

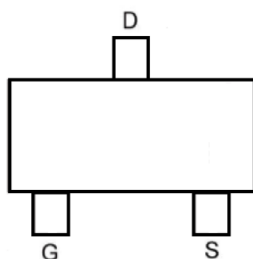
N-Channel 30V (D-S)MOSFET

GENERAL DESCRIPTION

The ME2306AS 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.

PIN CONFIGURATION

Small SOT-23
Top View

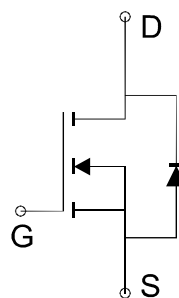


FEATURES

- $R_{DS(ON)} \leq 34.5m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 38m\Omega @ V_{GS}=4.5V$
- $R_{DS(ON)} \leq 50m\Omega @ V_{GS}=2.5V$
- 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
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter



Ordering Information: ME2306AS (Pb-free)

ME2306AS-G (Green product-Halogen free)

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_D	5.3	A
	$T_A=70^\circ\text{C}$		4.3	
Pulsed Drain Current		I_{DM}	21.5	
Maximum Power Dissipation	$T_A=25^\circ\text{C}$	P_D	1.3	W
	$T_A=70^\circ\text{C}$		0.8	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient*		$R_{\theta JA}$	90	$^\circ\text{C/W}$

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

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N-Channel 30V (D-S)MOSFET

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

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC PARAMETERS						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μA	30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250 μA	0.7		1.4	
I _{GSS}	Gate-Body Leakage Current	V _{DS} =0V, V _{GS} =±12V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V			1	μA
R _{DS(ON)}	Drain-Source On-Resistance ^a	V _{GS} =10V, I _D = 4A		27	34.5	mΩ
		V _{GS} =4.5V, I _D = 3.5A		29	38	
		V _{GS} =2.5V, I _D = 2.8A		39	50	
V _{SD}	Diode Forward Voltage	I _S =1.25A, V _{GS} =0V		0.8	1.2	V
DYNAMIC PARAMETERS						
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =10V, I _D =4A		17		nC
Q _{gs}	Gate-Source Charge			2.5		
Q _{gd}	Gate-Drain Charge			2		
R _g	Gate Resistance	f =1MHz		0.9		Ω
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz		647		pF
C _{oss}	Output Capacitance			61		
C _{rss}	Reverse Transfer Capacitance			48.3		
t _{d(on)}	Turn-On Delay Time	V _{DD} =15V, R _L =15Ω I _D =1A, V _{GEN} =10V, R _G =6Ω		8.6		ns
t _r	Rise Time			12.3		
t _{d(off)}	Turn-Off Delay Time			36.3		
t _f	Fall Time			5.9		

