

## N-Channel 150V(D-S) MOSFET

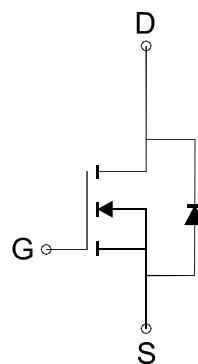
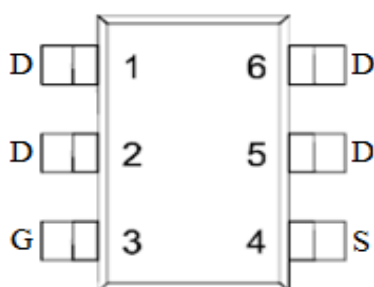
### GENERAL DESCRIPTION

The ME3466-G is the N-Channel logic enhancement mode power field effect transistors, using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular phone, notebook computer power management and other battery powered circuits, and low in-line power loss that are needed in a very small outline surface mount package.

### PIN CONFIGURATION

(SOT-26)

Top View



N-Channel MOSFET

### FEATURES FEATURES

- $R_{DS(ON)} \leq 375m\Omega @ V_{GS} = 10V$
- $R_{DS(ON)} \leq 400m\Omega @ V_{GS} = 6V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

### APPLICATIONS

- Power Management in Note book
- DC/DC Converter
- Load Switch
- LCD Display inverter

**Ordering Information:**ME3466-G (Green product-Halogen free)

### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter                                            |                        | Symbol          | Maximum Ratings | Unit               |
|------------------------------------------------------|------------------------|-----------------|-----------------|--------------------|
| Drain-Source Voltage                                 |                        | $V_{DSS}$       | 150             | V                  |
| Gate-Source Voltage                                  |                        | $V_{GSS}$       | $\pm 20$        | V                  |
| Continuous Drain Current ( $T_j=150^\circ\text{C}$ ) | $T_A=25^\circ\text{C}$ | $I_D$           | 1.7             | A                  |
|                                                      | $T_A=70^\circ\text{C}$ |                 | 1.3             |                    |
| Pulsed Drain Current                                 |                        | $I_{DM}$        | 7               |                    |
| Maximum Power Dissipation                            | $T_A=25^\circ\text{C}$ | $P_D$           | 1.7             | W                  |
|                                                      | $T_A=70^\circ\text{C}$ |                 | 1.1             |                    |
| Junction and Storage Temperature Range               |                        | $T_J, T_{stg}$  | -55 to 150      | $^\circ\text{C}$   |
| Thermal Resistance-Junction to Ambient*              |                        | $R_{\theta JA}$ | 74              | $^\circ\text{C/W}$ |

\*The device mounted on 1in2 FR4 board with 2 oz copper

DCC  
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Electrical Characteristics (T<sub>J</sub> = 25°C Unless Otherwise Specified)

