



SANYO Semiconductors

DATA SHEET

VEC2811

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 | | 2 | 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 : BY

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VEC2811

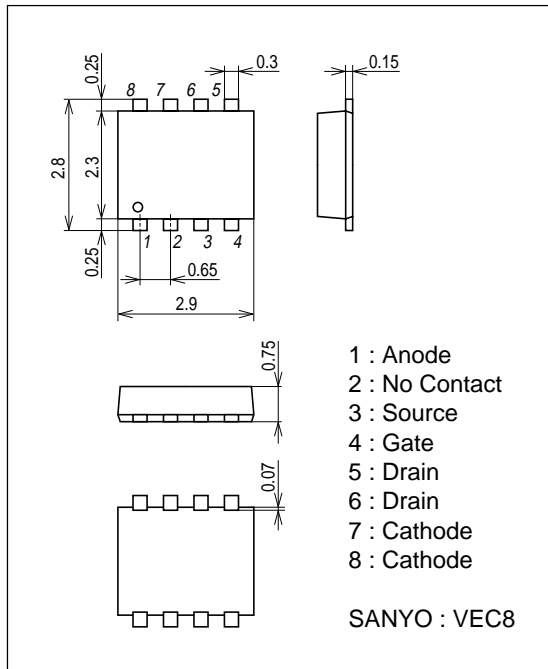
Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|---|---------|-------|----------|-----------|
| | | | min | typ | max | |
| [MOSFET] | | | | | | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=-1mA, V_{GS}=0V$ | -30 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-30V, V_{GS}=0V$ | | | -1 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 16V, V_{DS}=0V$ | | | ± 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} | $I_S=-3A, V_{GS}=0V$ | | -0.87 | -1.2 | V |
| [SBD] | | | | | | |
| Reverse Voltage | V_R | $I_R=2mA$ | 30 | | | V |
| Forward Voltage | V_F | $I_F=2A$ | | 0.4 | 0.45 | V |
| Reverse Current | I_R | $V_R=15V$ | | | 1.25 | mA |
| Interterminal Capacitance | C | $V_R=10V, f=1MHz$ | | 75 | | pF |
| Reverse Recovery Time | t_{rr} | $I_F=I_R=100mA$, See specified Test Circuit. | | 20 | | ns |

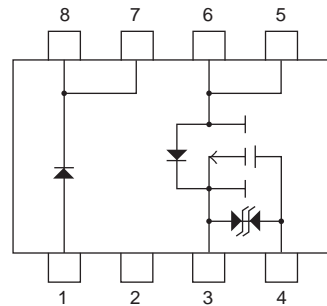
Package Dimensions

unit : mm

7012-004



Electrical Connection



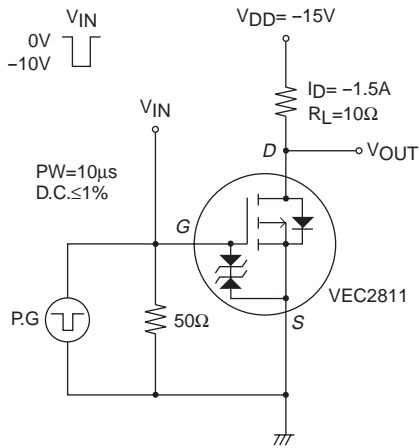
- 1 : Anode
- 2 : No Contact
- 3 : Source
- 4 : Gate
- 5 : Drain
- 6 : Drain
- 7 : Cathode
- 8 : Cathode

