

N-Channel 75-V (D-S) MOSFET

GENERAL DESCRIPTION

The ME55N06A is the N-Channel logic enhancement mode power field effect transistors, 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, notebook computer power management and other battery powered circuits, and low in-line power loss that are needed in a very small outline surface mount package.

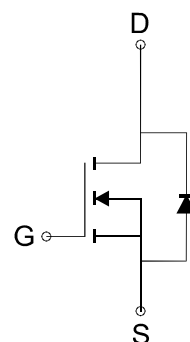
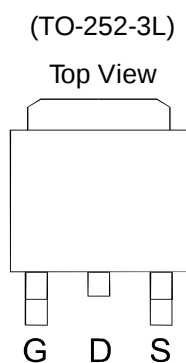
FEATURES

- $R_{DS(ON)} \leq 9.5m\Omega @ V_{GS}=10V$
- 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

PIN CONFIGURATION



N-Channel MOSFET

Ordering Information: ME55N06A (Pb-free)

ME55N06A-G (Green product-Halogen free)

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

Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V_{DS}	75	V
Gate-Source Voltage		V_{GS}	±25	V
Continuous Drain Current	Tc=25°C	I_D	64	A
	Tc=70°C		51	
Pulsed Drain Current		I_{DM}	256	A
Maximum Power Dissipation	Tc=25°C	P_D	63	W
	Tc=70°C		40	
Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Thermal Resistance-Junction to Case*		$R_{\theta JC}$	2	°C/W

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

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Electrical Characteristics (T_J = 25°C Unless Otherwise Specified)

