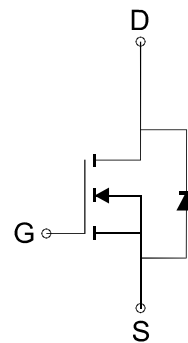
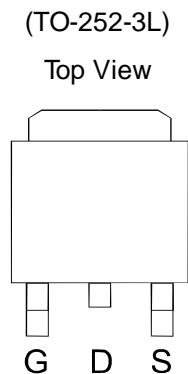


**N-Channel 30V (D-S) MOSFET**

**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	$V_{GS}$	$\pm 20$	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 1in<sup>2</sup> 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
<b>STATIC</b>						
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	30			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1		3	V
I <sub>GSS</sub>	Gate 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> =30V, V <sub>GS</sub> =0V			1	μA
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance <sup>a</sup>	V <sub>GS</sub> =10V, I <sub>D</sub> = 20A		2.6	3.2	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> = 20A		3.3	4.2	
V <sub>SD</sub>	Diode Forward Voltage	I <sub>S</sub> =1.0A, V <sub>GS</sub> =0V		0.6	1.2	V
<b>DYNAMIC</b>						
Q <sub>g</sub>	Total Gate Charge	V <sub>DD</sub> =15V, V <sub>GS</sub> =10V, I <sub>D</sub> =20A		134		nC
Q <sub>g</sub>	Total Gate Charge	V <sub>DD</sub> =15V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =20A		68		
Q <sub>gs</sub>	Gate-Source Charge			23		
Q <sub>gd</sub>	Gate-Drain Charge			33		
C <sub>iss</sub>	Input capacitance	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz		6217		pF
C <sub>oss</sub>	Output Capacitance			855		
C <sub>rss</sub>	Reverse Transfer Capacitance			304		
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DS</sub> =15V, V <sub>GS</sub> =10V, R <sub>G</sub> =3Ω, R <sub>L</sub> =15Ω I <sub>D</sub> =1A		36		ns
t <sub>r</sub>	Turn-On Rise Time			23		
t <sub>d(off)</sub>	Turn-Off Delay Time			126		
t <sub>f</sub>	Turn-Off Fall Time			28		