Top view

VEC2811

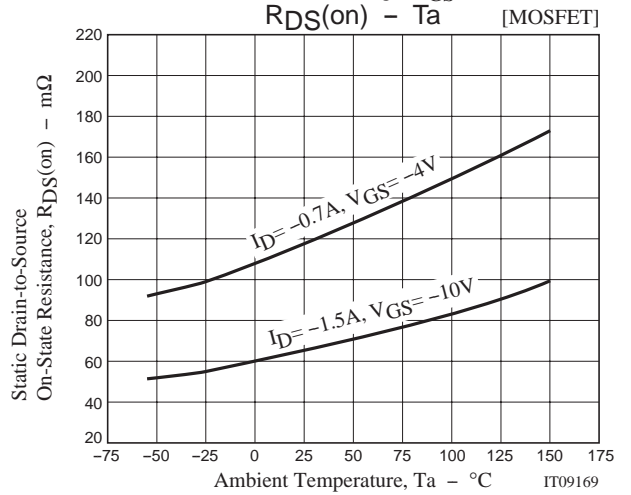
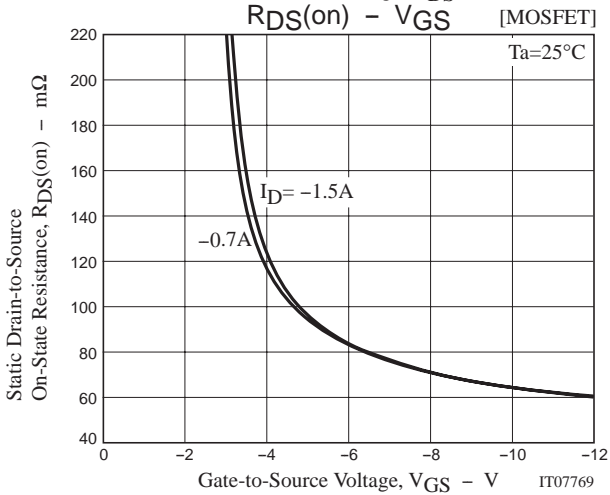
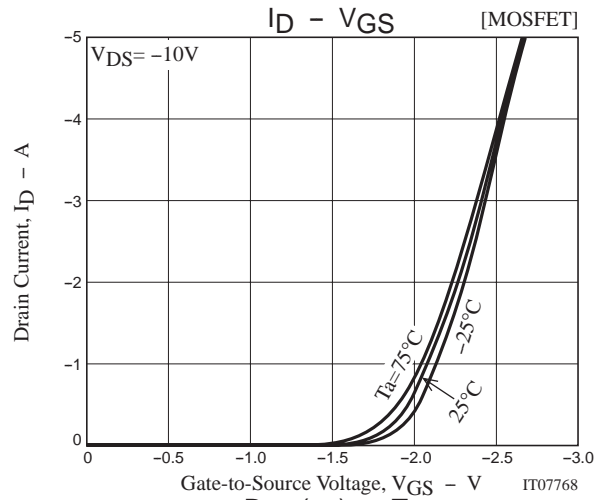
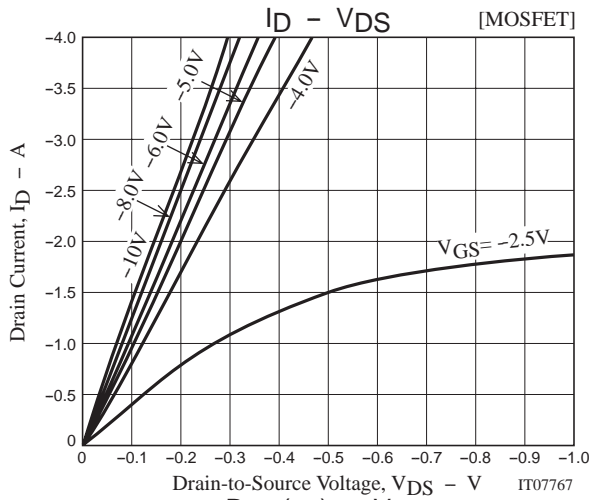
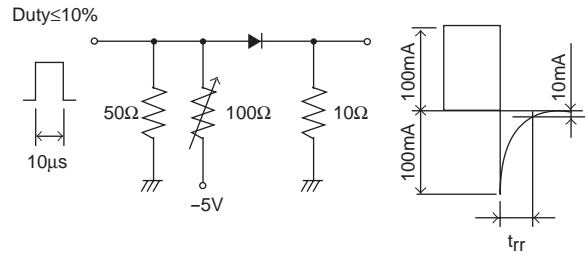
Switching Time Test Circuit

