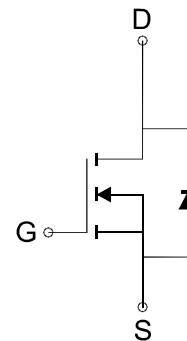
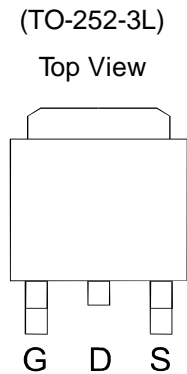


N- Channel 150V (D-S) MOSFET

GENERAL DESCRIPTION

The ME12N15 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



N-Channel MOSFET

Ordering Information: ME12N15 (Pb-free)

ME12N15-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}	150	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	T _c =25°C	13.6
		T _c =70°C	10.9
Pulsed Drain Current	I _{DM}	54	A
Maximum Power Dissipation	P _D	T _c =25°C	44.6
		T _c =70°C	28.5
Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C
Thermal Resistance-Junction to Case*	R _{θJC}	2.8	°C/W

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

FEATURES

- R_{DS(ON)} ≤ 150mΩ@V_{GS}=10V
- R_{DS(ON)} ≤ 250mΩ@V_{GS}=10V
- 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
- Load Switch

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N- Channel 150V (D-S) MOSFET
Electrical Characteristics (T_J=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 μA	150			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250 μA	1		3	V
I _{GSS}	Gate-Body Leakage	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =120V, V _{GS} =0V			1	μA
R _{DS(ON)}	Drain-Source On-Resistance*	V _{GS} =10V, I _D =8A			150	mΩ
		V _{GS} =4.5V, I _D =5A			250	
V _{SD}	Diode Forward Voltage *	I _S =8A, V _{GS} =0V			1.3	V
DYNAMIC						
Q _g	Total Gate Charge	V _{DD} =120V, V _{GS} =10V, I _D =8A		31.8		nC
Q _{gs}	Gate-Source Charge			5.8		
Q _{gd}	Gate-Drain Charge			9.2		
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz		839		pF
C _{oss}	Output Capacitance			78		
C _{rss}	Reverse Transfer Capacitance			29		
t _{d(on)}	Turn-On Delay Time	V _{GS} =10V, V _{DD} =75V, R _G =1Ω, I _D =8A		13.6		ns
t _r	Turn-On Rise Time			6.2		
t _{d(off)}	Turn-Off Delay Time			36.7		
t _f	Turn-Off Fall Time			3.2		