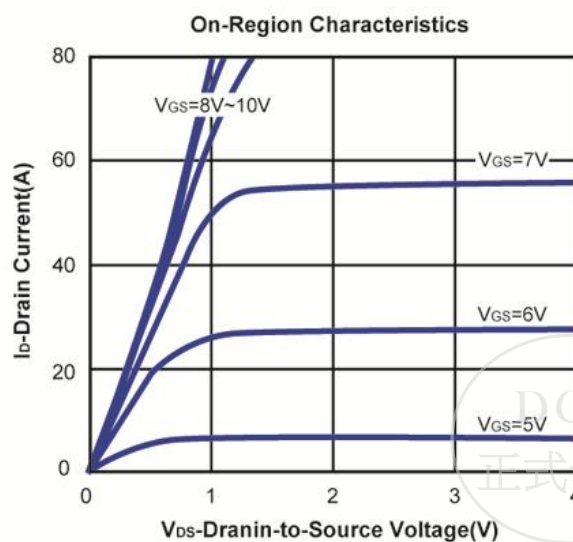
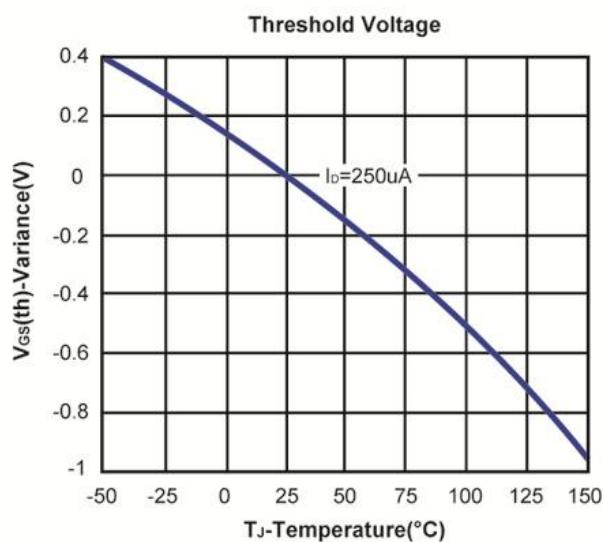
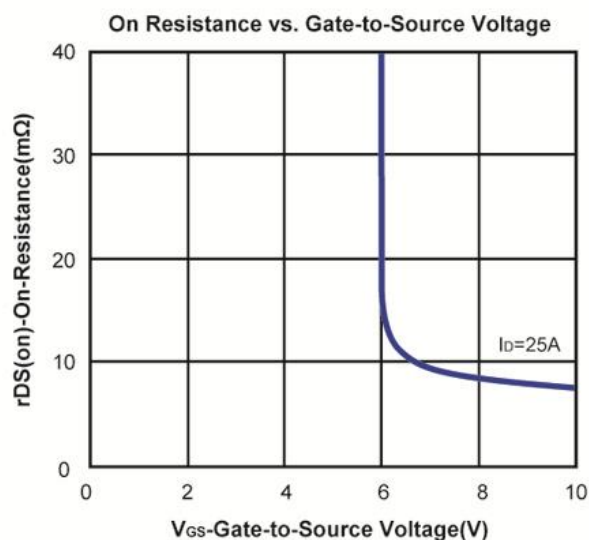
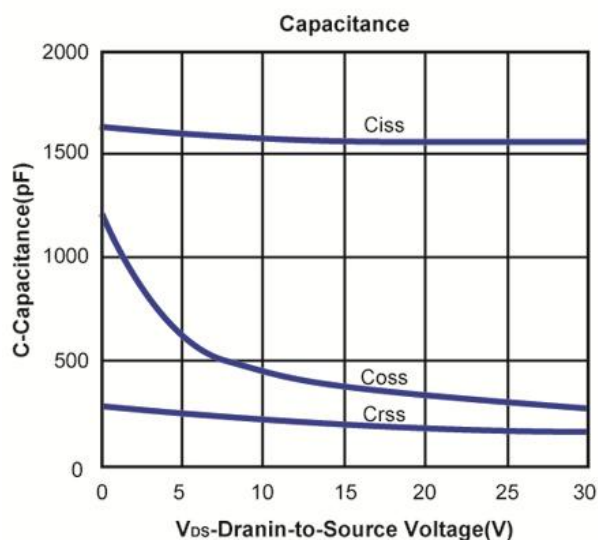
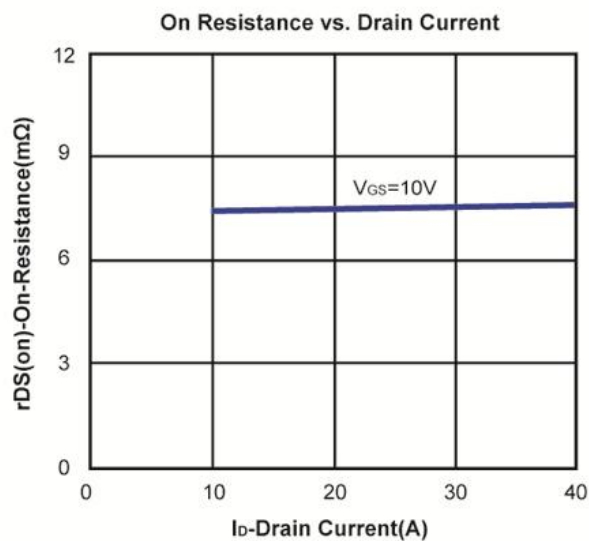
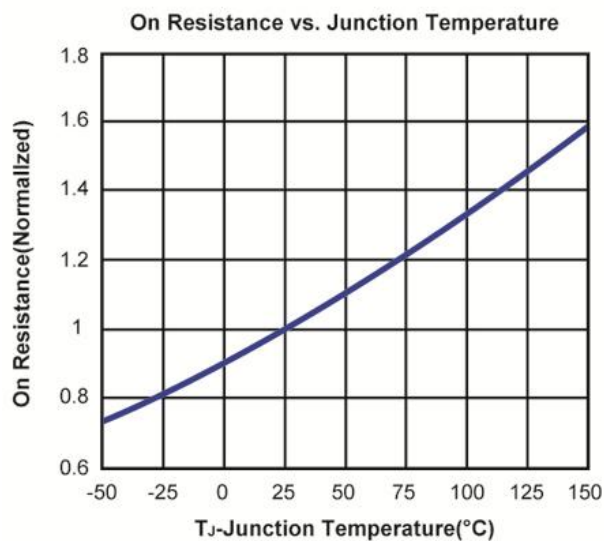
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μA	75			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250 μA	2		4	V
I _{GSS}	Gate-Body Leakage	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =75V, V _{GS} =0V			1	μA
R _{DS(ON)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =25A		7.5	9.5	mΩ
V _{SD}	Diode Forward Voltage	I _S =25A, V _{GS} =0V		0.85	1.2	V
DYNAMIC						
Q _g	Total Gate Charge	V _{DS} =44V, V _{GS} =10V, I _D =25A		114		nC
Q _g	Total Gate Charge	V _{DS} =44V, V _{GS} =4.5V, I _D =25A		26		
Q _{gs}	Gate-Source Charge			34		
Q _{gd}	Gate-Drain Charge			33		
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz		1563		pF
C _{oss}	Output Capacitance			363		
C _{rss}	Reverse Transfer Capacitance			194		
t _{d(on)}	Turn-On Delay Time	V _{DD} =28V, R _L =28Ω, V _{GS} =10V, R _G =4.5Ω		51.4		ns
t _r	Turn-On Rise Time			19.3		
t _{d(off)}	Turn-Off Delay Time			104		
t _f	Turn-Off Fall Time			19.9		

