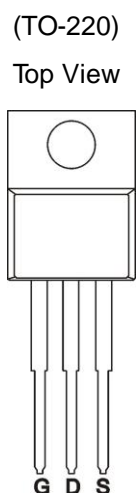


**N-Channel 150-V (D-S) MOSFET**

**GENERAL DESCRIPTION**

The ME100N15T-G 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**

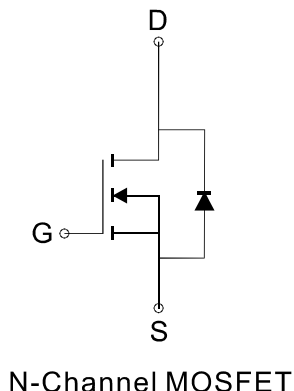


**FEATURES**

- $R_{DS(ON)} \leq 13.6m\Omega @ V_{GS}=10V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

**APPLICATIONS**

- Power Management in Note book
- DC/DC Converter
- Load Switch
- LCD Display inverter



Ordering Information: ME100N15T-G (Green product-Halogen free)

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DSS}$	150	V
Gate-Source Voltage	$V_{GSS}$	±20	V
Continuous Drain Current*	$I_D$	Tc=25°C	72.3
		Tc=70°C	57.8
Single pulse Avalanche Energy L=0.5mH	$I_{AS}$	50	A
Single pulse Avalanche Energy L=0.5mH	$E_{AS}$	625	mJ
Pulsed Drain Current <sup>a</sup>	$I_{DM}$	289	A
Power Dissipation	$P_D$	Tc=25°C	113.6
		Tc=70°C	72.7
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 175	°C
Thermal Resistance-Junction to Case**	$R_{\theta JC}$	1.1	°C/W

\* Calculated continuous current based on maximum allowable junction temperature. Package limitation current is 120A.

\*\* The device mounted on 1in<sup>2</sup> FR4 board with 2 oz copper.

