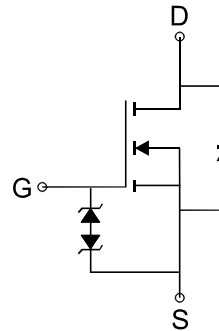
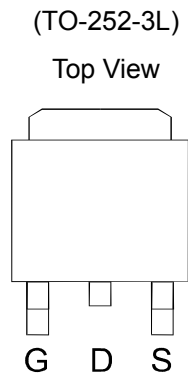


N-Channel 30V(D-S) MOSFET, ESD Protected

GENERAL DESCRIPTION

The ME90N03 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 cellular phone and notebook computer power management and other battery powered circuits where high-side switching , and low in-line power loss are needed in a very small outline surface mount package.

PIN CONFIGURATION



FEATURES

- $R_{DS(ON)} \leq 4.8m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 9m\Omega @ V_{GS}=4.5V$
- ESD Protected
- 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
- Battery Powered System
- DC/DC Converter
- Load Switch

Ordering Information: ME90N03 (Pb-free)
ME90N03-G (Green product-Halogen free)

Absolute Maximum Ratings (Tc=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	$T_C=25^\circ C$	74
		$T_C=70^\circ C$	59
Pulsed Drain Current	I_{DM}	296	A
Maximum Power Dissipation	P_D	$T_C=25^\circ C$	42
		$T_C=70^\circ C$	27
Operating Junction Temperature	T_J	-55 to 150	$^\circ C$
Thermal Resistance-Junction to Ambient*	$R_{\theta JC}$	3	$^\circ C/W$

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



N-Channel 30V(D-S) MOSFET, ESD Protected
Electrical Characteristics ($T_c = 25^\circ\text{C}$ Unless Otherwise Specified)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV _{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\ \mu A$	30			V
V _{GS(th)}	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\ \mu A$	1.2		3	V
I _{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 16V$			± 10	μA
I _{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V$			1	μA
R _{DS(on)}	Drain-Source On-State Resistance ^a	$V_{GS}=10V, I_D=30A$		4	4.8	m Ω
		$V_{GS}=4.5V, I_D=15A$		7	9	
V _{SD}	Diode Forward Voltage	$I_S=2.7A, V_{GS}=0V$		0.8	1.2	V
DYNAMIC						
Q _g	Total Gate Charge(10V)	$V_{DS}=15V, V_{GS}=10V, I_D=17A$		53		nC
Q _g	Total Gate Charge(4.5V)			27		
Q _{gs}	Gate-Source Charge	$V_{DS}=15V, V_{GS}=4.5V, I_D=17A$		11		
Q _{gd}	Gate-Drain Charge			14		
C _{iss}	Input capacitance			2400		pF
C _{oss}	Output Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$		350		
C _{rss}	Reverse Transfer Capacitance			110		
R _g	Gate-Resistance	$V_{DS}=0V, V_{GS}=0V, f=1MHz$		0.9		Ω
t _{d(on)}	Turn-On Delay Time	$V_{DD}=15V, R_L=15\ \Omega$ $I_D=1A, V_{GEN}=10V$ $R_G=6\ \Omega$		23		ns
t _r	Turn-On Rise Time			17		
t _{d(off)}	Turn-Off Delay Time			76		
t _f	Turn-Off Fall Time			15		