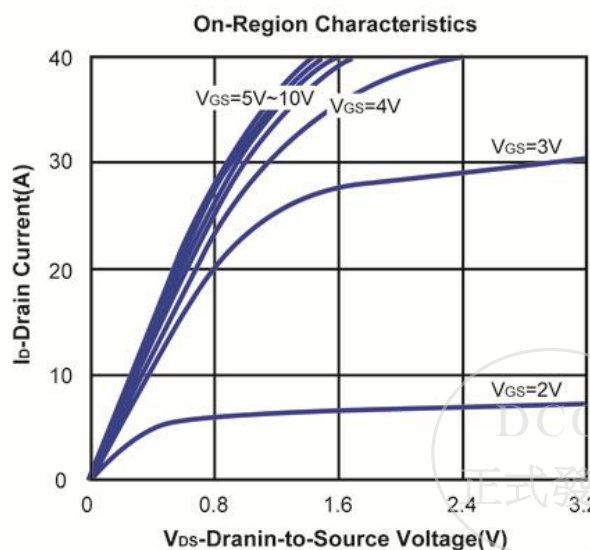
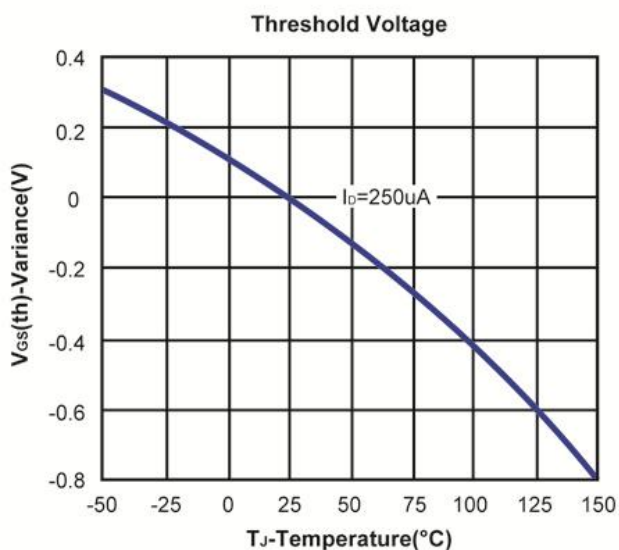
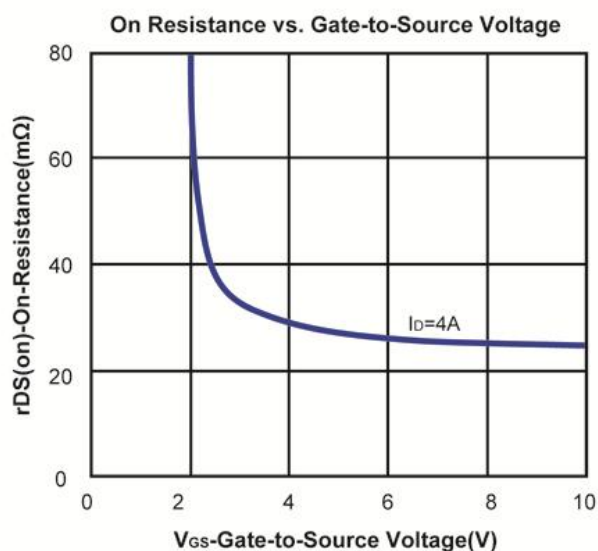
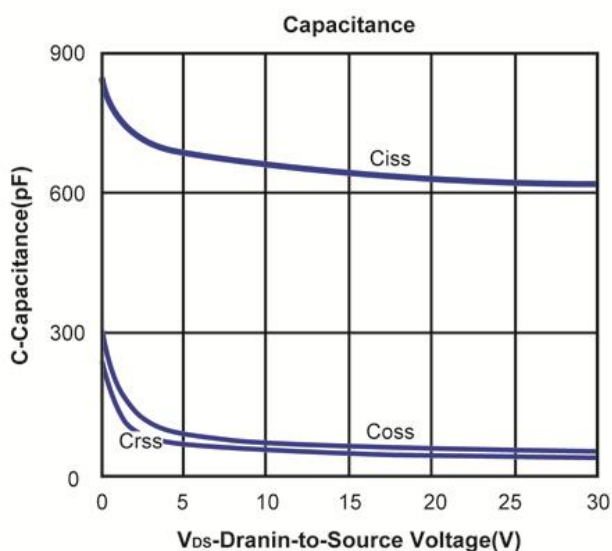
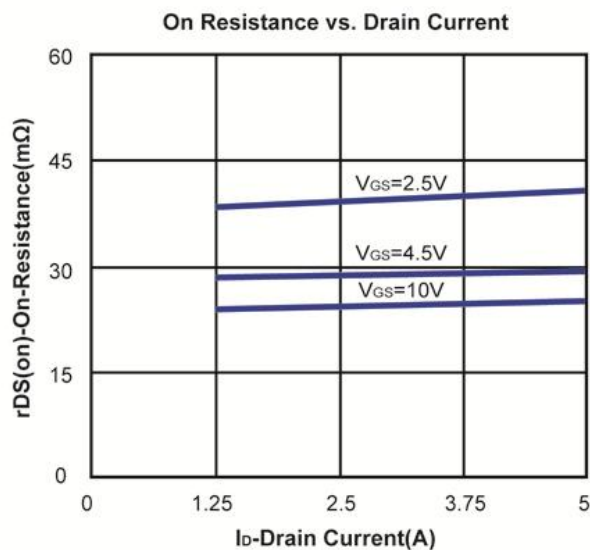
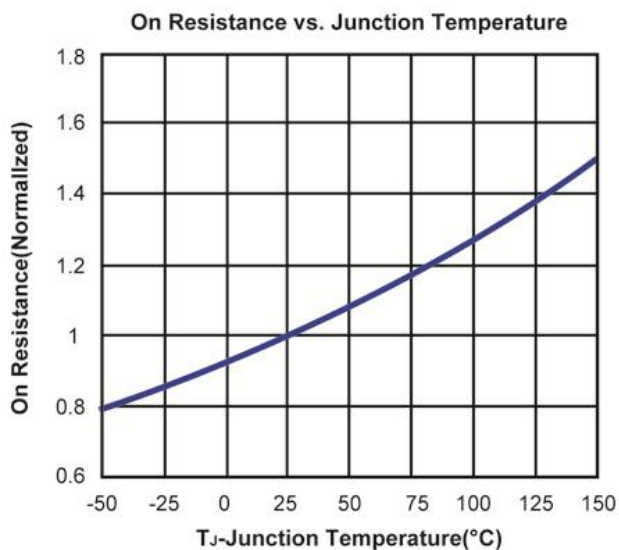
Notes: a. Pulse test; pulse width ≤ 380us, duty cycle ≤ 2%

