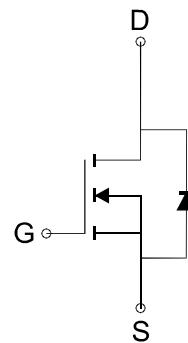
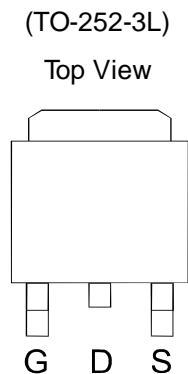


N-Channel 30V (D-S) MOSFET

GENERAL DESCRIPTION

The ME95N03 is the N-Channel logic enhancement mode power field effect transistors are produced 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 LCD inverter, computer power management and DC to DC converter circuits which need low in-line power loss.

PIN CONFIGURATION



N-Channel MOSFET

FEATURES

- $R_{DS(ON)} \leq 3.2m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 4.2m\Omega @ V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

APPLICATIONS

- Power Management
- DC/DC Converter
- LCD TV & Monitor Display inverter
- CCFL inverter
- Secondary Synchronous Rectification

Ordering Information: ME95N03 (Pb-free)

ME95N03-G (Green product-Halogen free)

Absolute Maximum Ratings (TA=25°C Unless Otherwise Noted)

| Parameter | Symbol | Maximum Ratings | Unit |
|---------------------------------------|-----------------|------------------|------|
| Drain-Source Voltage | V_{DS} | 30 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Continuous Drain Current* | I_D | $T_C=25^\circ C$ | 100 |
| | | $T_C=70^\circ C$ | 80 |
| Pulsed Drain Current | I_{DM} | 400 | A |
| Maximum Power Dissipation | P_D | $T_C=25^\circ C$ | 54.4 |
| | | $T_C=70^\circ C$ | 34.8 |
| Operating Junction Temperature | T_J | -55 to 150 | °C |
| Thermal Resistance-Junction to Case** | $R_{\theta JC}$ | 2.3 | °C/W |

* Calculated continuous current based on maximum allowable junction temperature. Package limitation current is 70A.

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



N-Channel 30V (D-S) MOSFET

Electrical Characteristics (TA=25°C Unless Otherwise Specified)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|----------------------|---|--|-----|------|------|------|
| STATIC | | | | | | |
| V _{(BR)DSS} | Drain-Source Breakdown Voltage | V _{GS} =0V, I _D =250μA | 30 | | | V |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} =V _{GS} , I _D =250μA | 1 | | 3 | V |
| I _{GSS} | Gate Leakage Current | V _{DS} =0V, V _{GS} =±20V | | | ±100 | nA |
| I _{DSS} | Zero Gate Voltage Drain Current | V _{DS} =30V, V _{GS} =0V | | | 1 | μA |
| R _{DS(ON)} | Drain-Source On-State Resistance ^a | V _{GS} =10V, I _D = 20A | | 2.6 | 3.2 | mΩ |
| | | V _{GS} =4.5V, I _D = 20A | | 3.3 | 4.2 | |
| V _{SD} | Diode Forward Voltage | I _S =1.0A, V _{GS} =0V | | 0.6 | 1.2 | V |
| DYNAMIC | | | | | | |
| Q _g | Total Gate Charge | V _{DD} =15V, V _{GS} =10V, I _D =20A | | 134 | | nC |
| Q _g | Total Gate Charge | V _{DD} =15V, V _{GS} =4.5V, I _D =20A | | 68 | | |
| Q _{gs} | Gate-Source Charge | | | 23 | | |
| Q _{gd} | Gate-Drain Charge | | | 33 | | |
| C _{iss} | Input capacitance | V _{DS} =15V, V _{GS} =0V, f=1MHz | | 6217 | | pF |
| C _{oss} | Output Capacitance | | | 855 | | |
| C _{rss} | Reverse Transfer Capacitance | | | 304 | | |
| t _{d(on)} | Turn-On Delay Time | V _{DS} =15V, V _{GS} =10V, R _G =3Ω, R _L =15Ω I _D =1A | | 36 | | ns |
| t _r | Turn-On Rise Time | | | 23 | | |
| t _{d(off)} | Turn-Off Delay Time | | | 126 | | |
| t _f | Turn-Off Fall Time | | | 28 | | |

