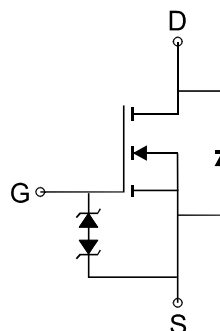
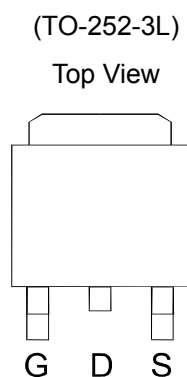


N-Channel 30V(D-S) MOSFET, ESD Protected

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 (T_c=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	T _c =25°C	I _D	74	A
	T _c =70°C		59	
Pulsed Drain Current		I _{DM}	296	A
Maximum Power Dissipation	T _c =25°C	P _D	42	W
	T _c =70°C		27	
Operating Junction Temperature		T _J	-55 to 150	°C
Thermal Resistance-Junction to Ambient*		R _{θJC}	3	°C/W

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

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N-Channel 30V(D-S) MOSFET, ESD Protected
Electrical Characteristics (T_c =25°C Unless Otherwise Specified)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250 μ A	1.2		3	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} = $\pm$ 16V			$\pm$ 10	μ A
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V			1	μ A
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)	V _{DS} =15V, V _{GS} =4.5V, I _D =17A		27		
Q _{gs}	Gate-Source Charge			11		
Q _{gd}	Gate-Drain Charge			14		
C _{iss}	Input capacitance	V _{DS} =15V, V _{GS} =0V, f=1.0MHz		2400		pF
C _{oss}	Output Capacitance			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 Ω I _D =1A, V _{GEN} =10V R _G =6 Ω		23		ns
t _r	Turn-On Rise Time			17		
t _{d(off)}	Turn-Off Delay Time			76		
t _f	Turn-Off Fall Time			15		

