



SANYO Semiconductors

DATA SHEET

VEC2819

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
- Ultrahigh-speed switching.
- 1.8V drive.

[SBD]

- Low switching noise.
- Low leakage current and high reliability due to planar structure.

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		-3.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-14	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (1200mm ² ×0.8mm) 1unit	1.0	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

Marking : CT

Continued on next page.

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VEC2819

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Parameter	Symbol	Conditions	Ratings	Unit
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

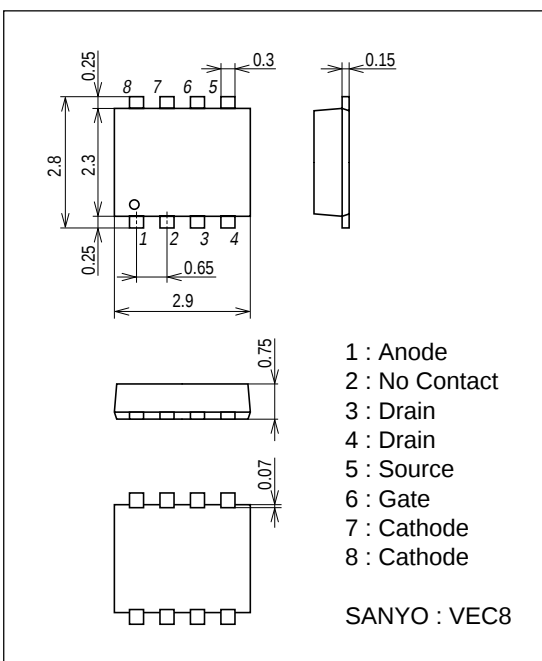
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0V	-20			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-20V, VGS=0V			-1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±8V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-0.4		-1.4	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-2A	3.5	5.8		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-2A, VGS=-4.5V		55	72	mΩ
	RDS(on)2	ID=-1A, VGS=-2.5V		77	108	mΩ
	RDS(on)3	ID=-0.3A, VGS=-1.8V		112	168	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		680		pF
Output Capacitance	Coss	VDS=-10V, f=1MHz		115		pF
Reverse Transfer Capacitance	Crss	VDS=-10V, f=1MHz		80		pF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		12		ns
Rise Time	tr	See specified Test Circuit.		57		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit.		68		ns
Fall Time	tf	See specified Test Circuit.		58		ns
Total Gate Charge	Qg	VDS=-10V, VGS=-4.5V, ID=-3.5A		8.7		nC
Gate-to-Source Charge	Qgs	VDS=-10V, VGS=-4.5V, ID=-3.5A		1.5		nC
Gate-to-Drain "Miller" Charge	Qgd	VDS=-10V, VGS=-4.5V, ID=-3.5A		1.8		nC
Diode Forward Voltage	VSD	IS=-3.5A, VGS=0V		-0.83	-1.2	V
[SBD]						
Reverse Voltage	VR	IR=200μA	30			V
Forward Voltage	VF1	IF=1A		0.4	0.45	V
	VF2	IF=2A		0.45	0.5	V
Reverse Current	IR	VR=15V			30	μA
Interterminal Capacitance	C	VR=10V, f=1MHz		75		pF
Reverse Recovery Time	trr	IF=IR=100mA, See specified Test Circuit.			20	ns

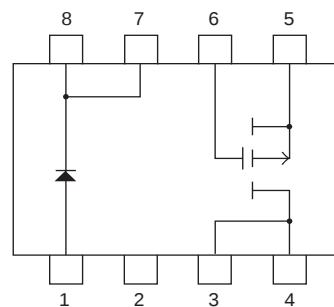
Package Dimensions

unit : mm (typ)

7012-005



Electrical Connection

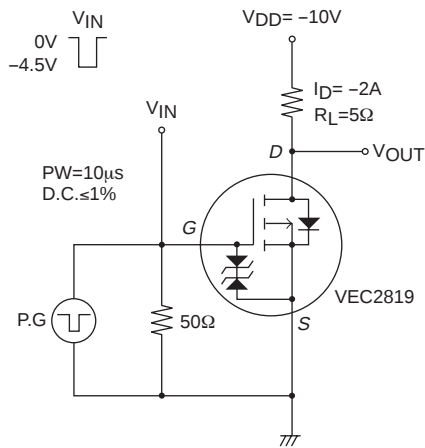


- 1 : Anode
- 2 : No Contact
- 3 : Drain
- 4 : Drain
- 5 : Source
- 6 : Gate
- 7 : Cathode
- 8 : Cathode