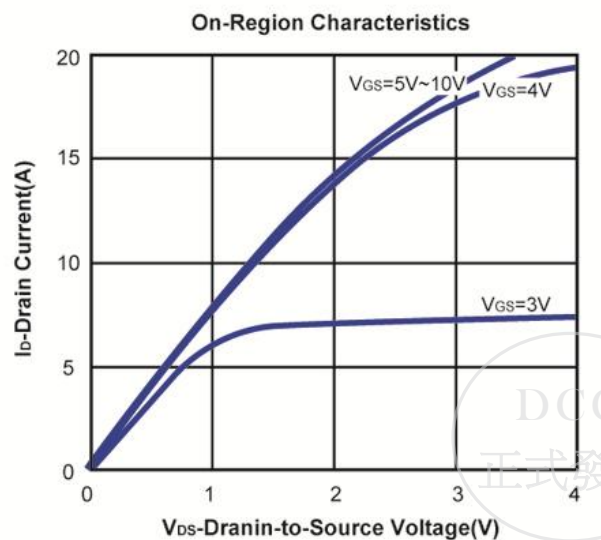
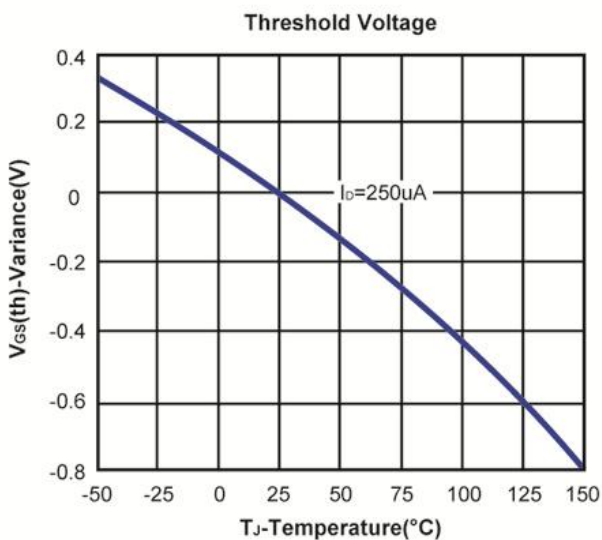
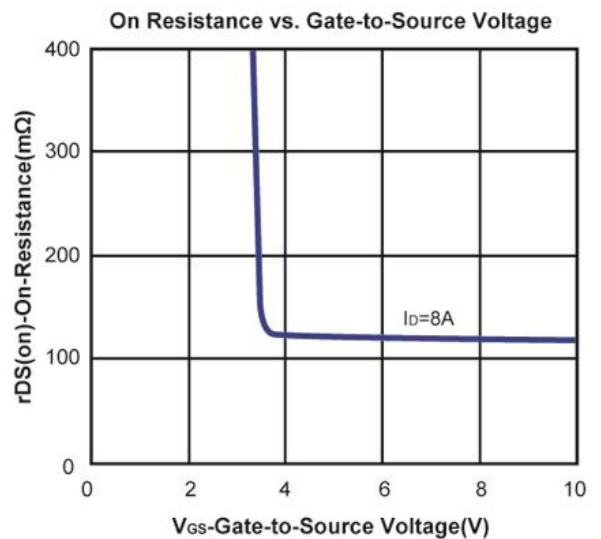
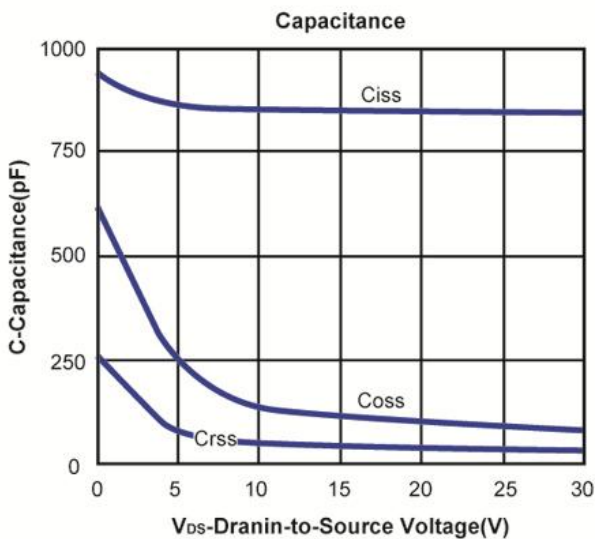
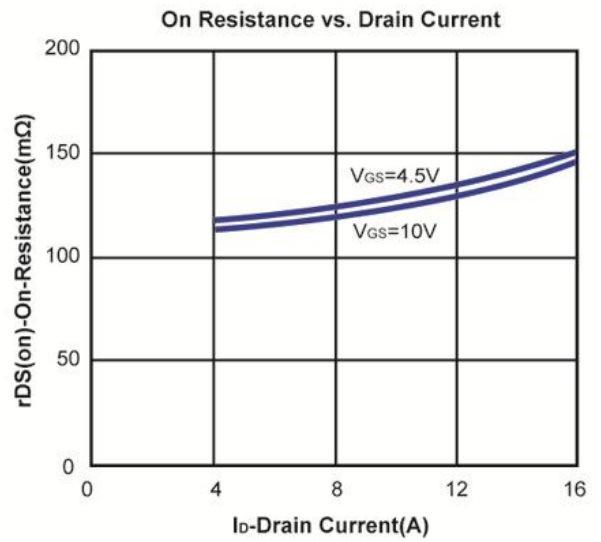
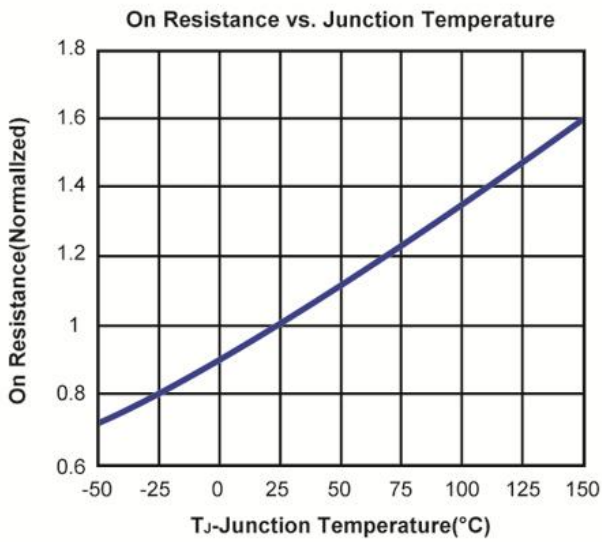
Notes: a. pulse test: pulse width ≤ 300us, duty cycle ≤ 2%, Guaranteed by design, not subject to production testing.