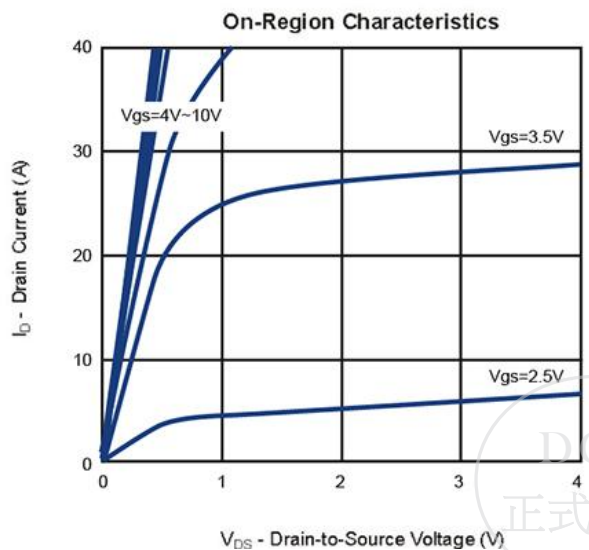
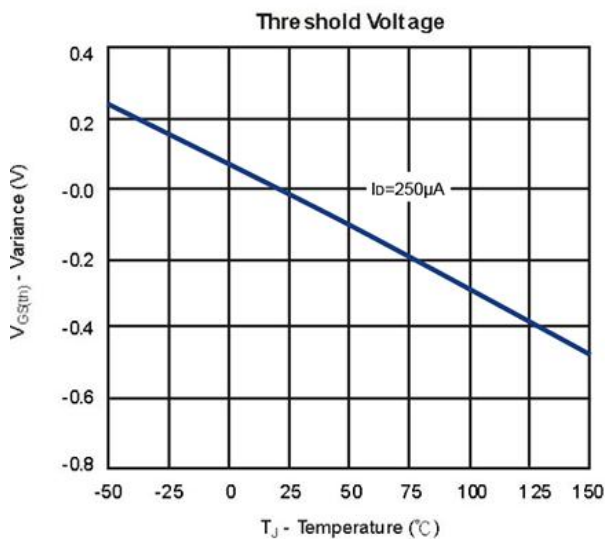
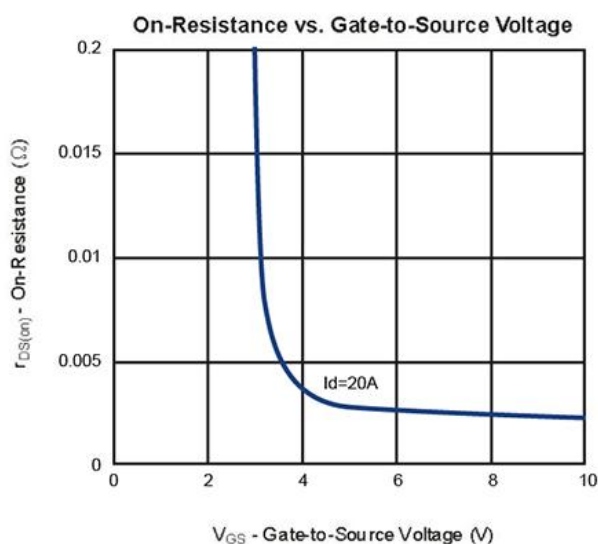
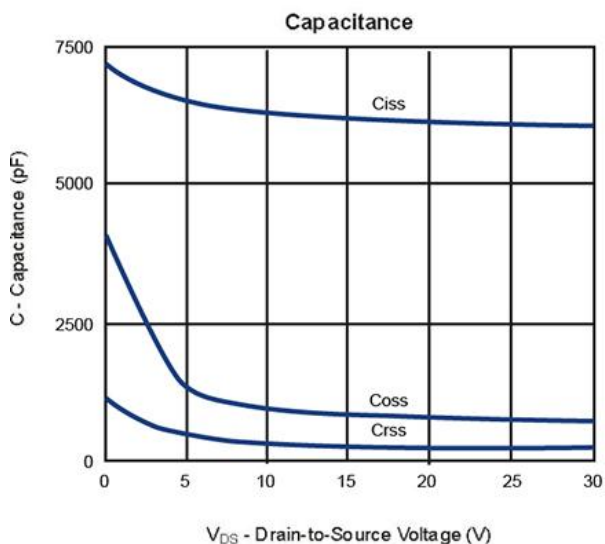