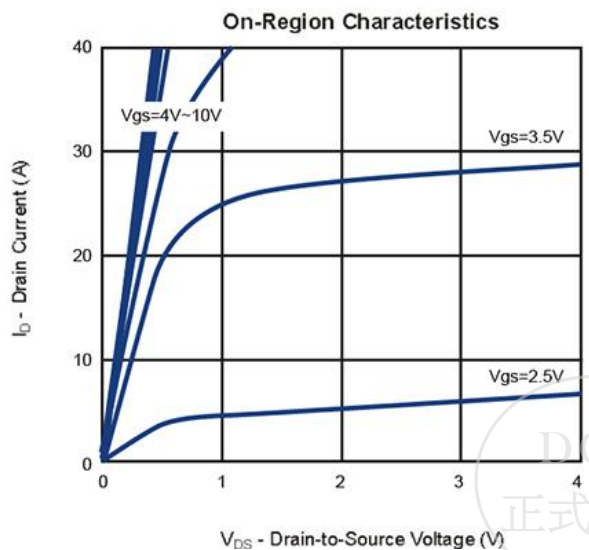
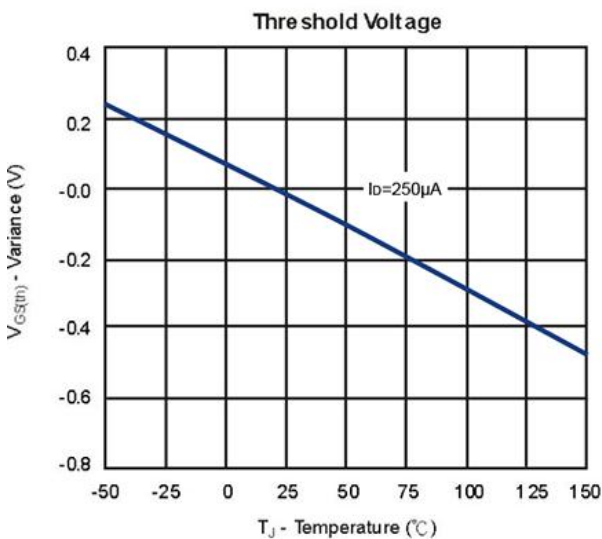
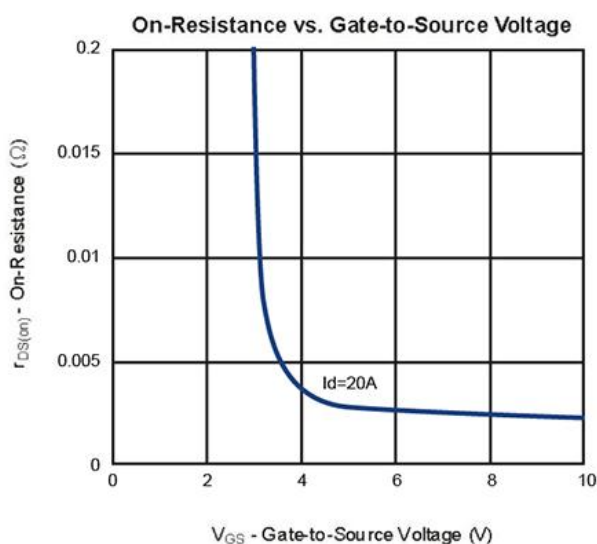
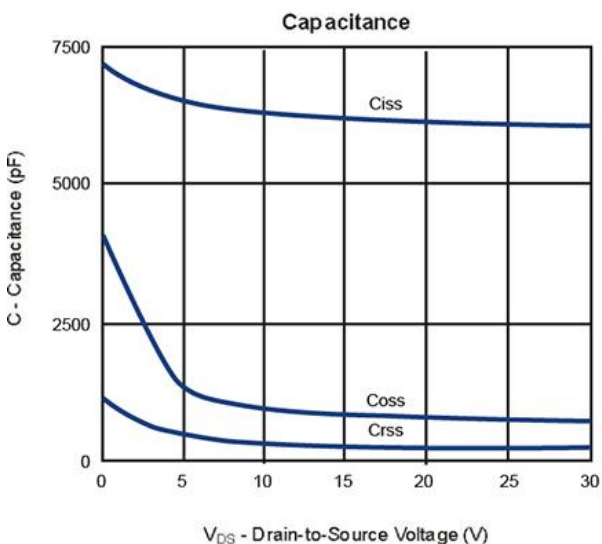
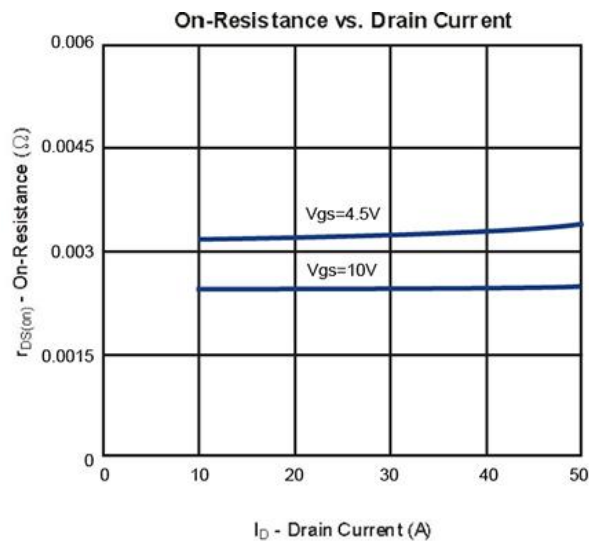
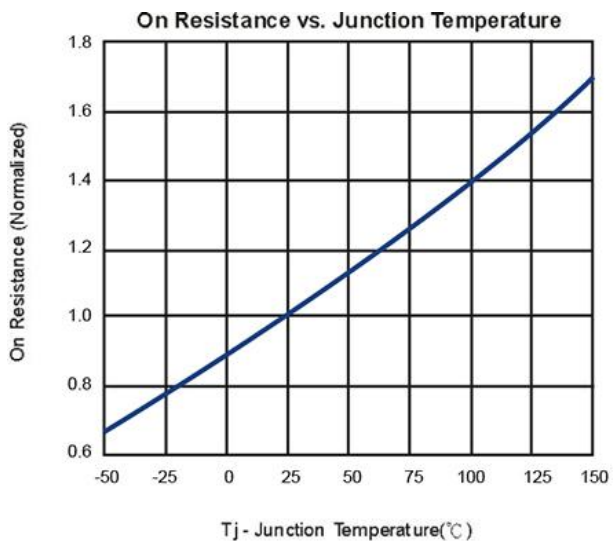
Notes: a. Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%, Guaranteed by design, not subject to production testing.