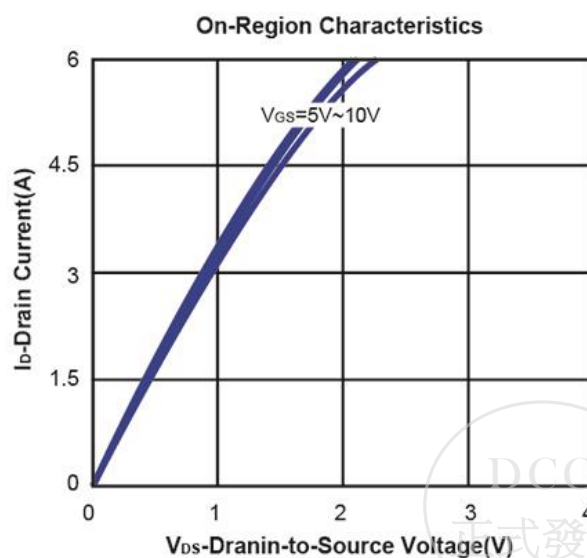
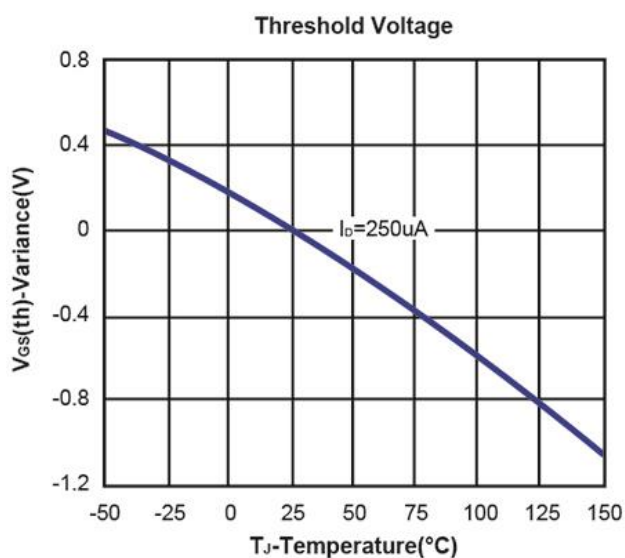
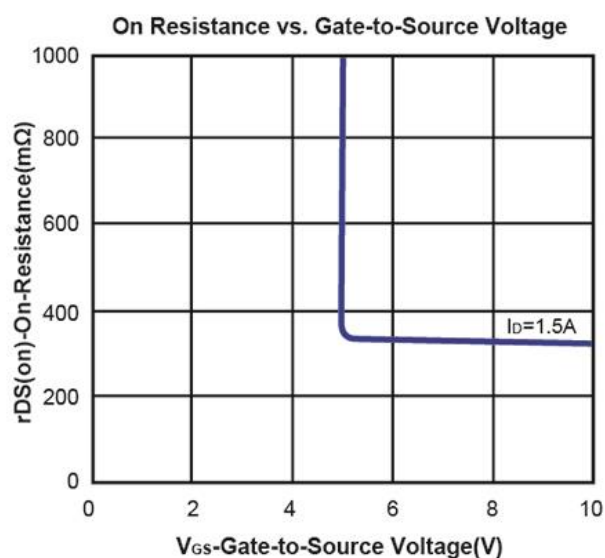
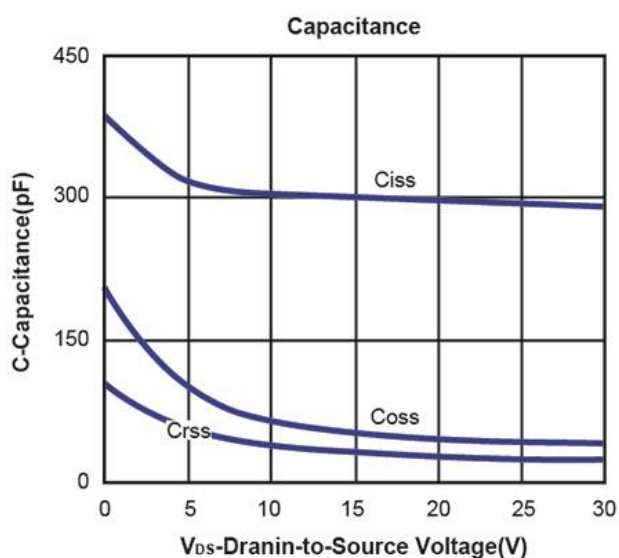
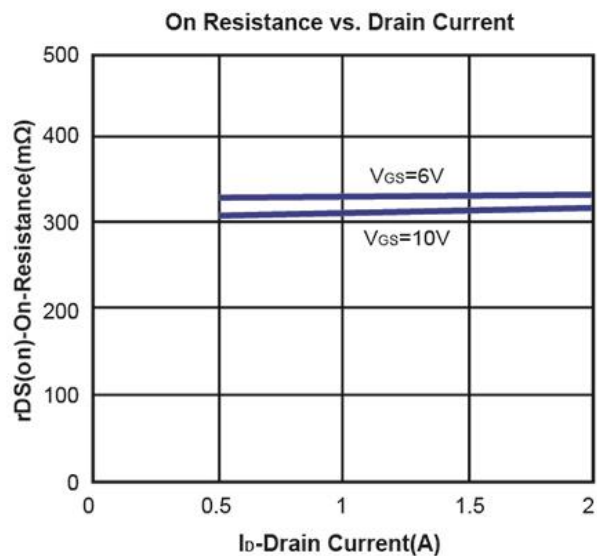
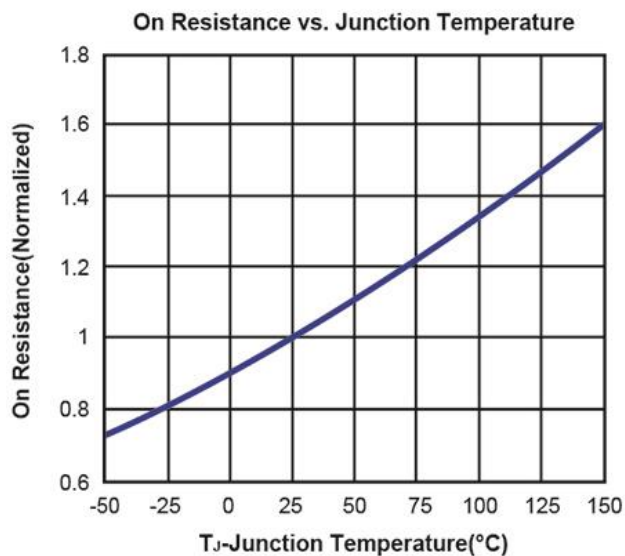
| Symbol                    | Parameter                               | Limit                                                                                                       | Min | Typ  | Max  | Unit |
|---------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|-----|------|------|------|
| <b>STATIC PARAMETERS</b>  |                                         |                                                                                                             |     |      |      |      |
| V <sub>(BR)DSS</sub>      | Drain-Source Breakdown Voltage          | V <sub>GS</sub> =0V, I <sub>D</sub> =250 μA                                                                 | 150 |      |      | V    |
| V <sub>GS(th)</sub>       | Gate Threshold Voltage                  | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μA                                                   | 2   |      | 4    | V    |
| I <sub>GSS</sub>          | Gate-Body Leakage Current               | V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V                                                                  |     |      | ±100 | nA   |
| I <sub>DSS</sub>          | Zero Gate Voltage Drain Current         | V <sub>DS</sub> =150V, V <sub>GS</sub> =0V                                                                  |     |      | 1    | μA   |
| R <sub>DS(on)</sub>       | Drain-Source On-Resistance <sup>a</sup> | V <sub>GS</sub> =10V, I <sub>D</sub> =1.5A                                                                  |     | 310  | 375  | mΩ   |
|                           |                                         | V <sub>GS</sub> =6V, I <sub>D</sub> =1.4A                                                                   |     | 330  | 400  |      |
| V <sub>SD</sub>           | Diode Forward Voltage                   | I <sub>S</sub> =1.7A, V <sub>GS</sub> =0V                                                                   |     | 0.8  | 1.2  | V    |