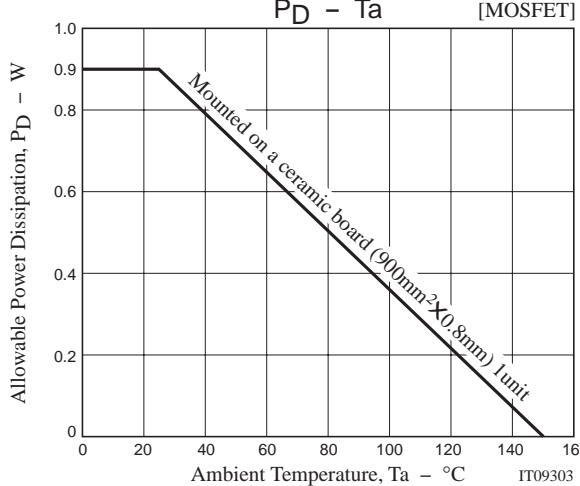
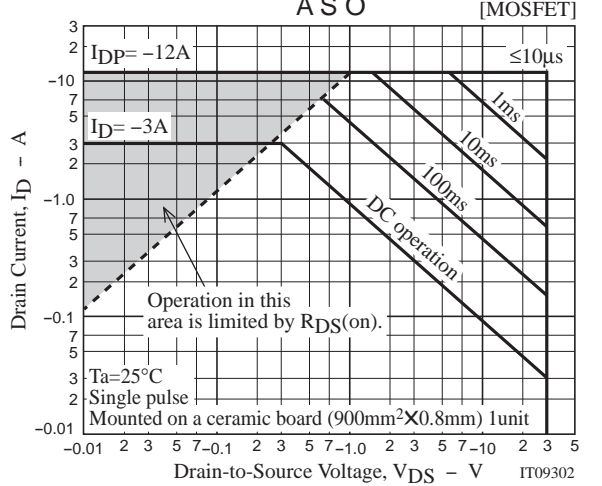
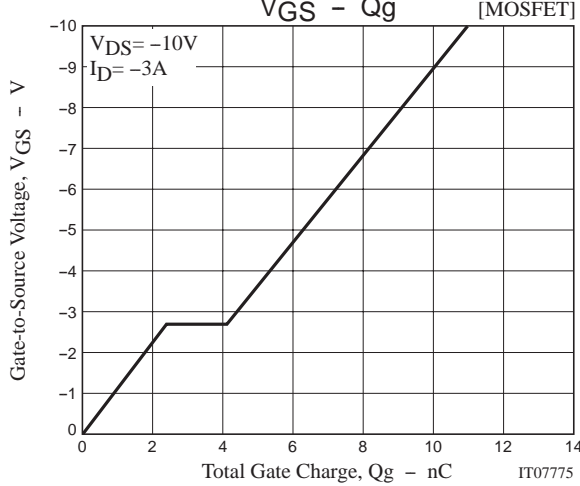
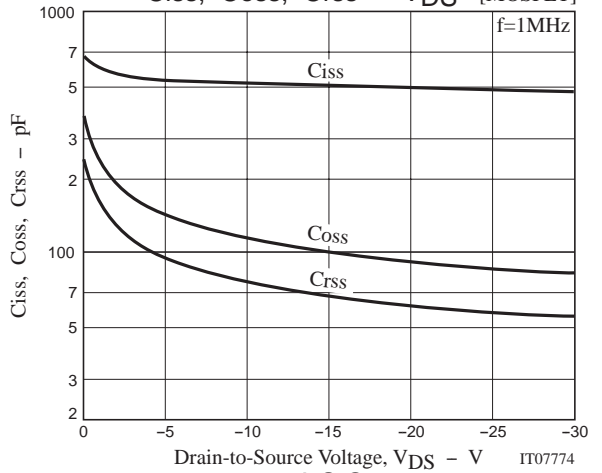