Top view

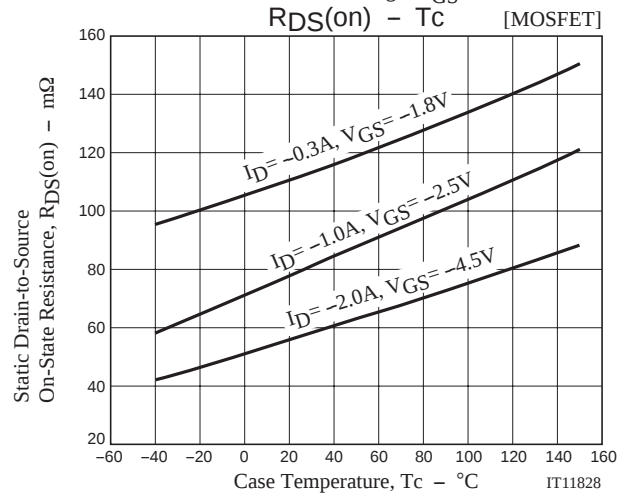
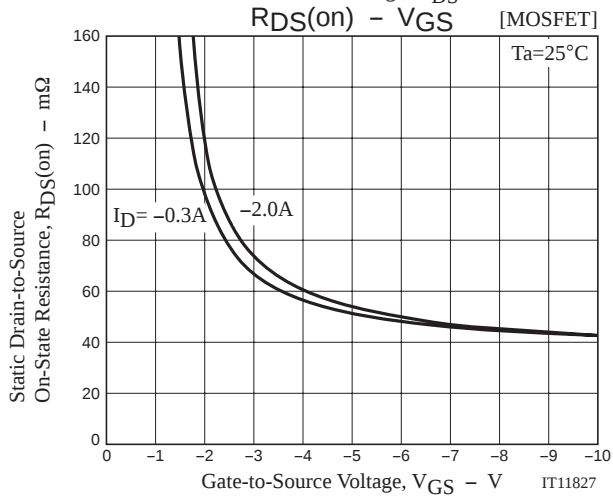
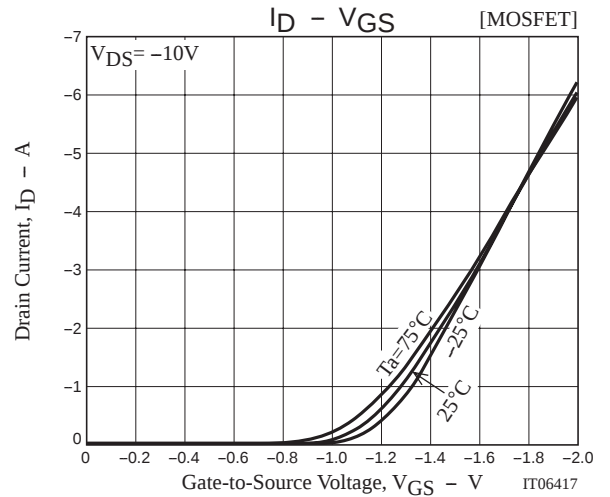
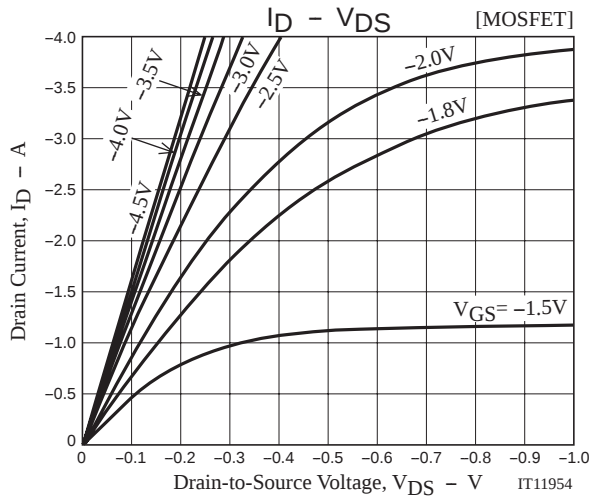
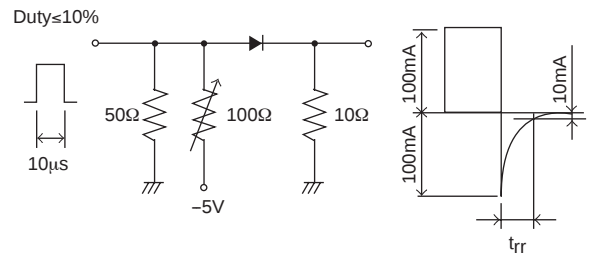
Switching Time Test Circuit

