# Single P-Channel, -30V, -4.1A, Power MOSFET

## Features

- ✧ Trench Technology
- ✧ Supper high density cell design
- ✧ Excellent ON resistance
- ✧ Extremely Low Threshold Voltage
- ✧ Small package SOT-23

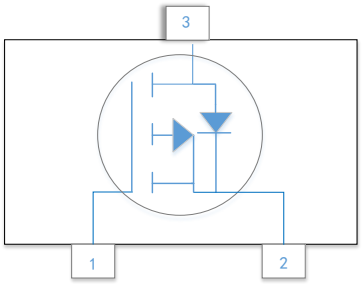
| $V_{DS}$ (V) | Typical $R_{DS(on)}$ (mΩ) |
|---|---|
| -30 | 50 @ $V_{GS}$=-10V |
| | 68 @ $V_{GS}$=-4.5V |

## Applications

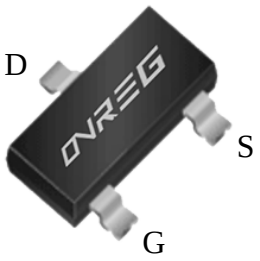
- ✧ DC/DC converters
- ✧ Power supply converters circuit
- ✧ Load/Power Switching for portable device

## Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ Reel Size : 7 inch
- ✧ RoHS/WEEE Complain




Circuit Diagram




SOT-23

**Absolute Maximum Rating at $T_A$ = 25℃, unless otherwise specified**

| Parameters | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | -30 | V |
| Gate-Source Voltage | $V_{GS}$ | ±20 | V |
| Continuous Drain Current | $I_D$ | -4.1 | A |
| Power Dissipation | $P_D$ | 350 | mW |
| Junction Temperature | $T_j$ | 150 | ℃ |
| Storage Temperature | Tstg | -50-+150 | ℃ |
| Thermal Resistance From Junction to Ambient (note 2) | $R_{\theta JA}$ | 357 | ℃/W |

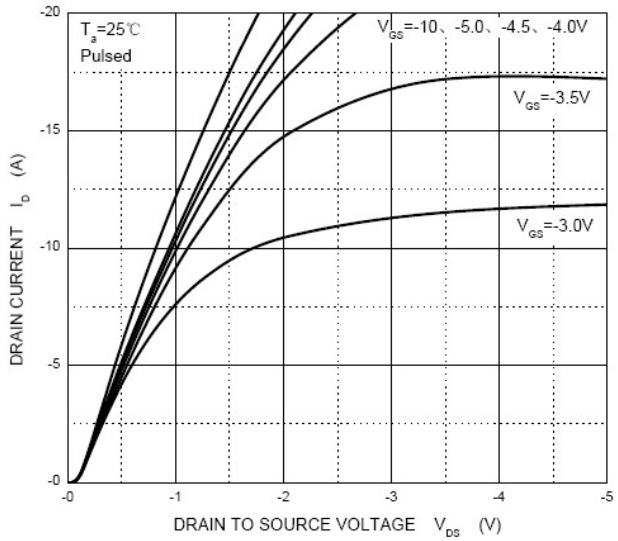
## Electronics Characteristics (Ta=25°C, unless otherwise noted)

| Parameter | Symbols | Test Condition | Limits | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | |
| **Off characteristics** | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}$=0V, $I_D$=-250uA | -30 | | | V |
| Zero Gate Voltage Drain current | $I_{DSS}$ | $V_{DS}$=-24V, $V_{GS}$=0V | | | -1 | uA |
| Gate-body Leakage | $I_{GSS}$ | $V_{DS}$=±20V, $V_{DS}$=0V | | | ±100 | nA |
| **On characteristics** | | | | | | |
| Drain-Source On-Resistance (note 1) | $R_{DS(ON)}$ | $V_{GS}$=-10V, $I_D$=-4.1A | | 50 | 60 | mΩ |
| | | $V_{GS}$=-4.5V, $I_D$=-3A | | 68 | 87 | |
| Forward trans conductance | $g_{fs}$ | $V_{DS}$=-5V, $I_D$=-4A | 5.5 | | | S |
| Gate-Threshold voltage* | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$, $I_D$=-250uA | -1.0 | -1.4 | -3.0 | V |
| **Dynamic characteristics (note 2)** | | | | | | |
| Input capacitance | Ciss | $V_{DS}$=-15V, $V_{GS}$=0V,f=1MHz | | 700 | | pF |
| Output capacitance | Coss | | | 120 | | |
| Reverse Transfer capacitance | Crss | | | 75 | | |
| **Switching characteristics (note 2)** | | | | | | |
| Turn-on Time | td(on) | $V_{GS}$=-10V, $R_L$=3.6Ω, $V_{DS}$=-15V, $R_{GEN}$=3Ω | | 8.6 | | ns |
| Rise time | tr | | | 5.0 | | |
| Turn-off Time | td(off) | | | 28.2 | | |
| Fall time | tf | | | 13.5 | | |
| Drain-source diode characteristics and maximum ratings | | | | | | |
| Diode forward voltage(note 1) | $V_{SD}$ | $I_S$=-1A, $V_{GS}$=0V | | | -1.0 | V |