**N-Channel 150-V (D-S) MOSFET**
**Electrical Characteristics (Tc =25°C Unless Otherwise Specified)**

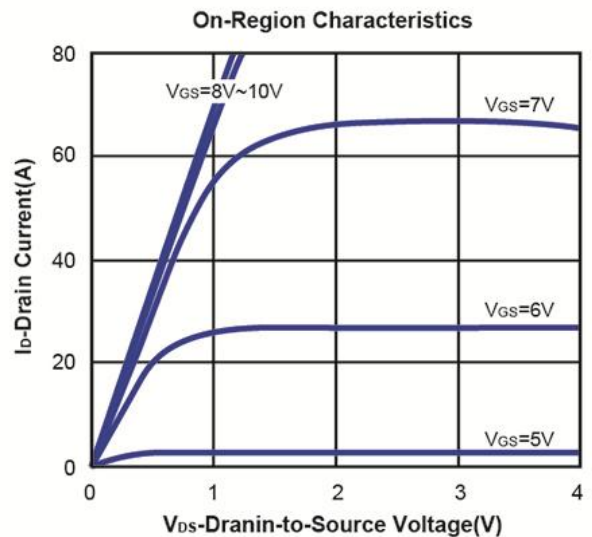
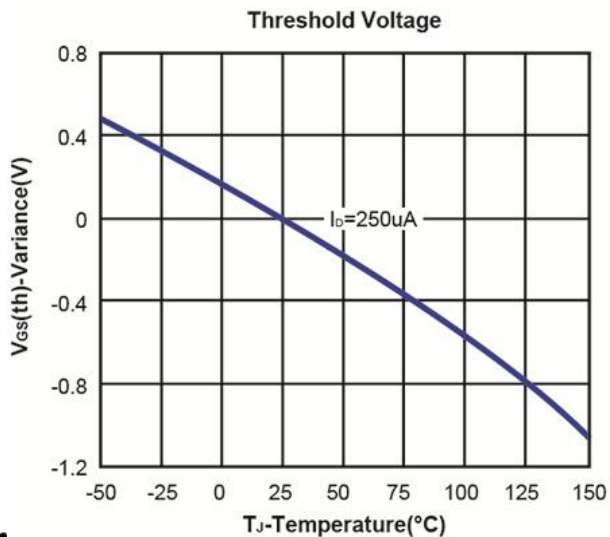
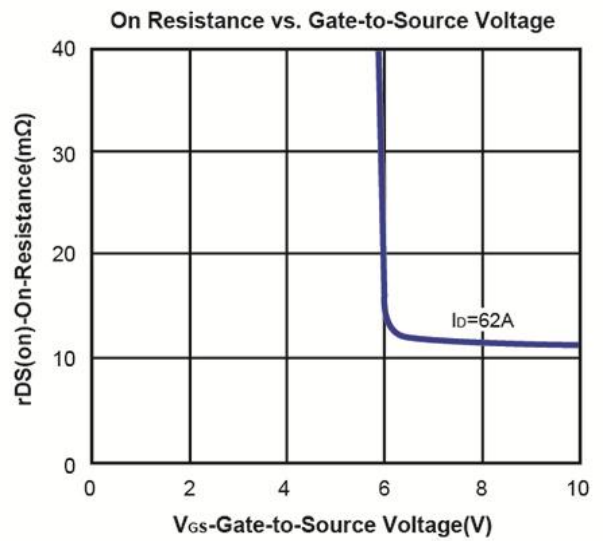
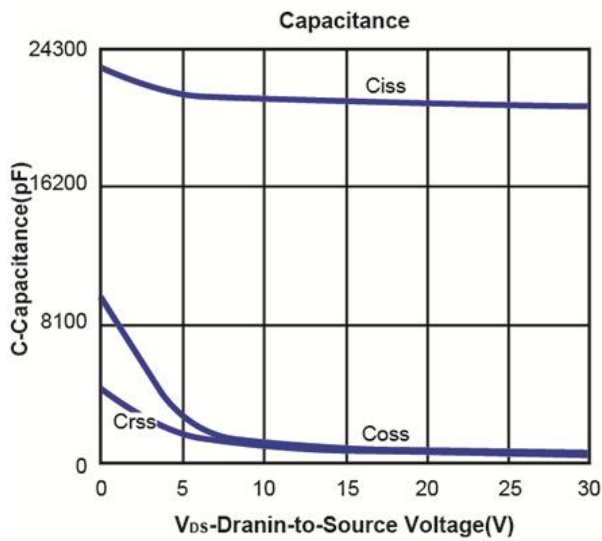
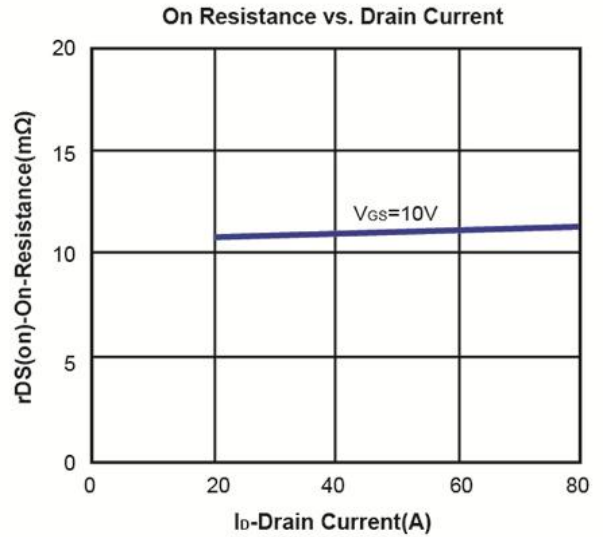
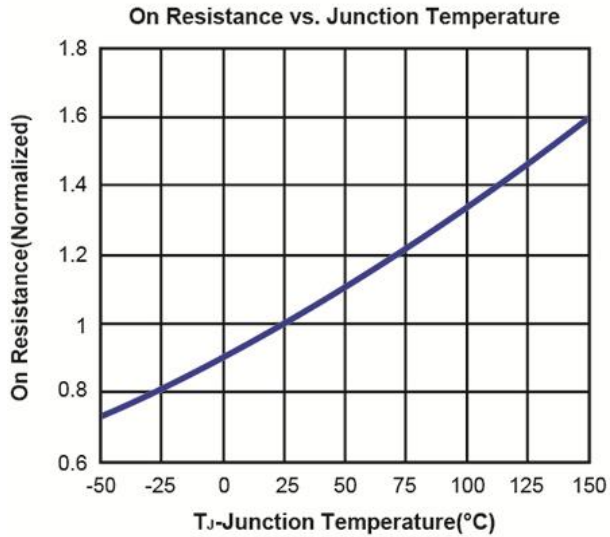
Symbol	Parameter	Limit	Min	Typ	Max	Unit
<b>STATIC</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250 μA	150			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μA	2.0		4.0	V
I <sub>GSS</sub>	Gate-Body Leakage	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> =150V, V <sub>GS</sub> =0V			1	μA
R <sub>DS(ON)</sub>	Drain-Source On-Resistance*	V <sub>GS</sub> =10V, I <sub>D</sub> =62A		11.3	13.6	mΩ
V <sub>SD</sub>	Diode Forward Voltage *	I <sub>S</sub> =62A, V <sub>GS</sub> =0V			1.3	V
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =20V, I <sub>D</sub> =36A		22		S
<b>DYNAMIC</b>						
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =75V, V <sub>GS</sub> =10V, I <sub>D</sub> =62A		333		nC
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =75V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =62A		91.6		
Q <sub>gs</sub>	Gate-Source Charge			115		
Q <sub>gd</sub>	Gate-Drain Charge			75.2		
R <sub>g</sub>	Gate-Resistance	V <sub>DS</sub> =0V, V <sub>GS</sub> =0V, f=1MHz		3.3		Ω
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, f=1MHz		20776		pF
C <sub>oss</sub>	Output Capacitance			597		
C <sub>rss</sub>	Reverse Transfer Capacitance			523		
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DS</sub> =75V, R <sub>L</sub> =1.2Ω V <sub>GS</sub> =10V, R <sub>G</sub> =2.2Ω I <sub>D</sub> =62A		68.4		ns
t <sub>r</sub>	Turn-On Rise Time			54.7		
t <sub>d(off)</sub>	Turn-Off Delay Time			300		
t <sub>f</sub>	Turn-Off Fall Time			57.6		