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

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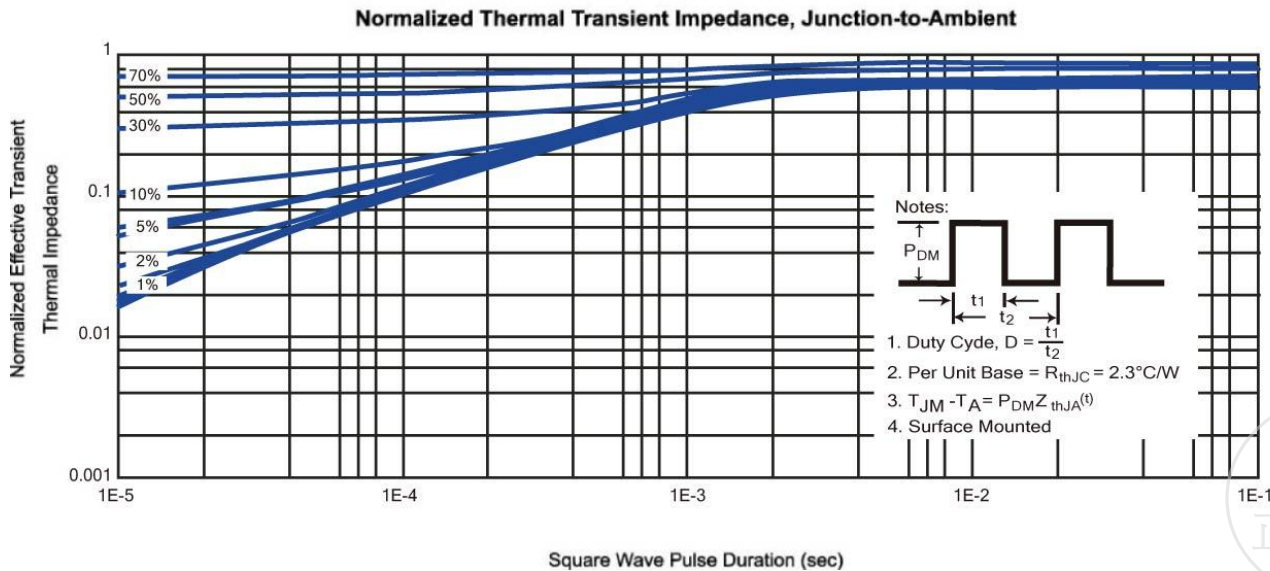
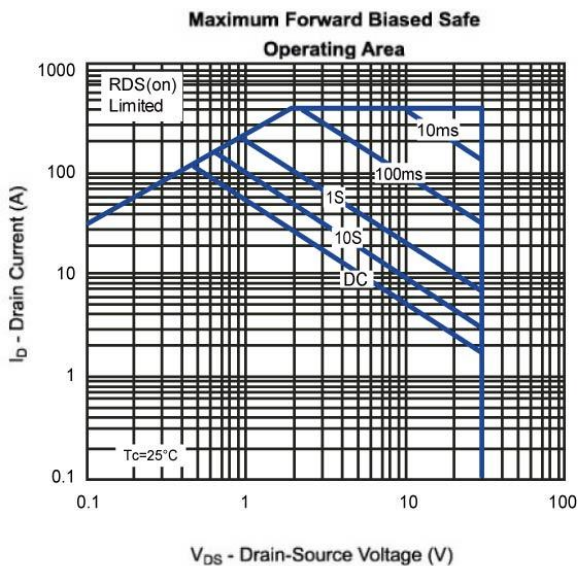
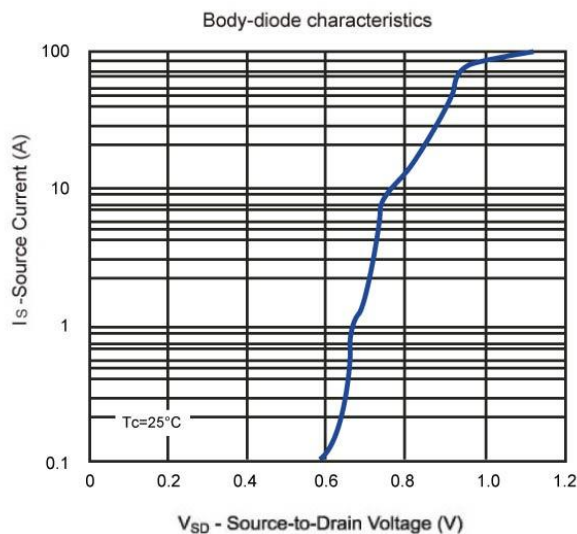
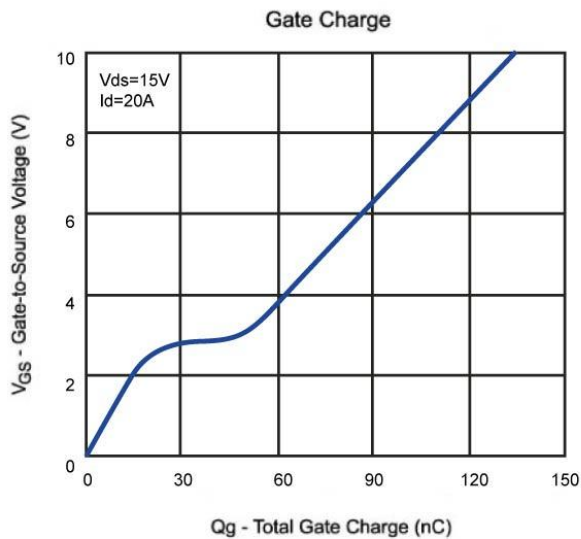
**N- Channel 30V (D-S) MOSFET**