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

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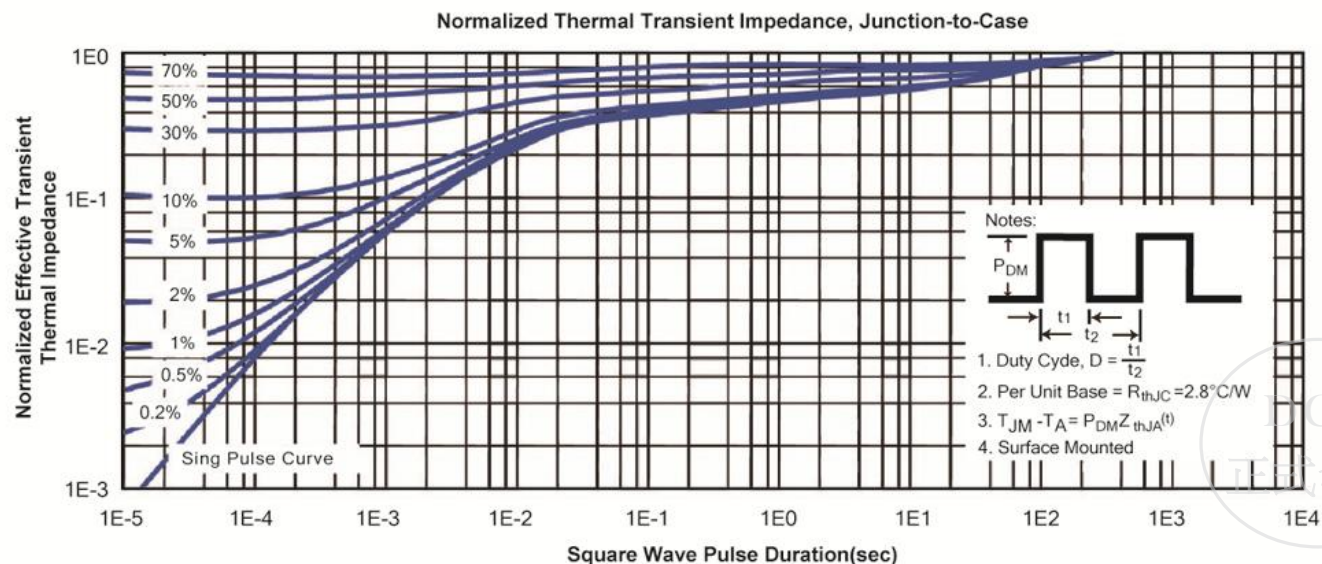
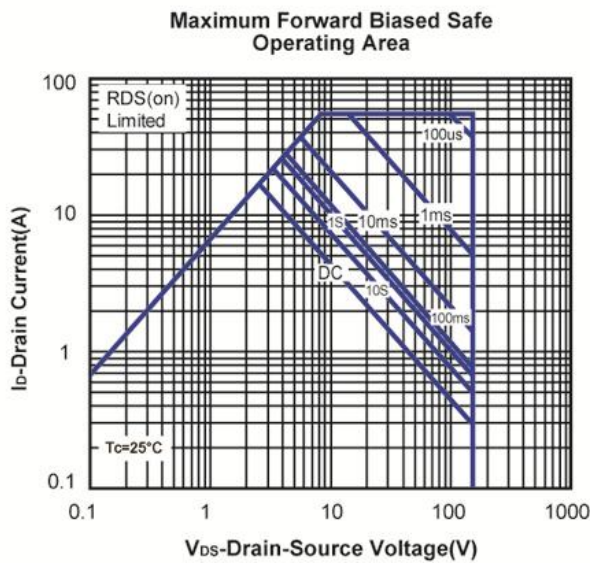
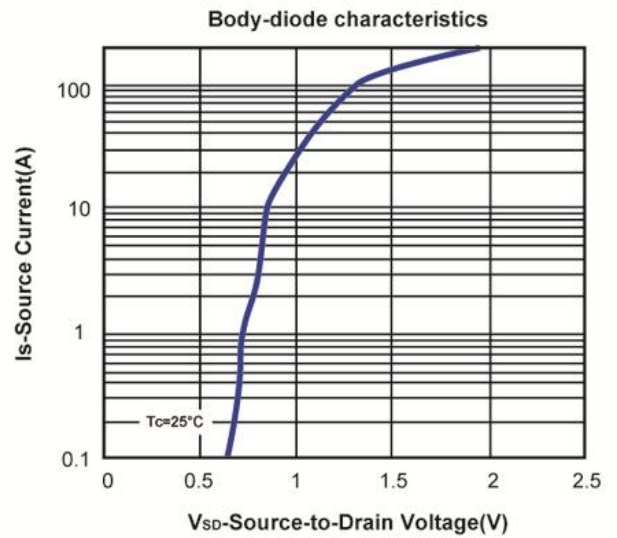
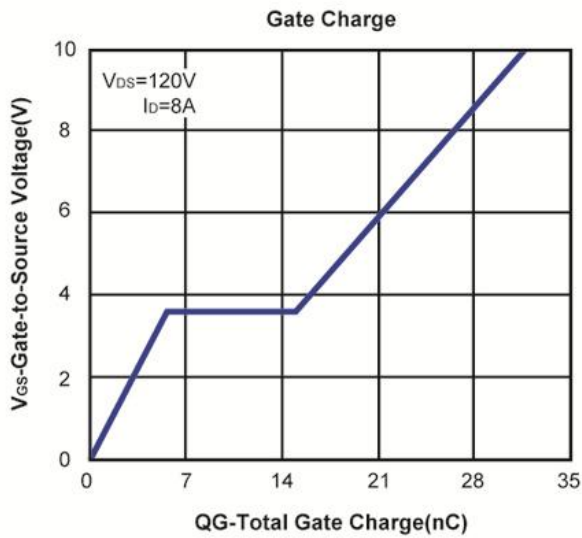
N- Channel 150V (D-S) MOSFET