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

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

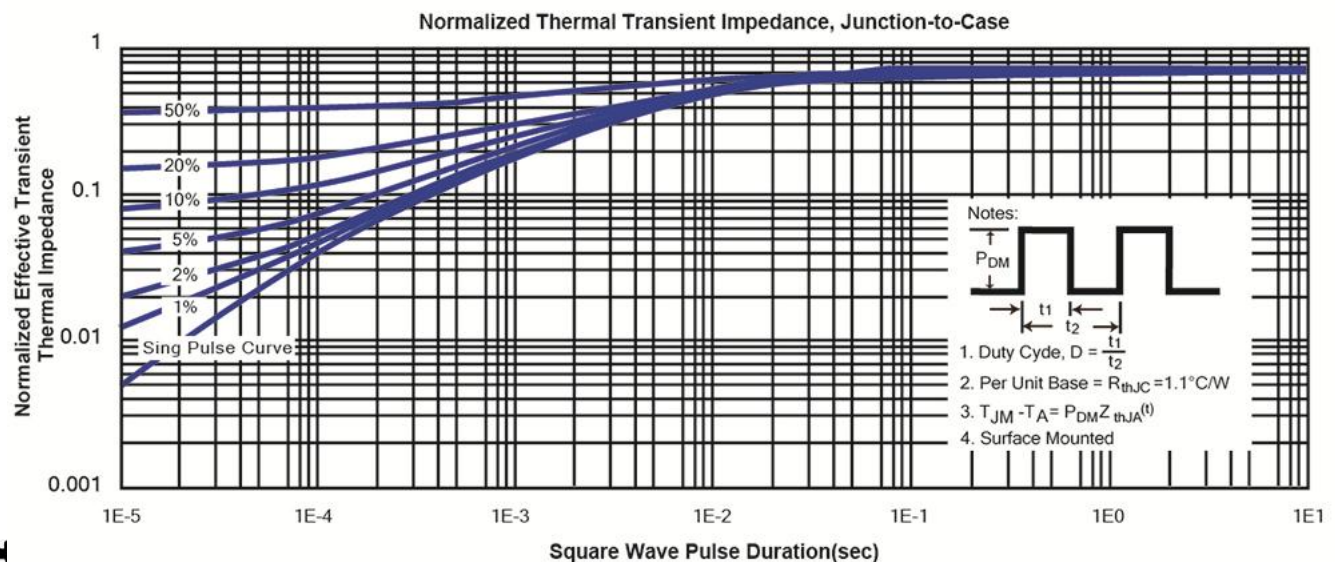
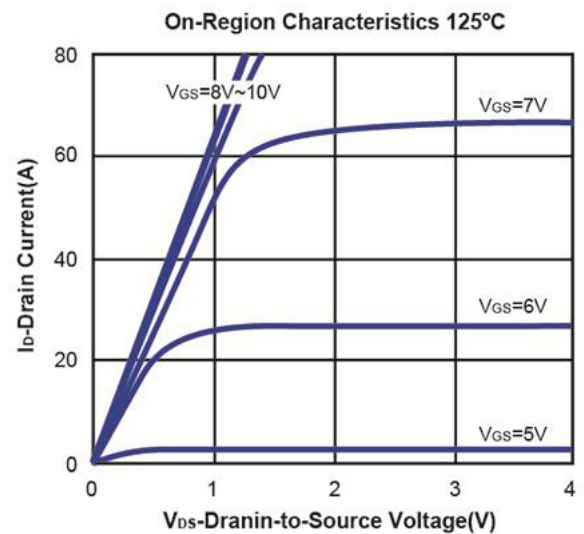
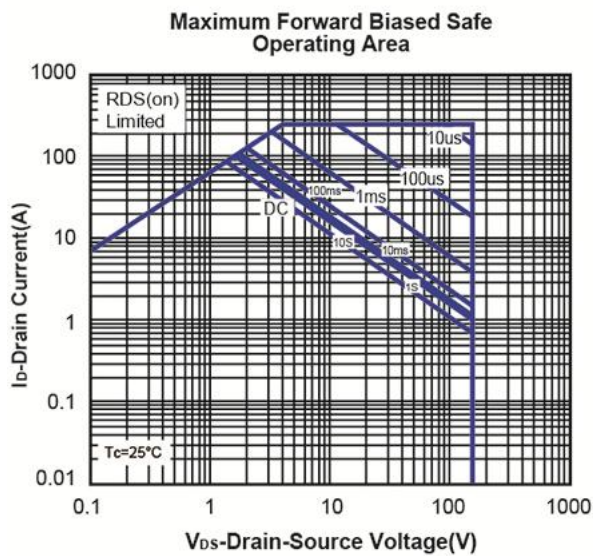
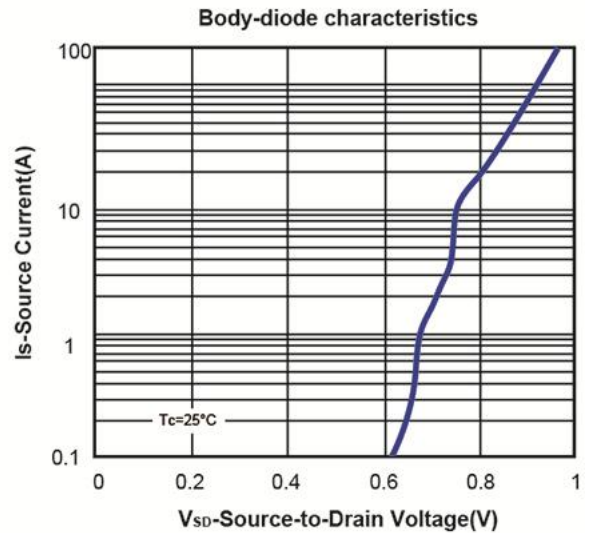
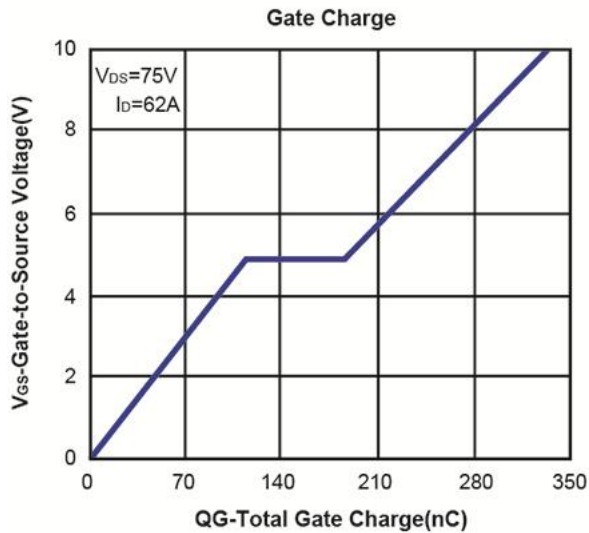
**N-Channel 150-V (D-S) MOSFET**