**Typical Characteristics (T<sub>J</sub> =25°C Noted)**



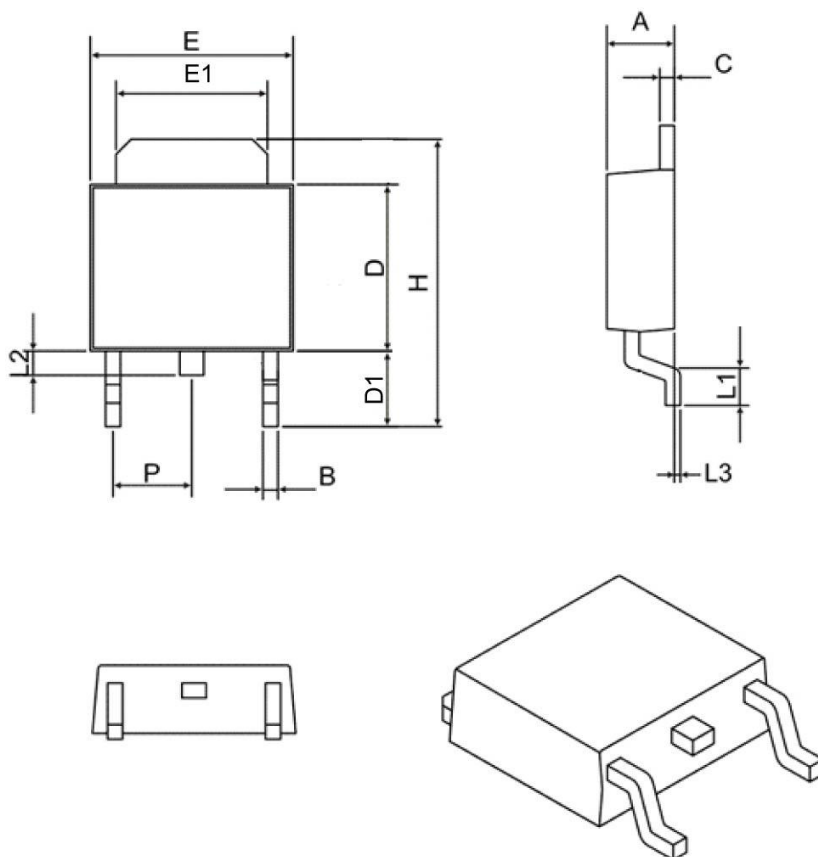
**N- Channel 30V (D-S) MOSFET**

Typical Characteristics (T<sub>J</sub> =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	