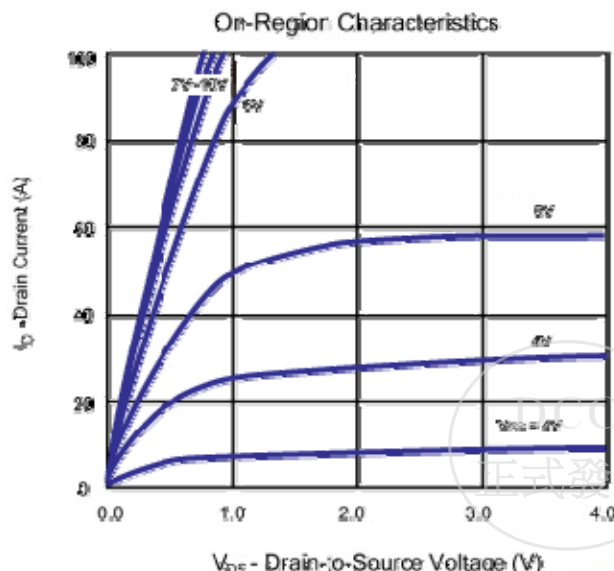
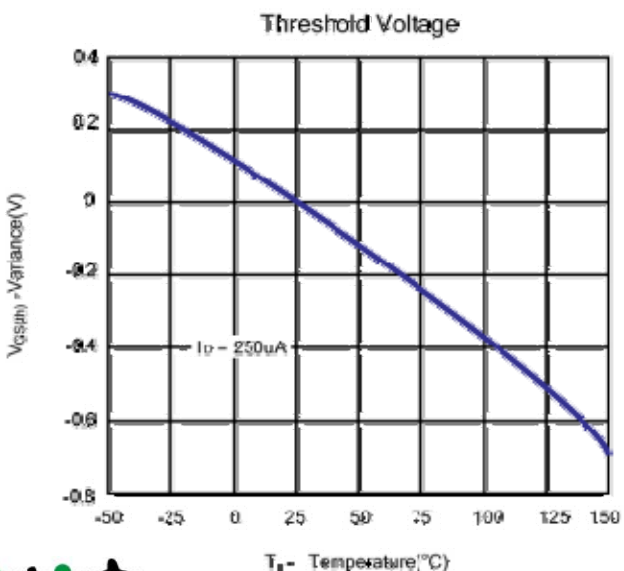
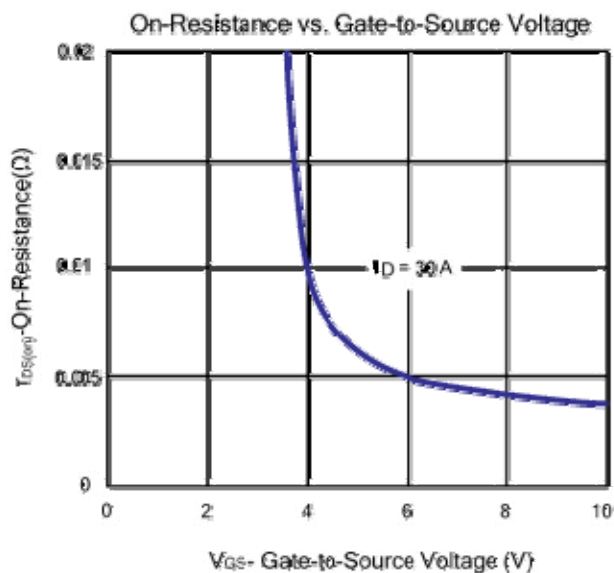
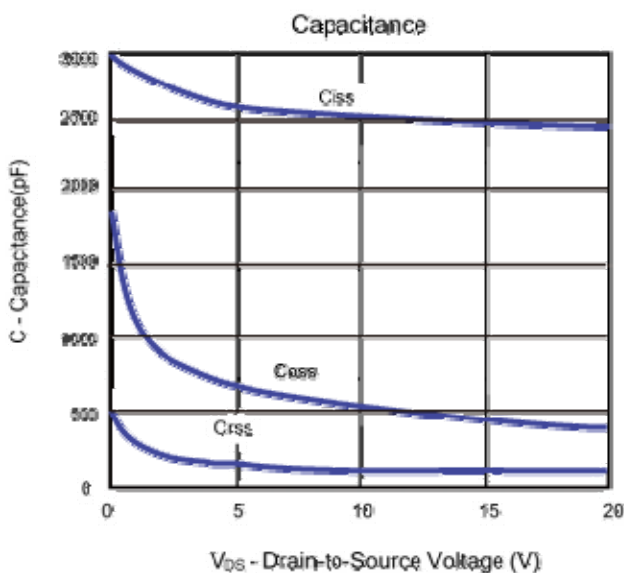
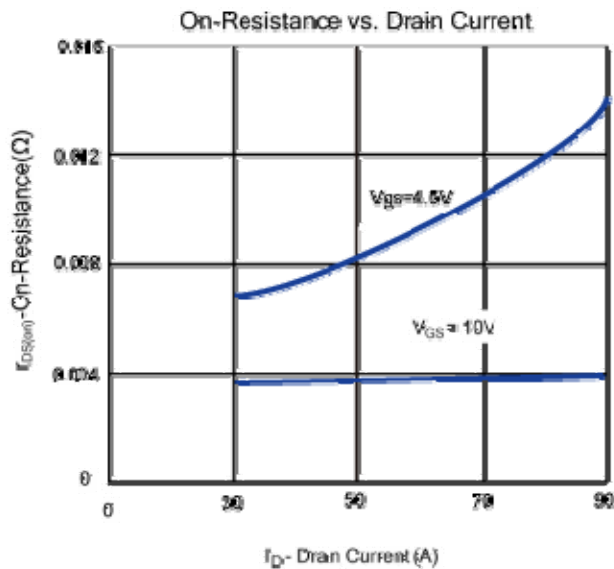