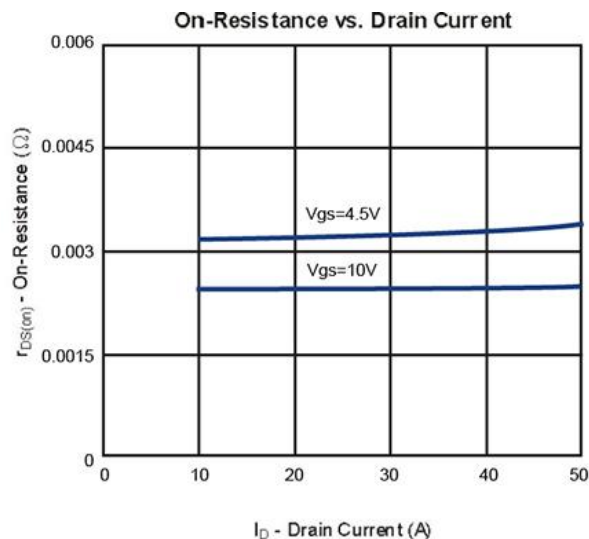
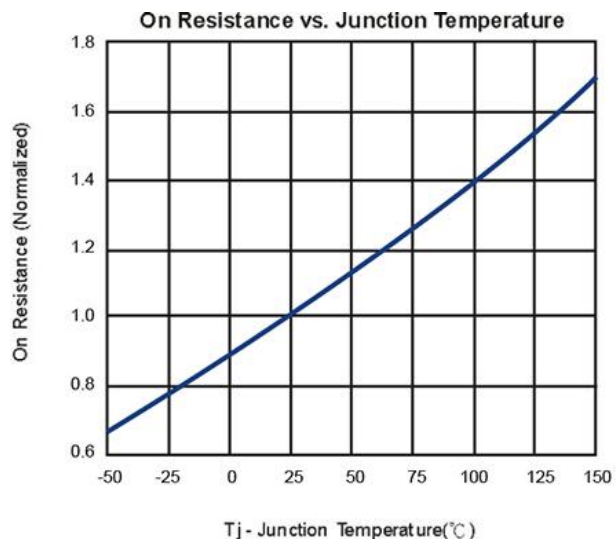
Notes: a. Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%, Guaranteed by design, not subject to production testing.