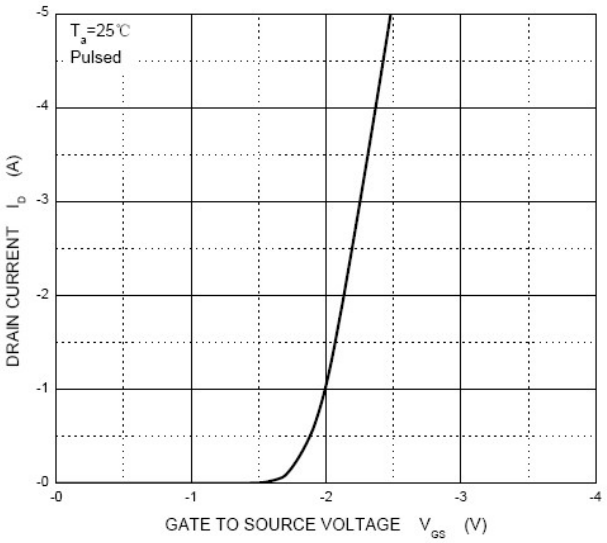
Notes: 1. Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
2. These parameters have no way to verify.

## Electronics Characteristics (Ta=25°C, unless otherwise noted)

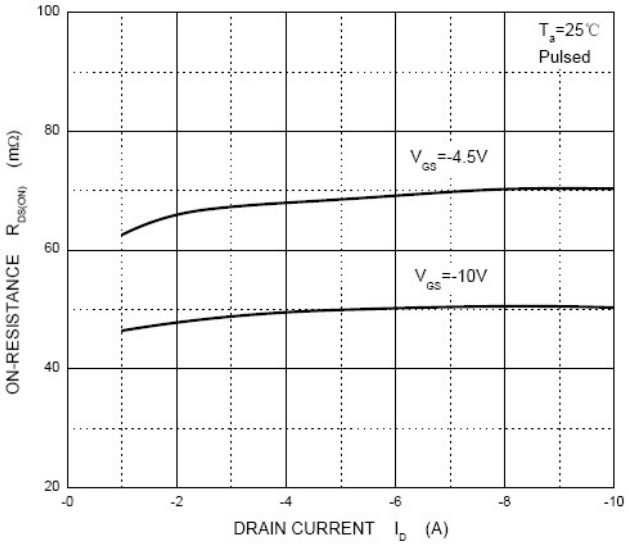
Output Characteristics



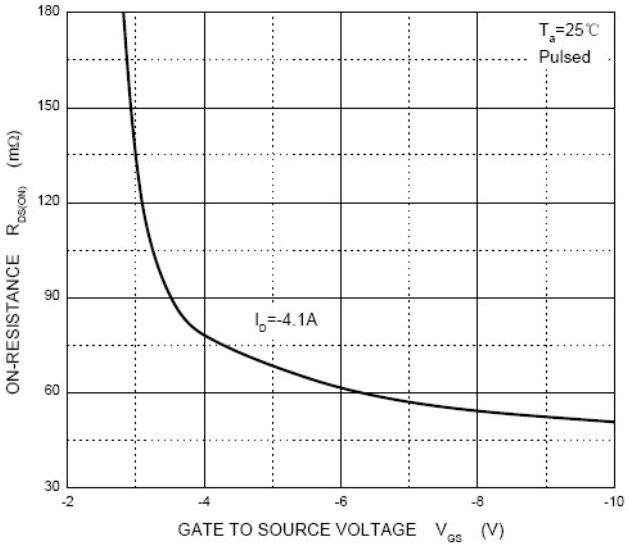

Transfer Characteristics



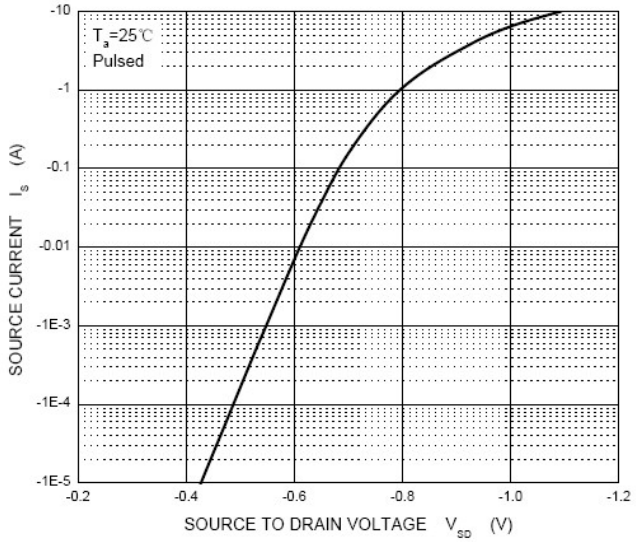

RDS(ON) —— ID



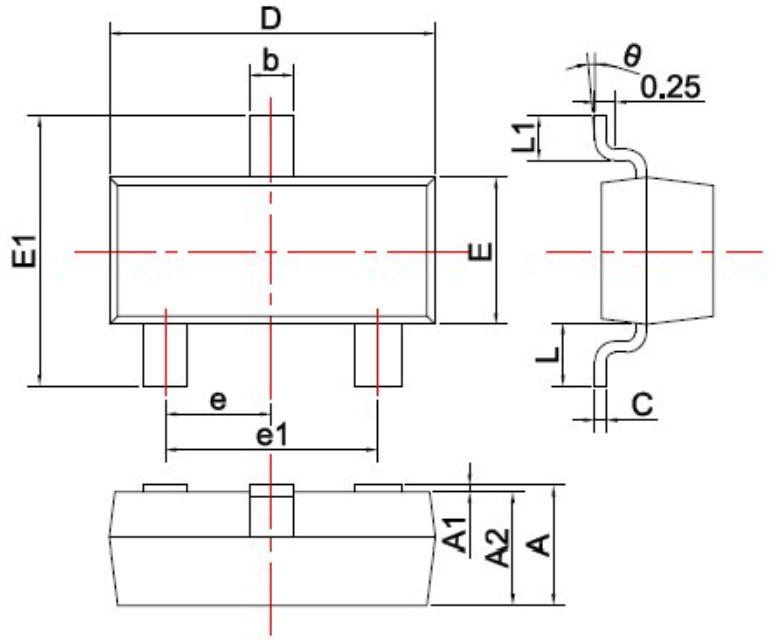

RDS(ON) —— VGS




IS —— VSD



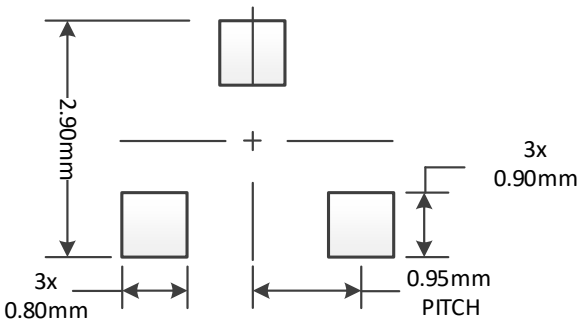
## Package information




| SYMBOL | DIMENSIONS | |
|---|---|---|
| | MIN. | MAX. |
| A | 0.900 | 1.150 |
| A1 | 0.000 | 0.100 |
| A2 | 0.900 | 1.050 |
| b | 0.300 | 0.500 |
| c | 0.080 | 0.150 |
| D | 2.800 | 3.000 |
| E | 1.200 | 1.400 |
| E1 | 2.250 | 2.550 |
| e | 0.950TYP | |
| e1 | 1.800 | 2.000 |
| L | 0.550REF | |
| L1 | 0.300 | 0.500 |
| θ | 0° | 8° |

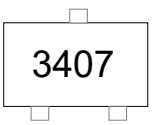
Unit: mm

## Recommend PCB Layout




Notes: This PCB Layout Is For Reference Purposes Only

## Marking




## Ordering Information

| Part number | Material | Type | Reel size | MOQ | MOQ/internal box | MOQ/carton |
|---|---|---|---|---|---|---|
| OVM30P68T | GREEN | T/R | 7 inch | 3k/reel | 10reel= 30k/box | 4boxes=120k/carton |