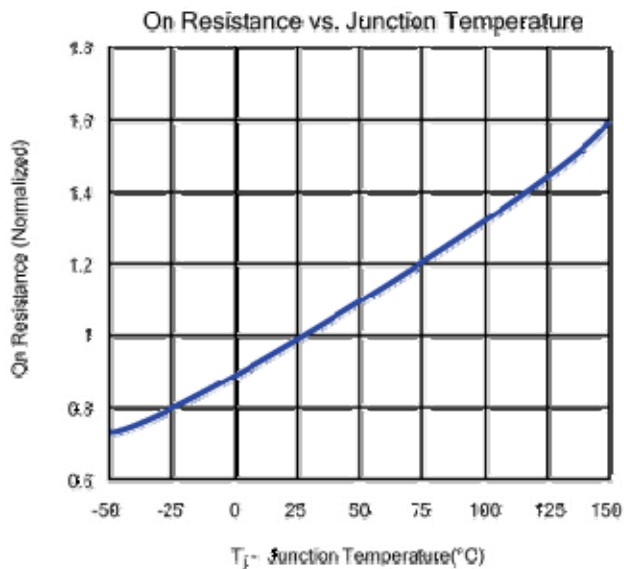
 Notes: a. Pulse test: pulse width $\leq 300\ \mu s$, duty cycle $\leq 2\%$, Guaranteed by design, not subject to production testing.