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

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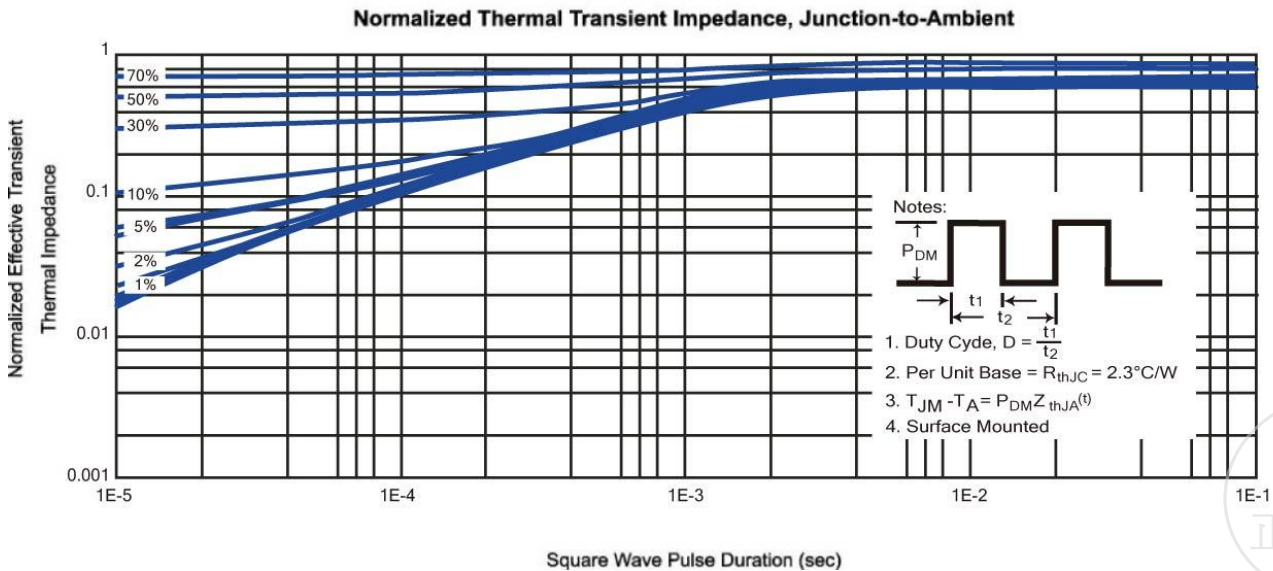
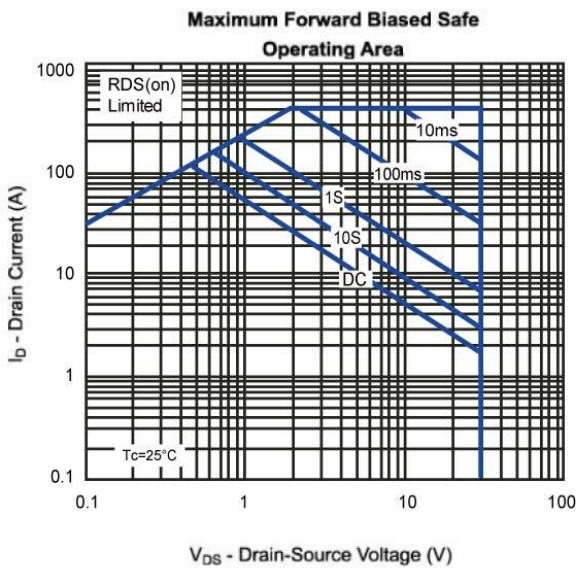
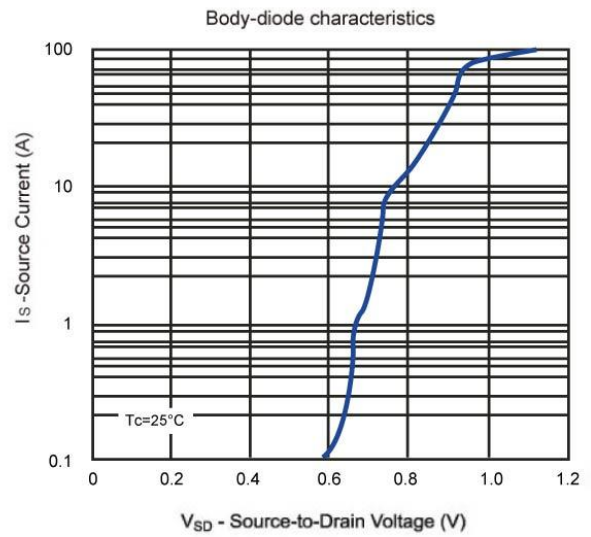
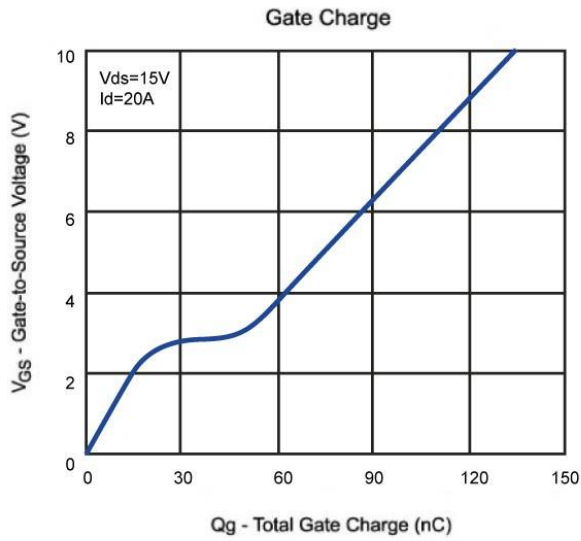
N- Channel 30V (D-S) MOSFET