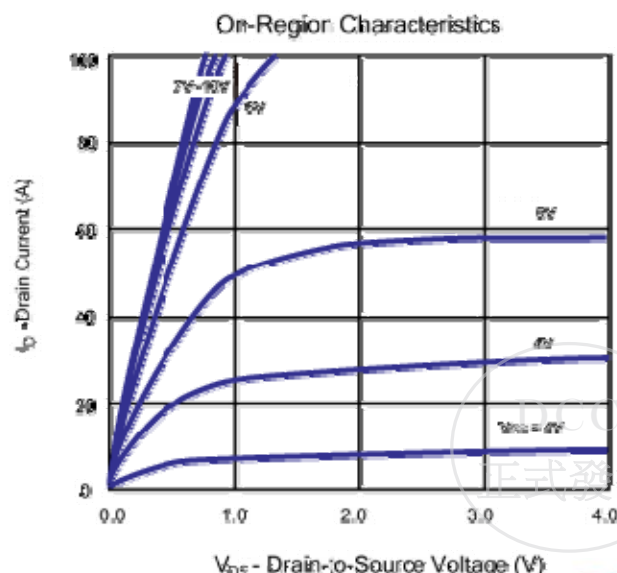
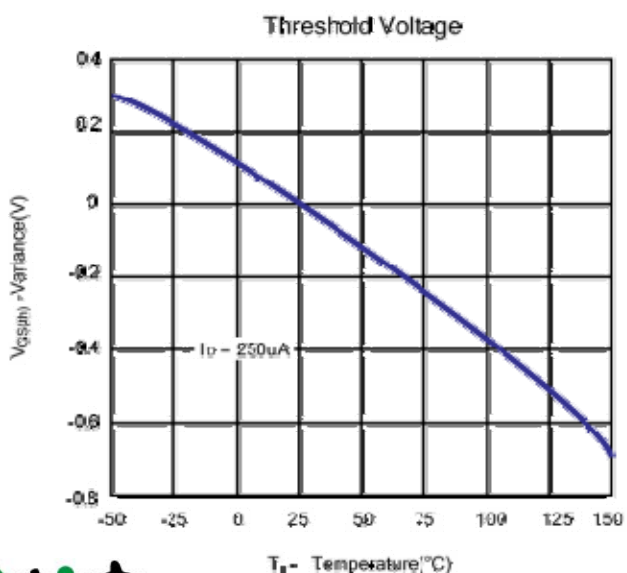
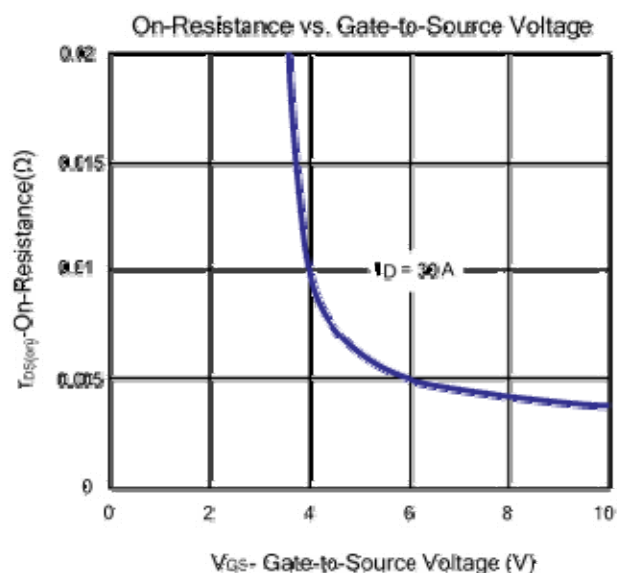
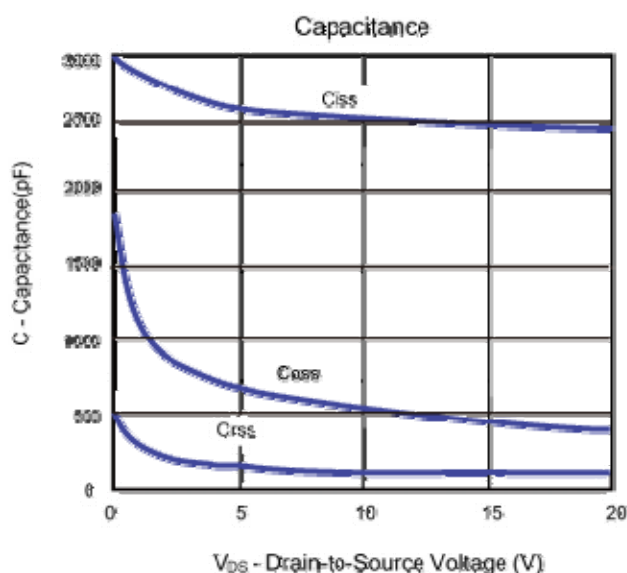
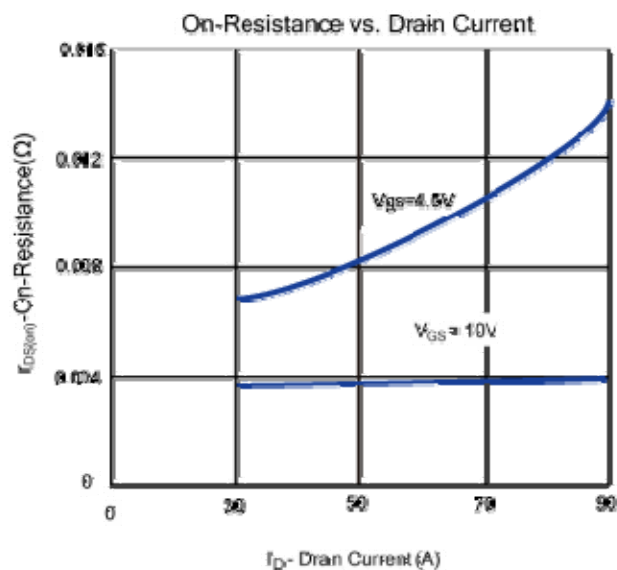
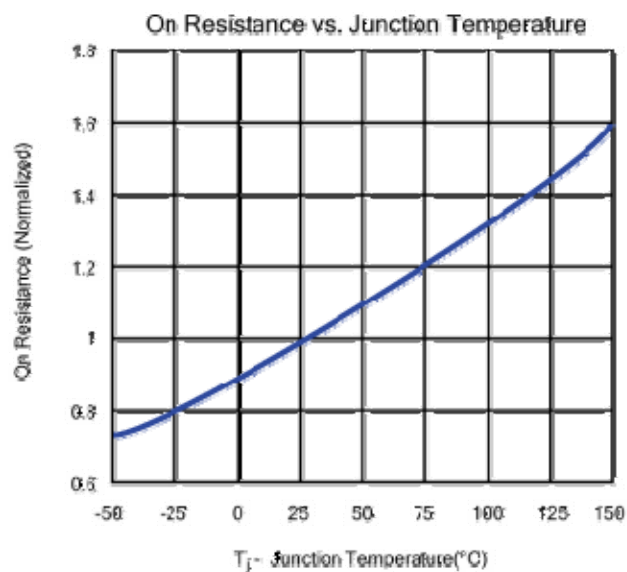
Notes: a. Pulse test: pulse width $\leq$ 300 μ s, duty cycle $\leq$ 2%, Guaranteed by design, not subject to production testing.