| <b>DYNAMIC PARAMETERS</b> |                                         |                                                                                                             |     |      |      |      |
| Q <sub>g</sub>            | Total Gate Charge                       | V <sub>DS</sub> =75V, V <sub>GS</sub> =10V, I <sub>D</sub> =1.5A                                            |     | 5.1  |      | nC   |
| Q <sub>gs</sub>           | Gate-Source Charge                      |                                                                                                             |     | 0.6  |      |      |
| Q <sub>gd</sub>           | Gate-Drain Charge                       |                                                                                                             |     | 1.7  |      |      |
| C <sub>iss</sub>          | Input Capacitance                       | V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, f=1MHz                                                           |     | 290  |      | pF   |
| C <sub>oss</sub>          | Output Capacitance                      |                                                                                                             |     | 40   |      |      |
| C <sub>rss</sub>          | Reverse Transfer Capacitance            |                                                                                                             |     | 23   |      |      |
| t <sub>d(on)</sub>        | Turn-On Delay Time                      | V <sub>DS</sub> =75V, R <sub>L</sub> =75Ω<br>V <sub>GS</sub> =10V, R <sub>G</sub> =6Ω<br>I <sub>D</sub> =1A |     | 7.6  |      | ns   |
| t <sub>r</sub>            | Rise Time                               |                                                                                                             |     | 5.2  |      |      |
| t <sub>d(off)</sub>       | Turn-Off Delay Time                     |                                                                                                             |     | 19.5 |      |      |
| t <sub>f</sub>            | Fall Time                               |                                                                                                             |     | 13.8 |      |      |