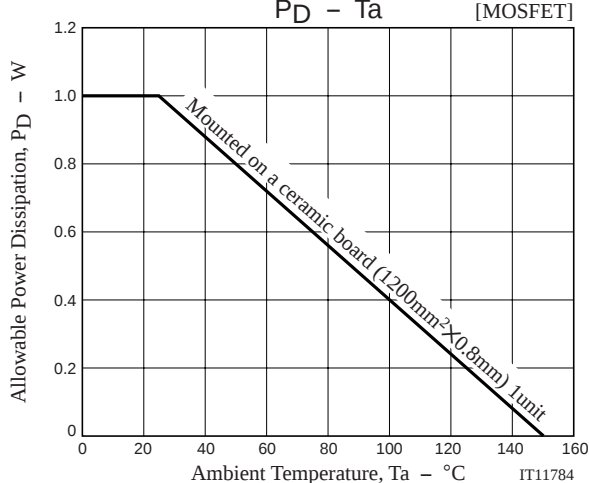
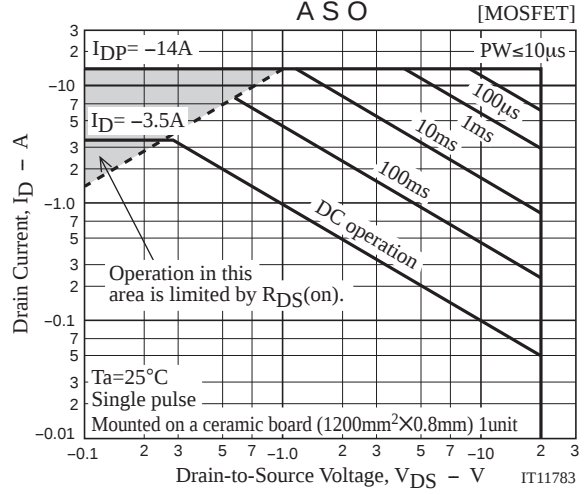
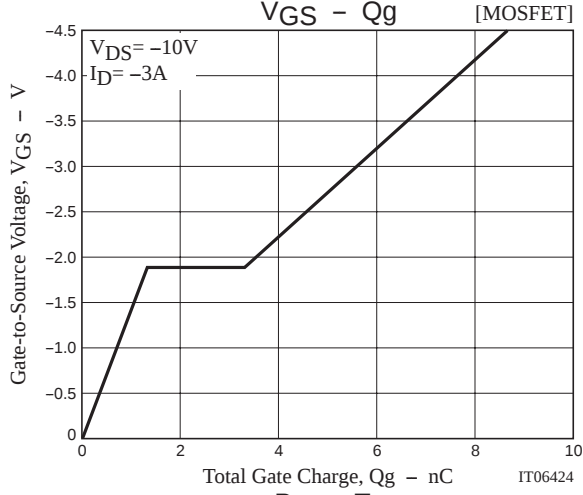
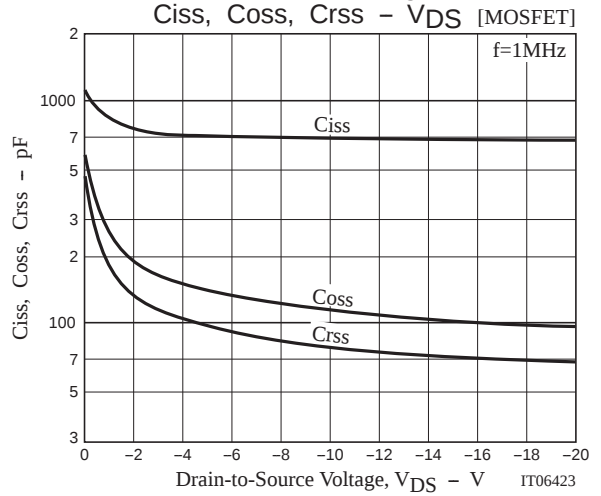