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



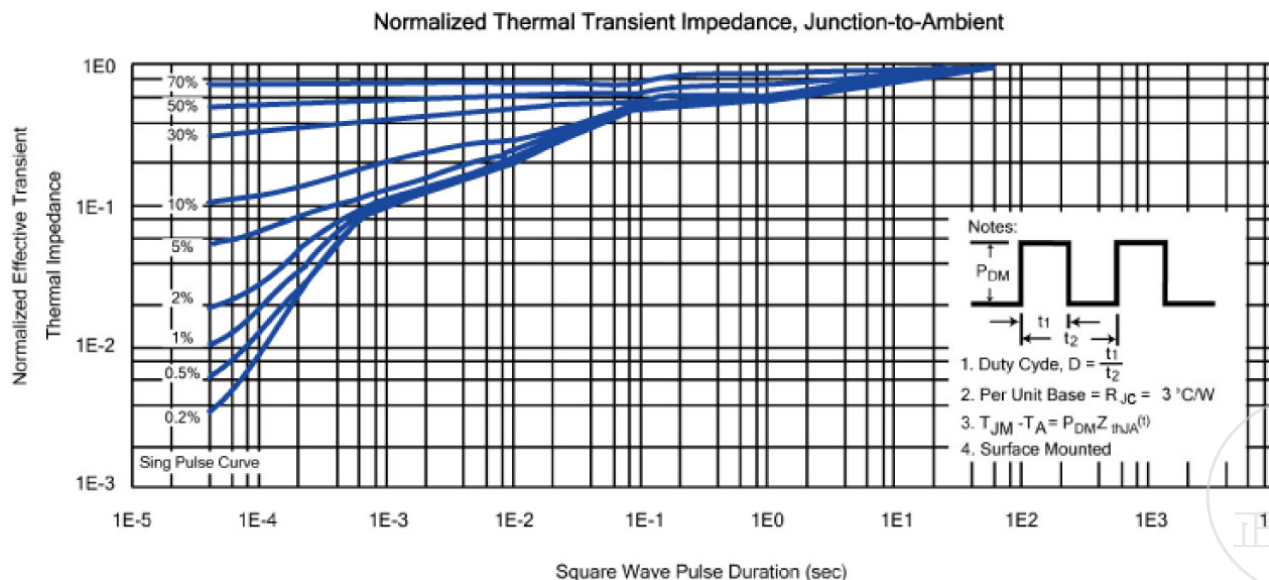
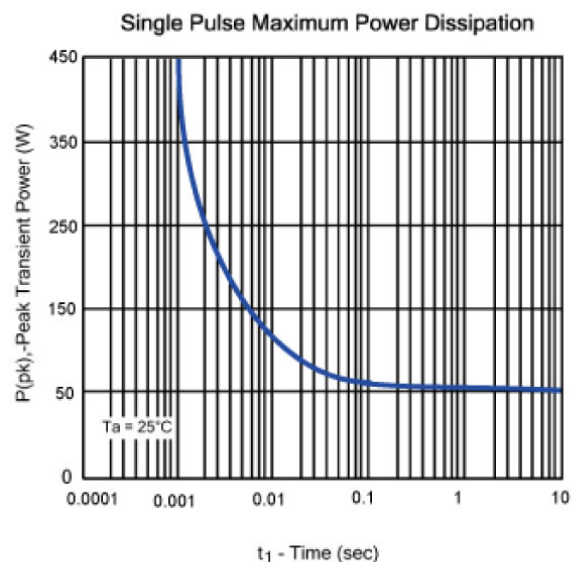
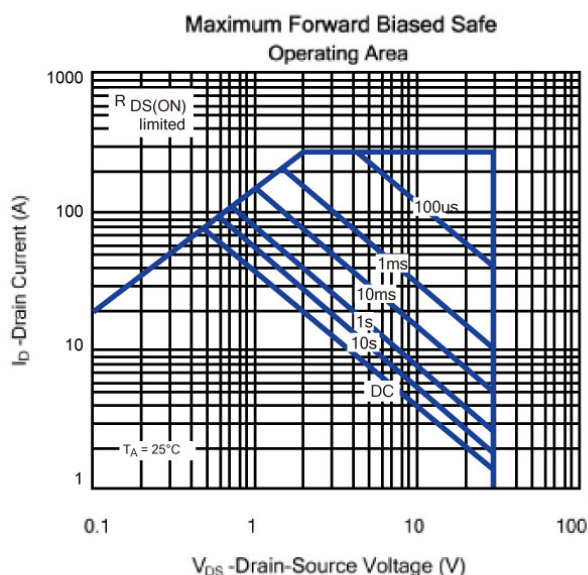
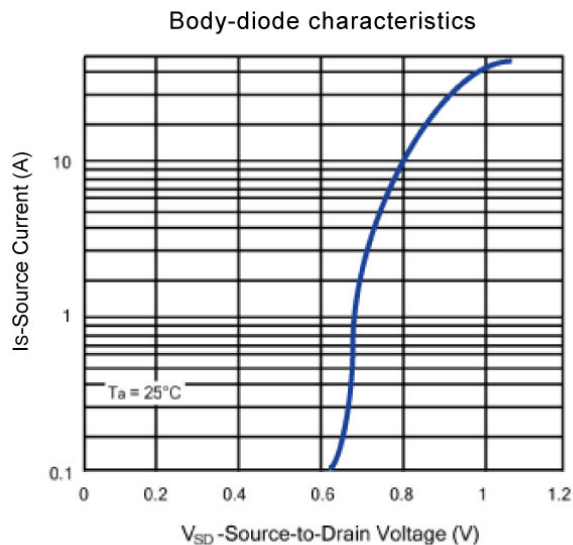
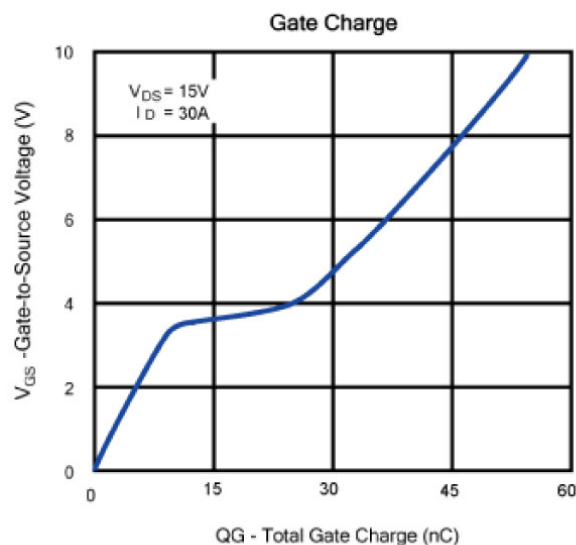
N-Channel 30V(D-S) MOSFET, ESD Protected