Notes: a. Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2%, Guaranteed by design, not subject to production testing.

b. Matsuki Electric/ Force mos reserves the right to improve product design, functions and reliability without notice.

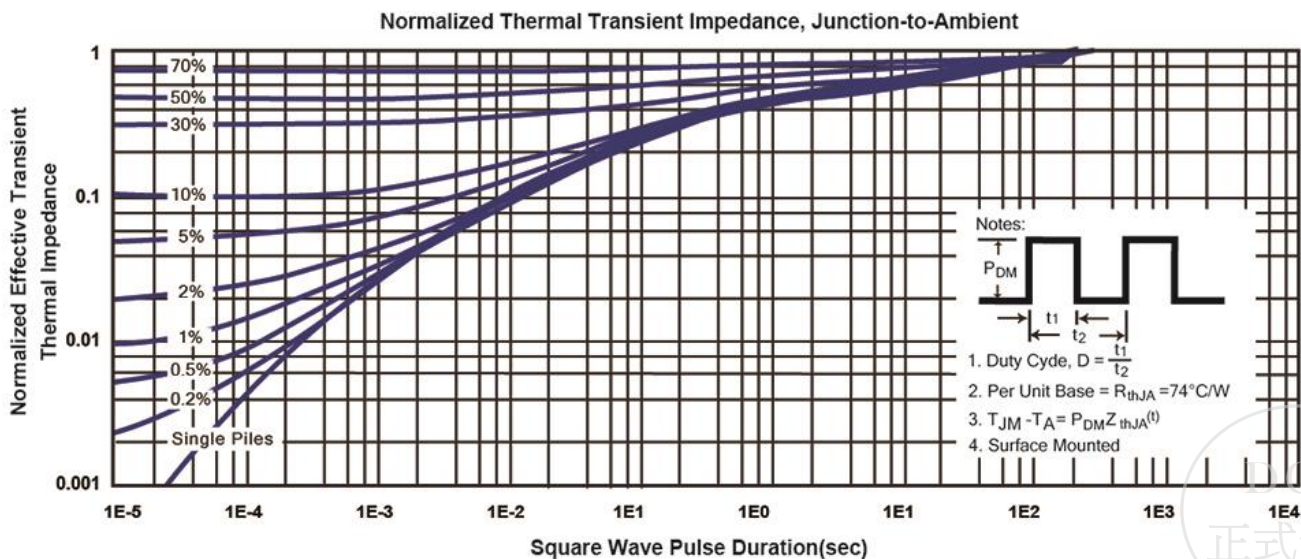
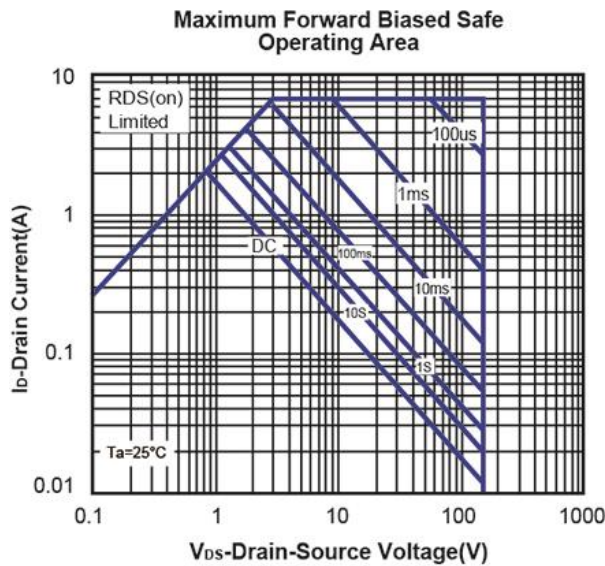
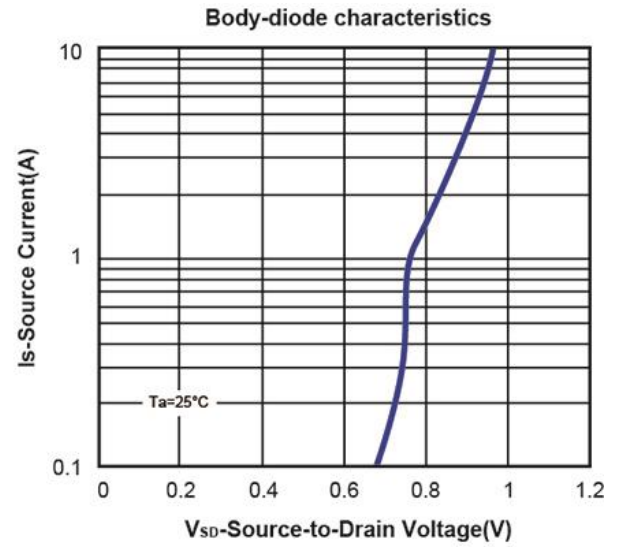
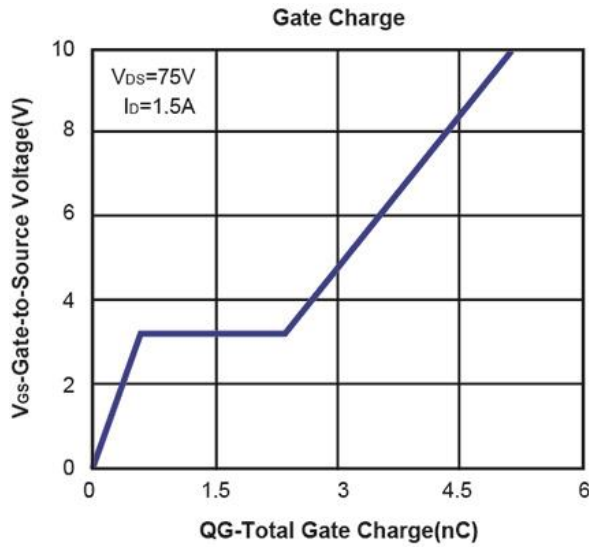
**N-Channel 150V(D-S) MOSFET**

Typical Characteristics ( $T_J = 25^\circ\text{C}$  Noted)

