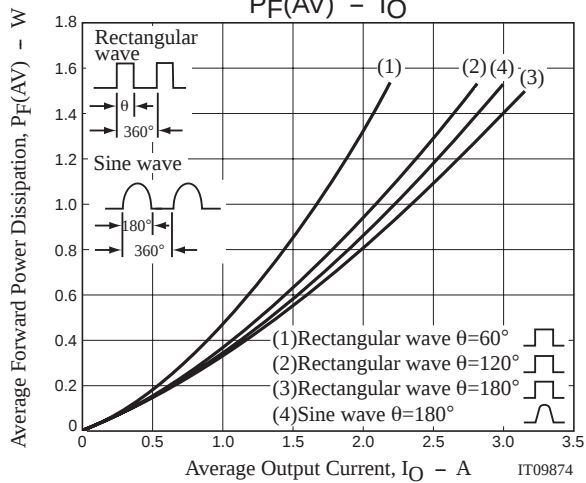
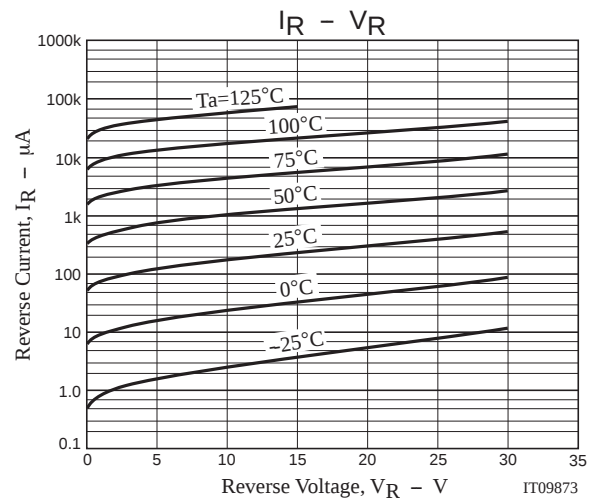
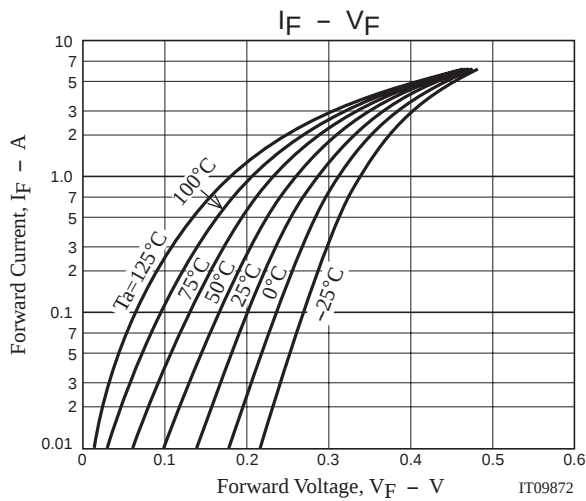


t_{rr} Test Circuit

[SBD]







Note on usage : Since the VEC2815 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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