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



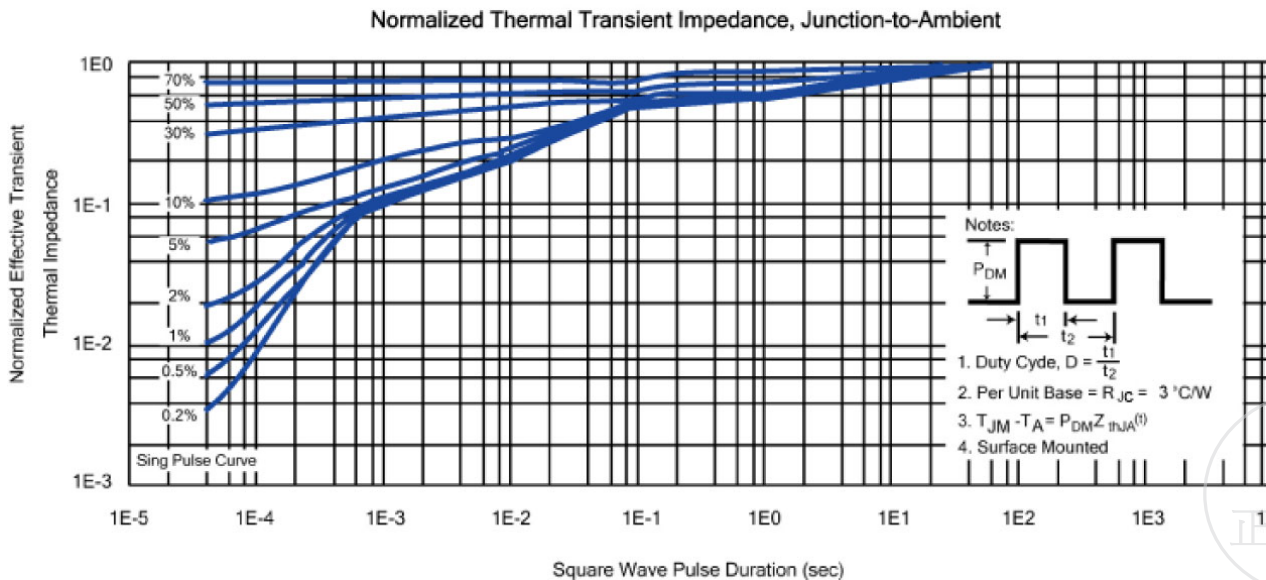
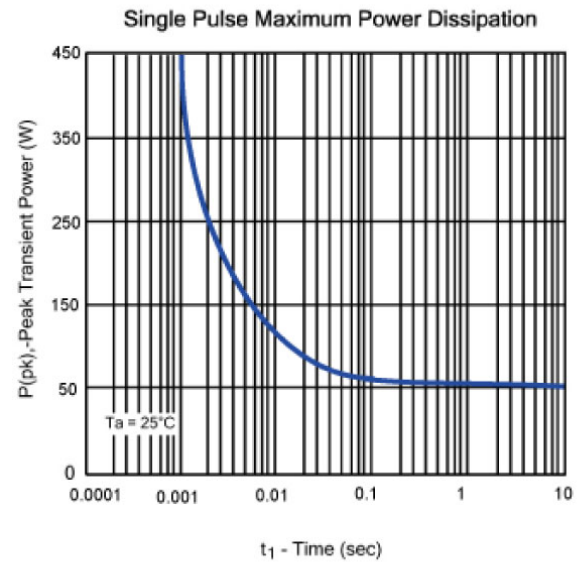
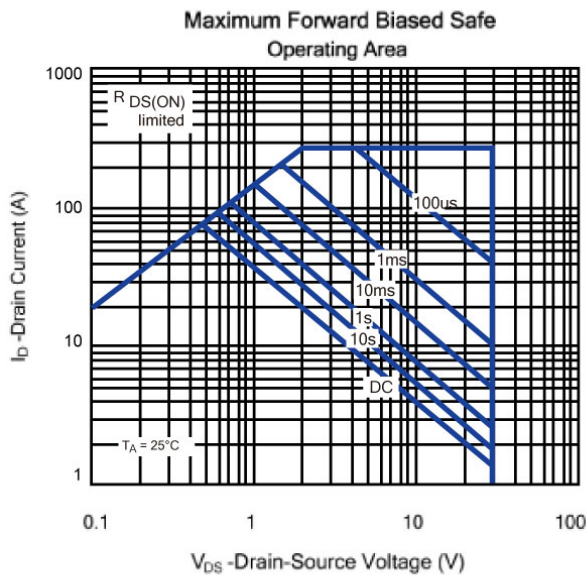
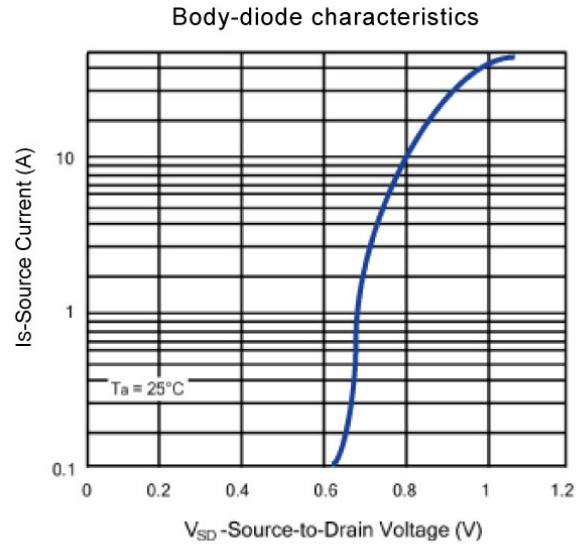
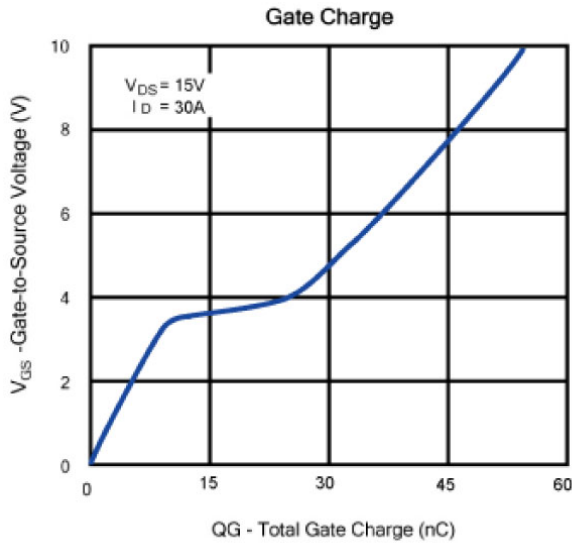
N-Channel 30V(D-S) MOSFET, ESD Protected