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

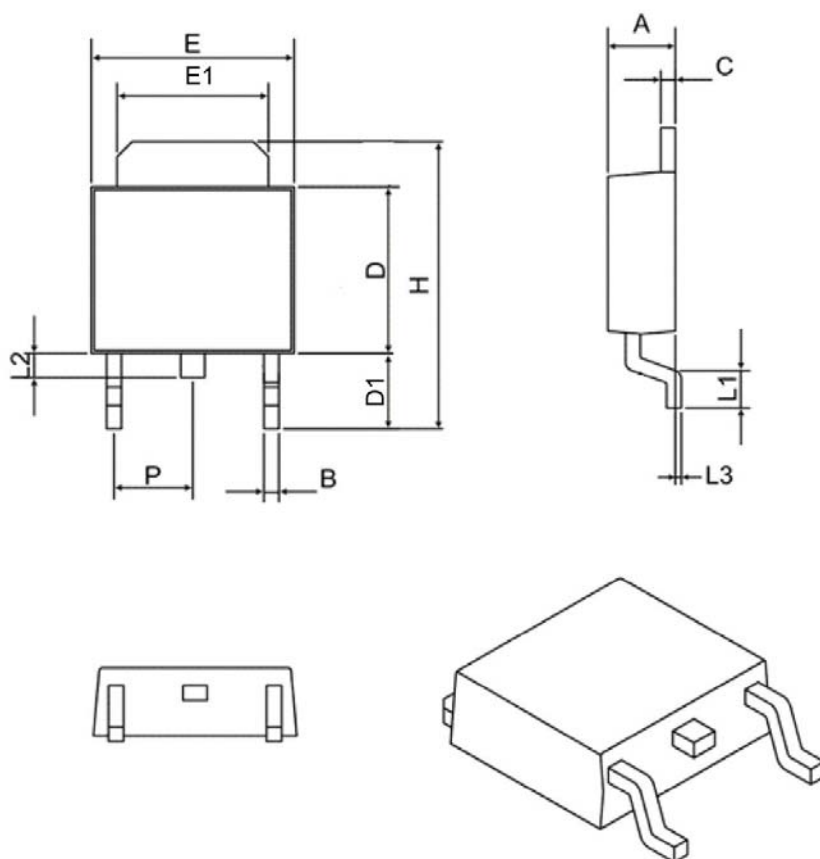


N-Channel 30V(D-S) MOSFET, ESD Protected

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	

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