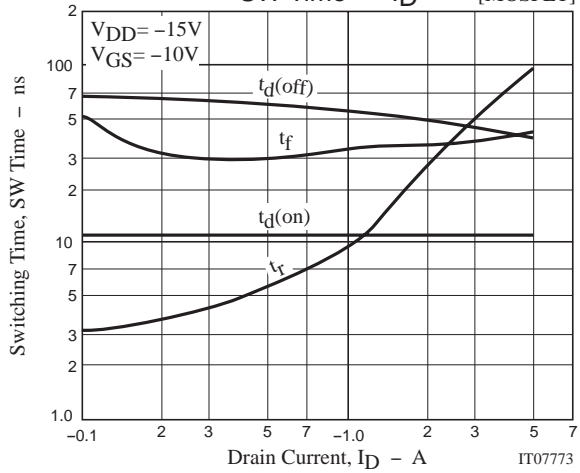
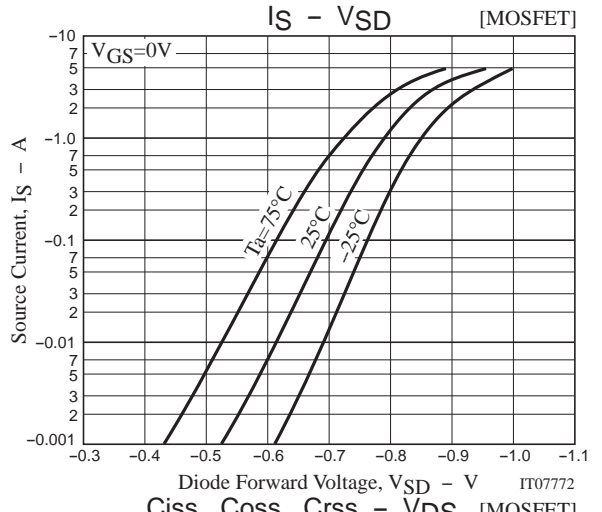
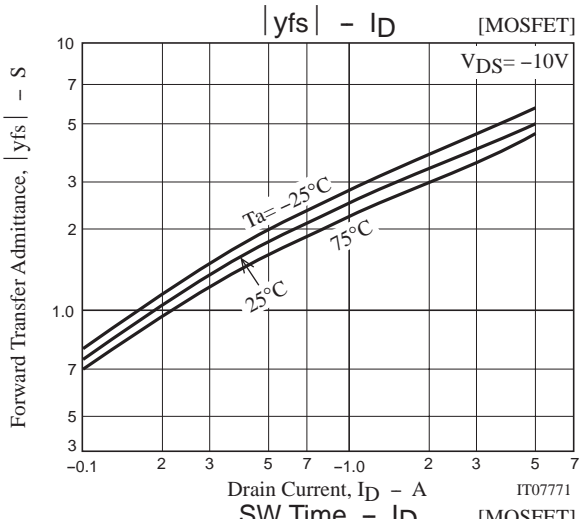
[MOSFET]