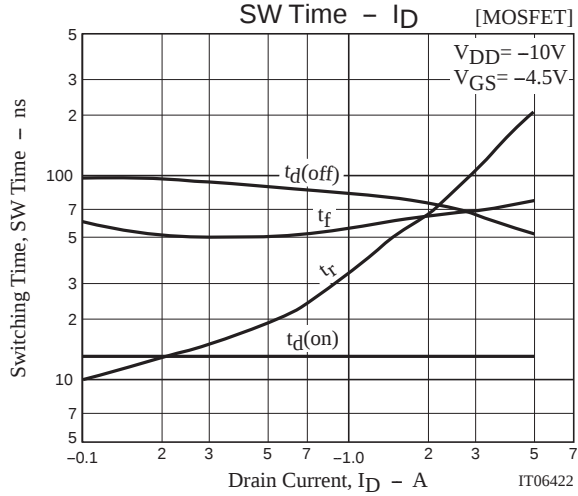
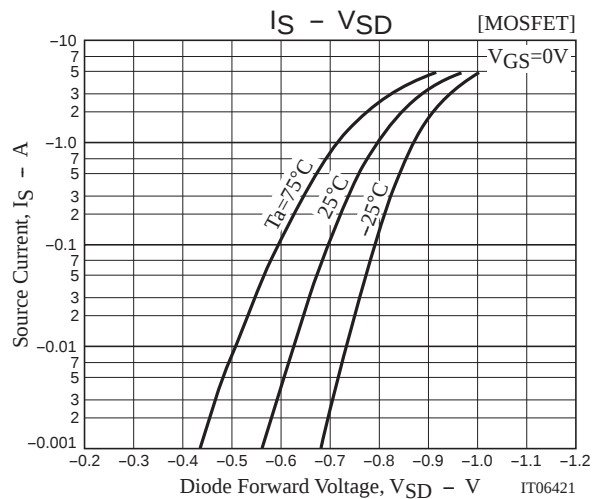
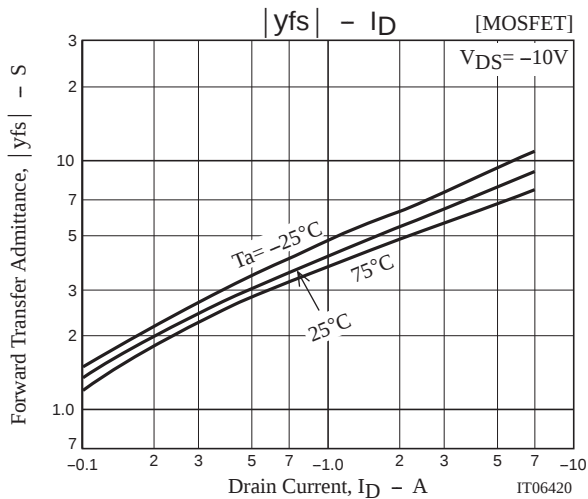
[MOSFET]