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

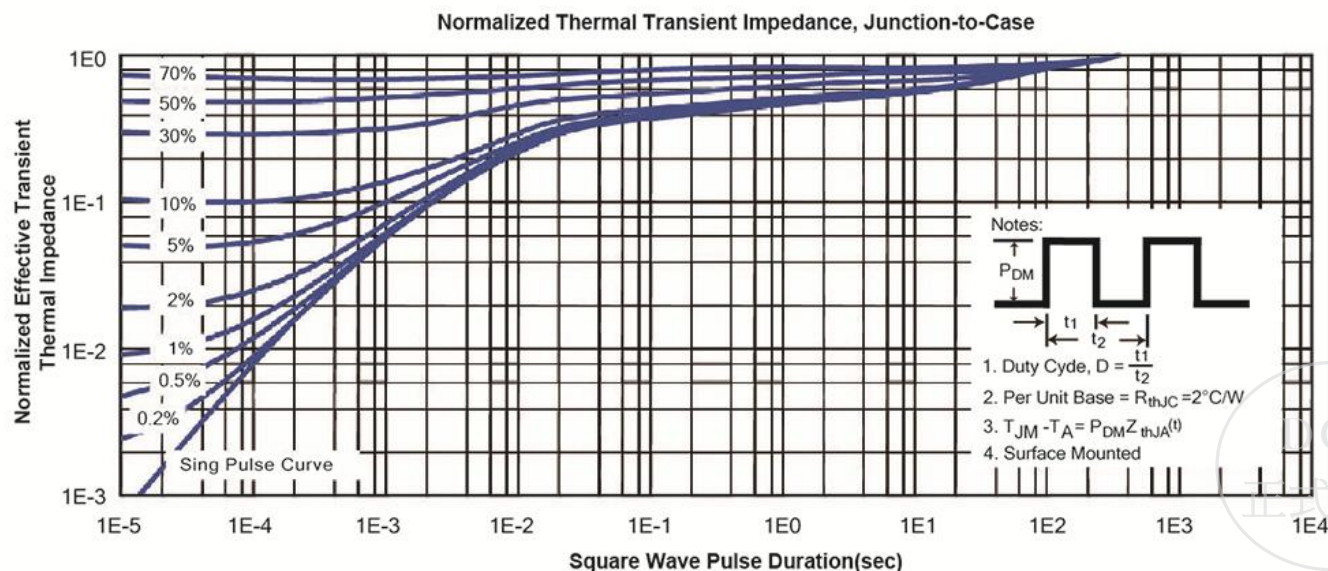
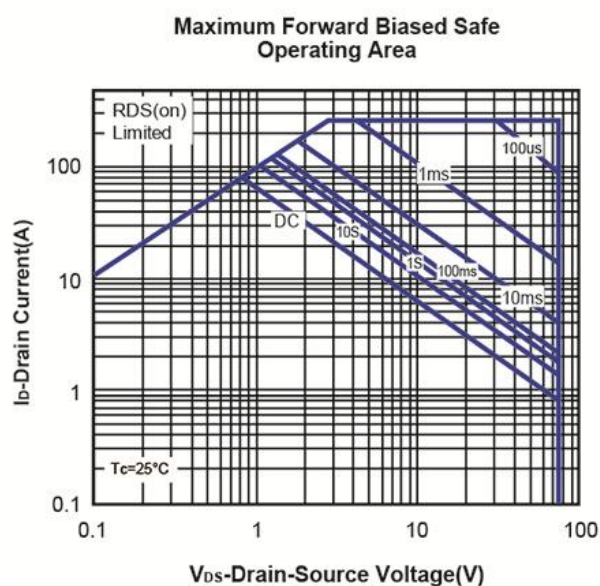
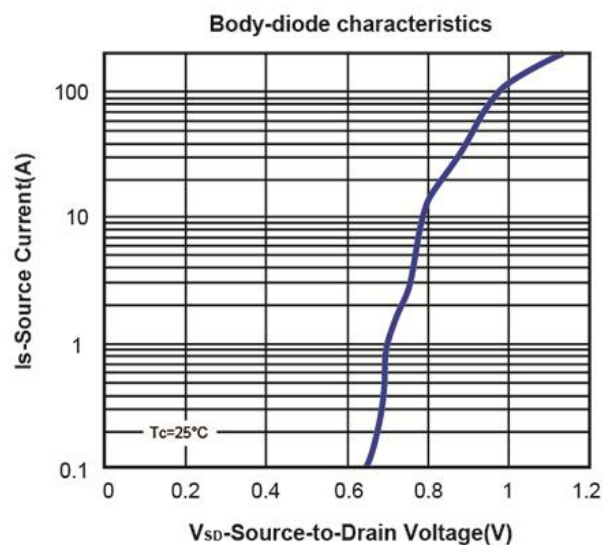
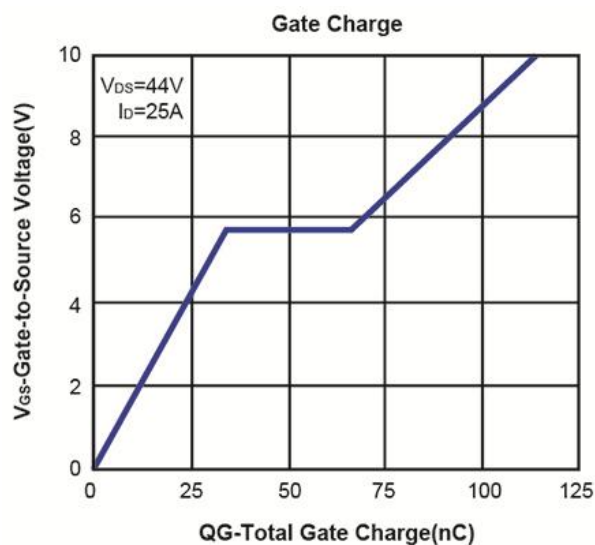
b. Matsuki Electric/ Force mos reserves the right to improve product design, functions and reliability without notice.