Typical Characteristics (T_J = 25°C Noted)

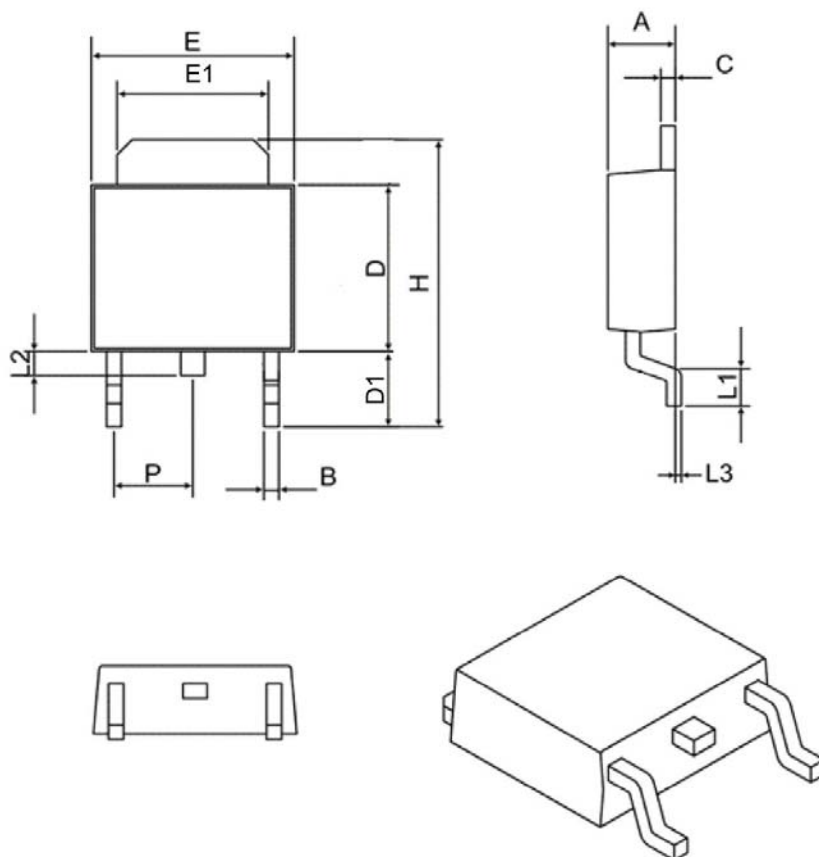


N-Channel 30V(D-S) MOSFET, ESD Protected

Typical Characteristics (T_J = 25°C Noted)



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	