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

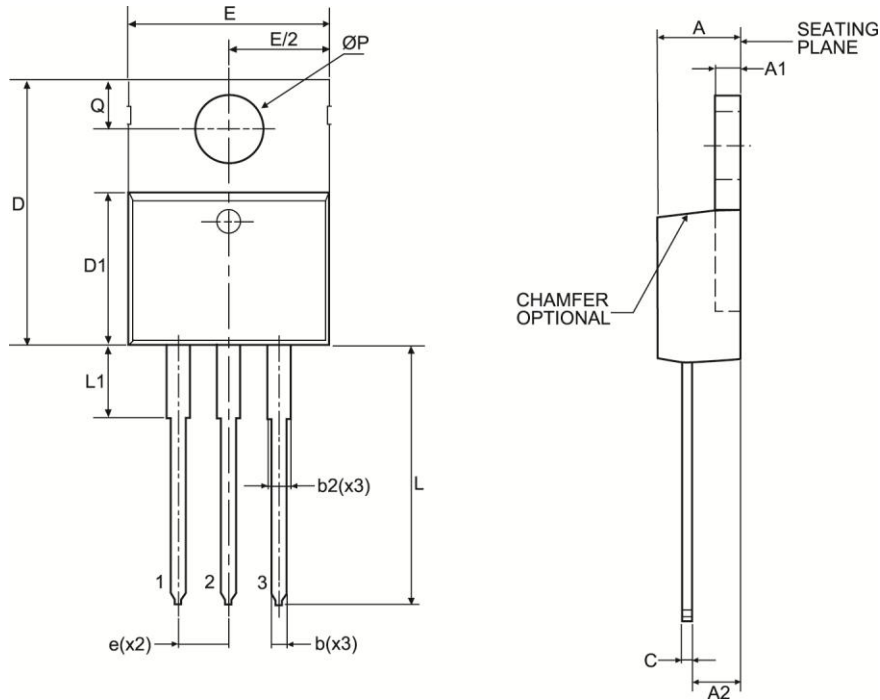


**N-Channel 150-V (D-S) MOSFET**

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



**TO-220 Package Outline**



Symbol	MILLIMETERS (mm)	
	MIN	MAX
A	3.50	4.90
A1	1.00	1.40
A2	2.00	3.00
b	0.70	1.40
c	0.35	0.65
D	14.00	16.50
D1	8.30	9.50
E	9.60	10.70
e	2.54 BSC	
L	12.50	15.00
$\varnothing P$	3.60 TYP	
Q	2.50	3.10
b2	1.10	1.80
L1	2.40	3.20