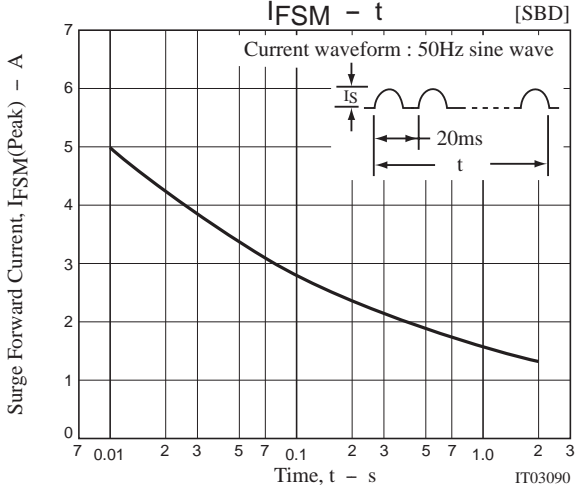
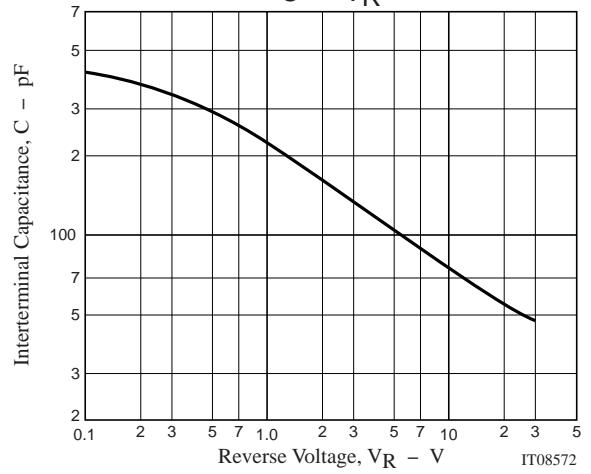
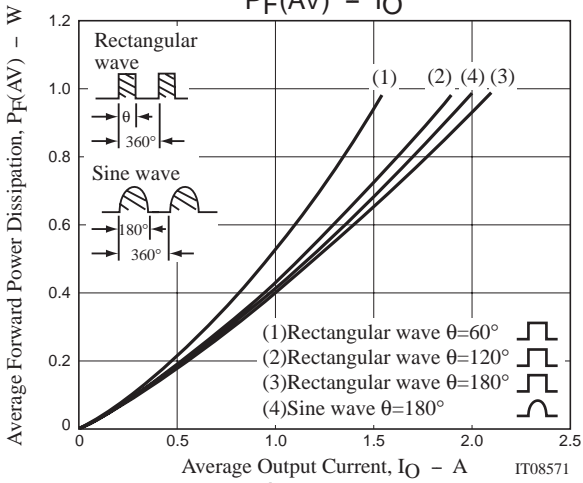
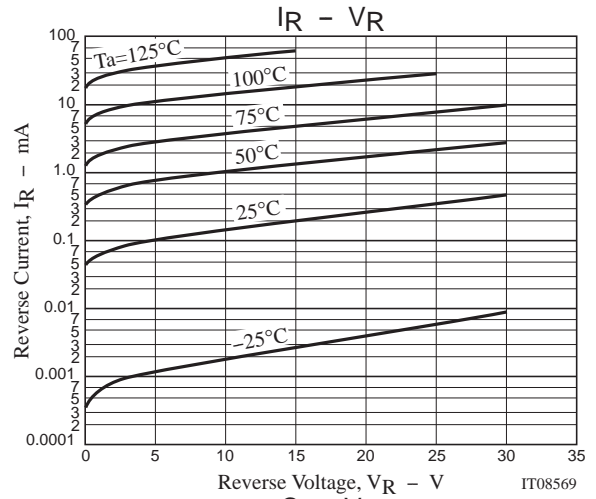
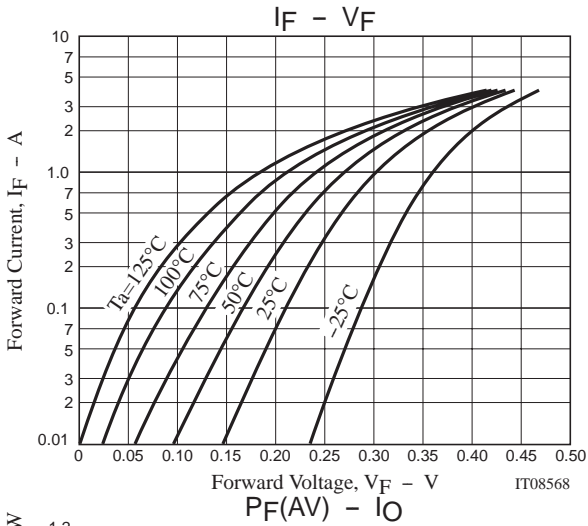


t_{rr} Test Circuit

[SBD]







Note on usage : Since the VEC2811 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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