Typical Characteristics (T_J =25°C Noted)



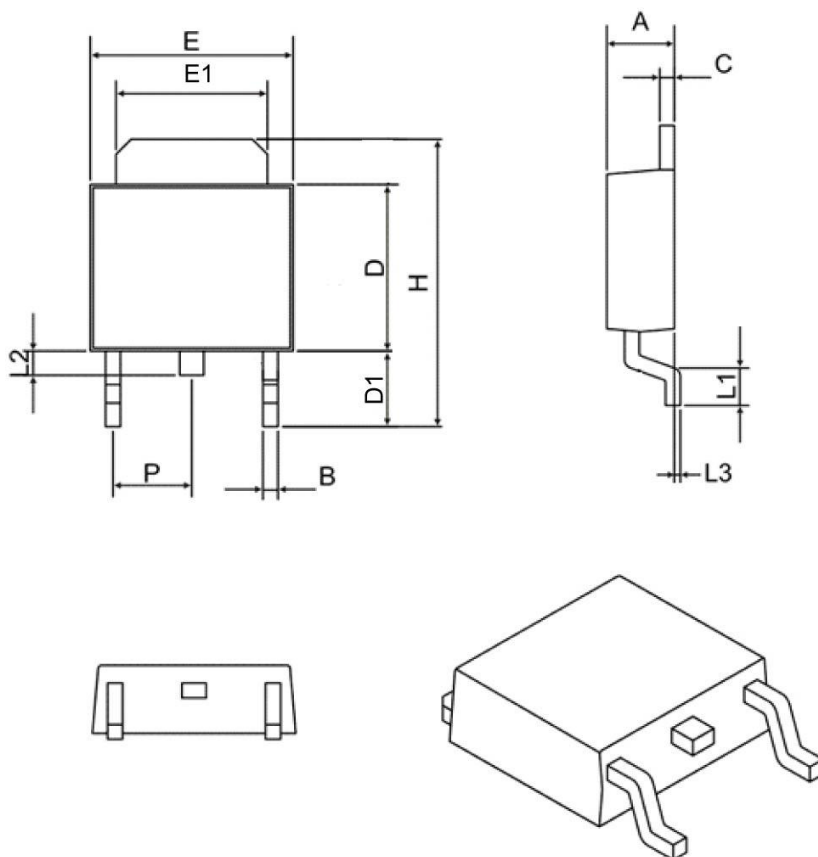
N- Channel 30V (D-S) MOSFET

Typical Characteristics (T_J =25°C Noted)



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TO-252-3L Package Outline



| SYMBOL | MIN | MAX |
|--------|----------|-------|
| A | 2.10 | 2.50 |
| B | 0.40 | 0.90 |
| C | 0.40 | 0.90 |
| D | 5.30 | 6.30 |
| D1 | 2.20 | 2.90 |
| E | 6.30 | 6.75 |
| E1 | 4.80 | 5.50 |
| L1 | 0.90 | 1.80 |
| L2 | 0.50 | 1.10 |
| L3 | 0.00 | 0.20 |
| H | 8.90 | 10.40 |
| P | 2.30 BSC | |



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