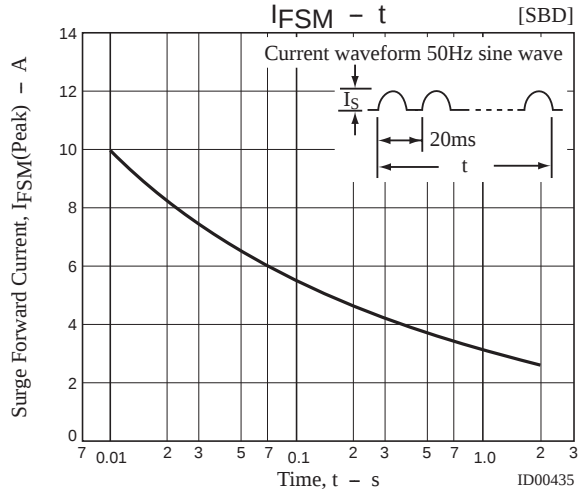
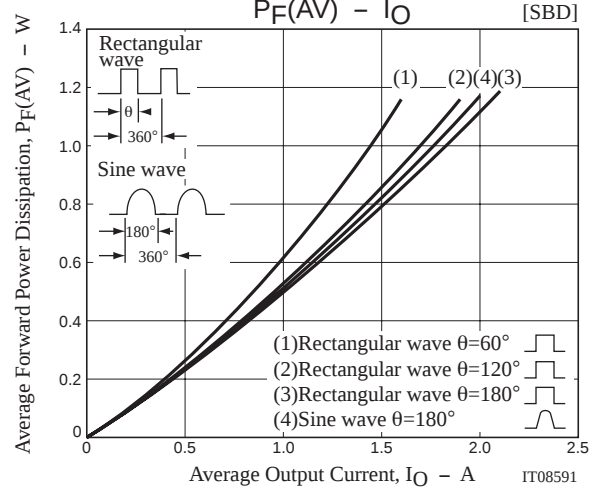
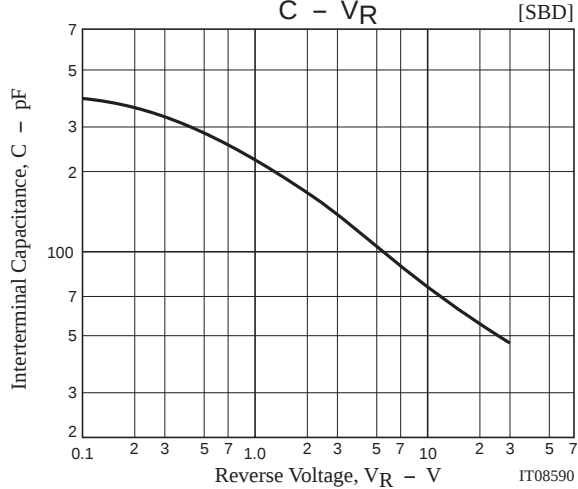
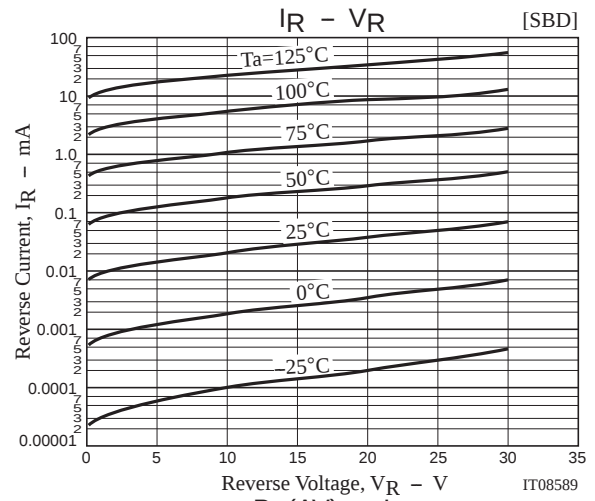
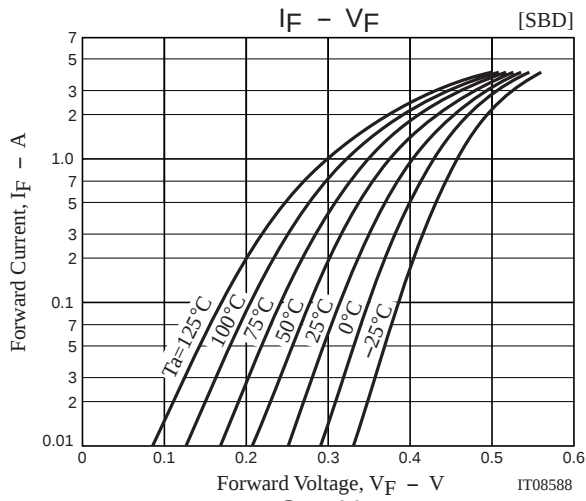


t_{rr} Test Circuit

[SBD]







Note on usage : Since the VEC2819 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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