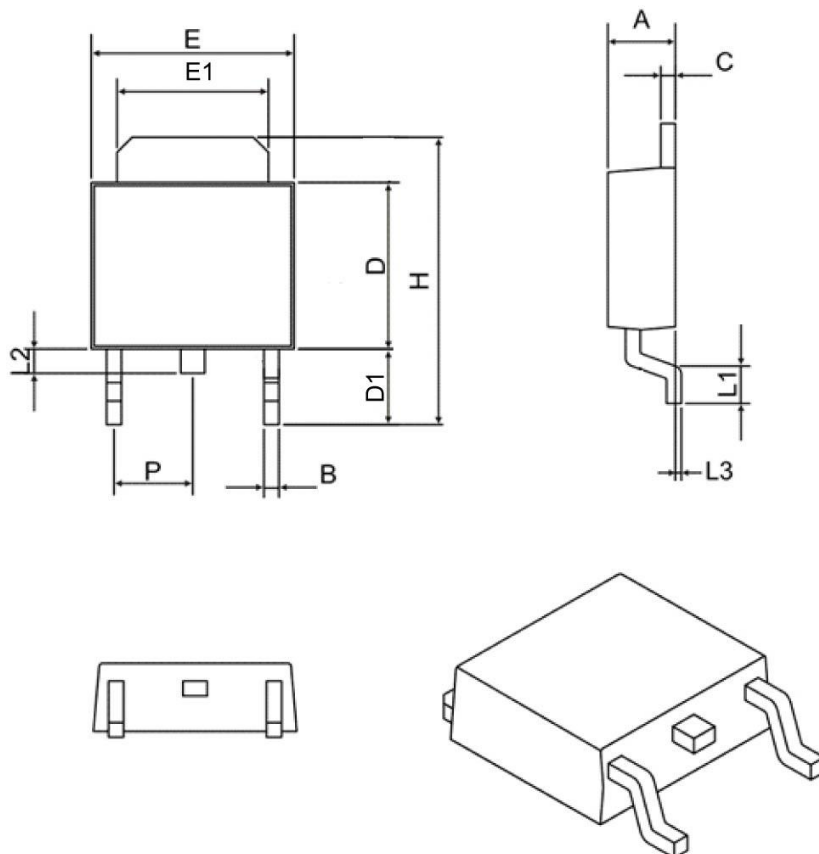
N-Channel 75-V (D-S) MOSFET
Typical Characteristics (T_J = 25°C Noted)



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TO252-3L 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	

DCC
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