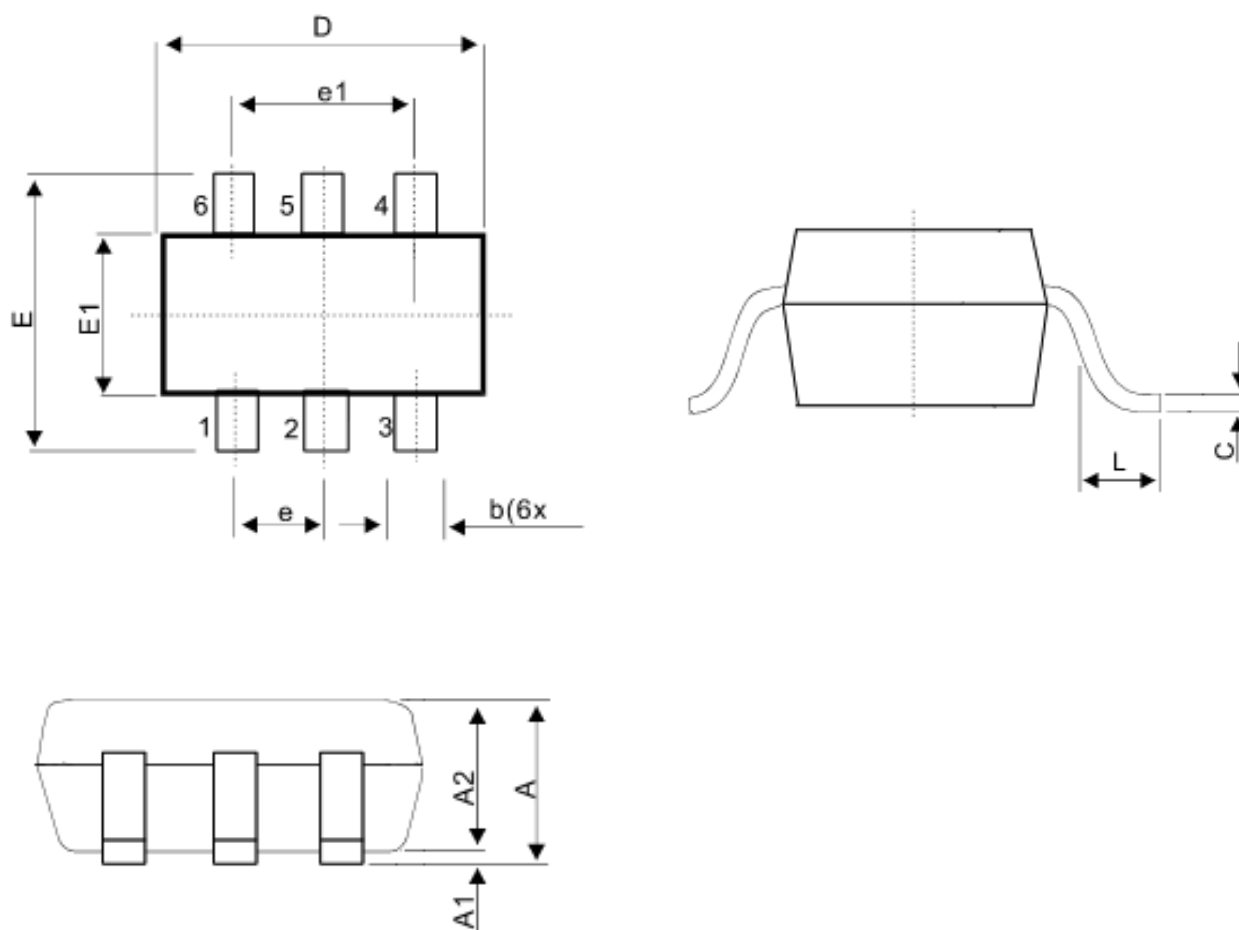


**N-Channel 150V(D-S) MOSFET**

Typical Characteristics ( $T_J = 25^\circ\text{C}$  Noted)



## TSOP-6 Package Outline



| SYMBOL | MILLIMETERS (mm) |      |
|--------|------------------|------|
|        | MIN              | MAX  |
| A      | 0.90             | 1.20 |
| A1     | 0.01             | 0.10 |
| A2     | 0.90             | 1.15 |
| b      | 0.25             | 0.50 |
| C      | 0.10             | 0.20 |
| D      | 2.80             | 3.10 |
| E      | 2.60             | 3.00 |
| E1     | 1.50             | 1.70 |
| e      | 0.95 BSC         |      |
| e1     | 1.90 BSC         |      |
| L      | 0.30             | 0.60 |