Typical Characteristics (T_J =25°C Noted)

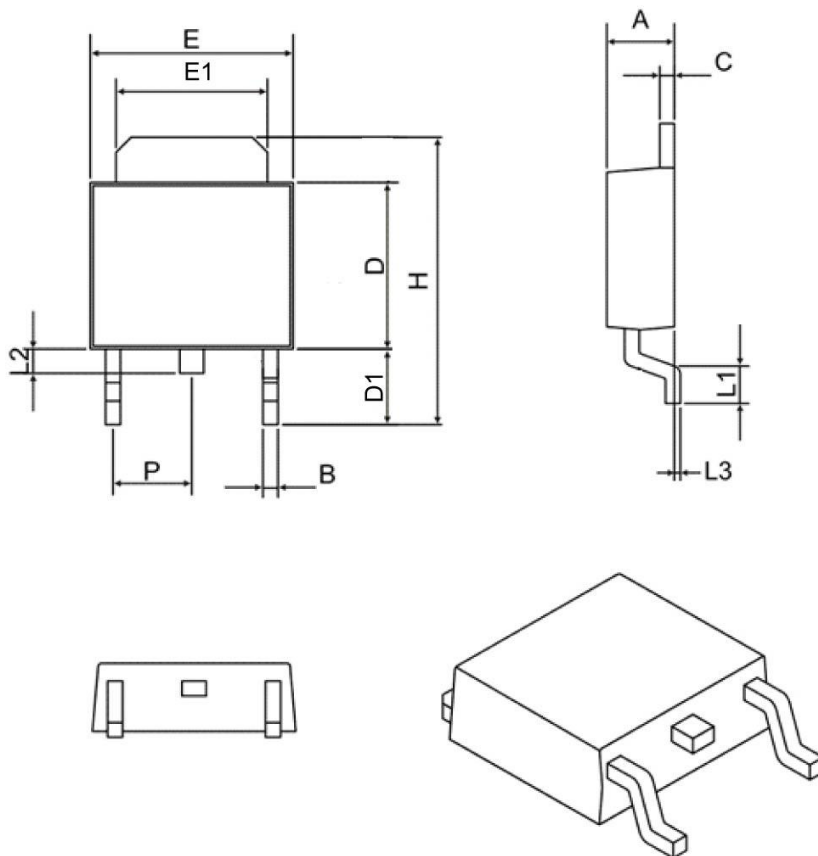


N- Channel 150V (D-S) MOSFET

Typical Characteristics (T_J =25°C Noted)



TO-252 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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