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



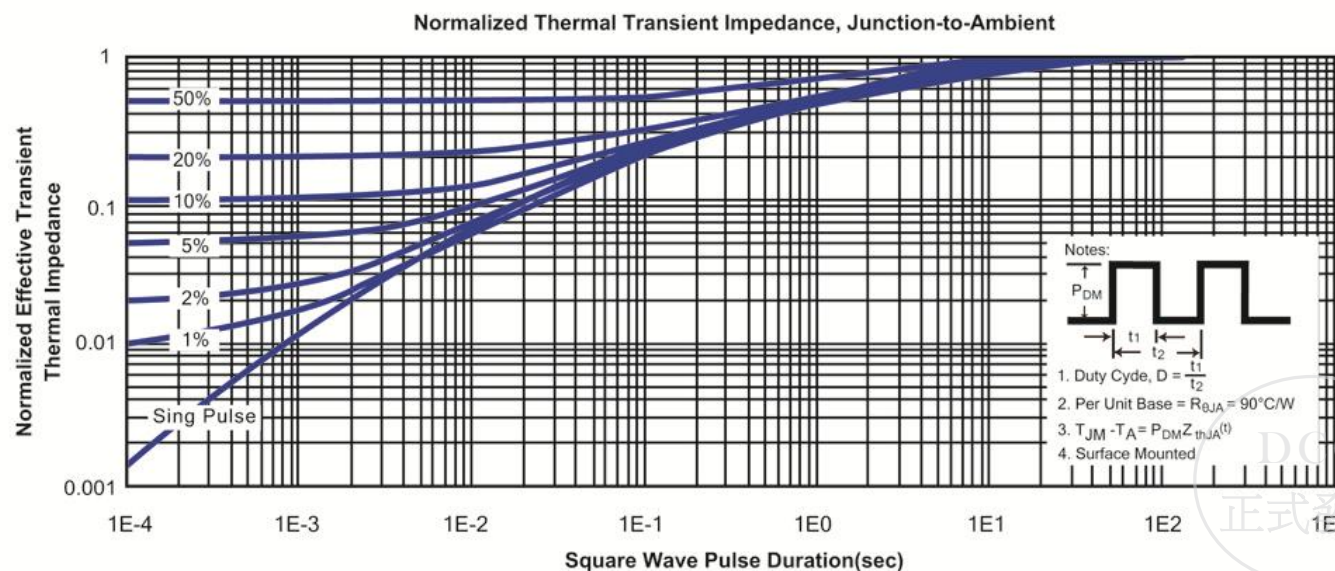
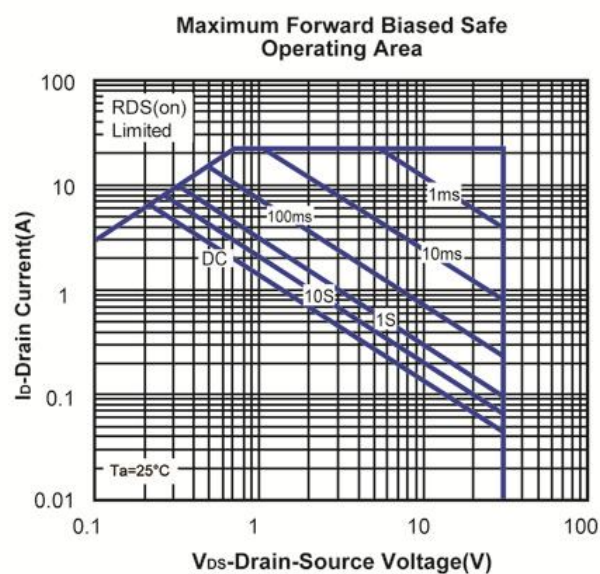
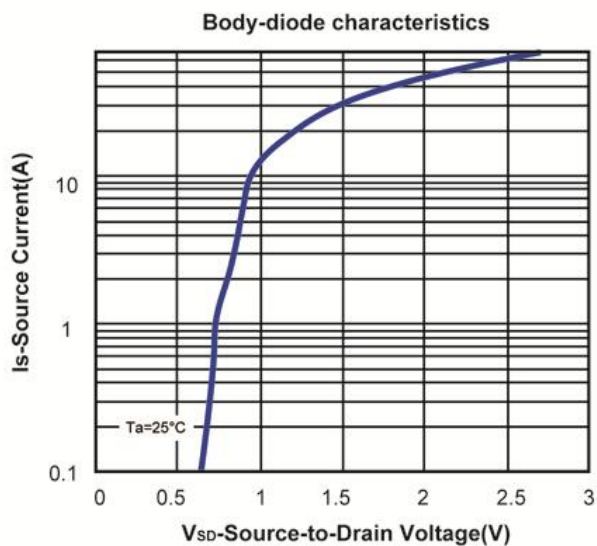
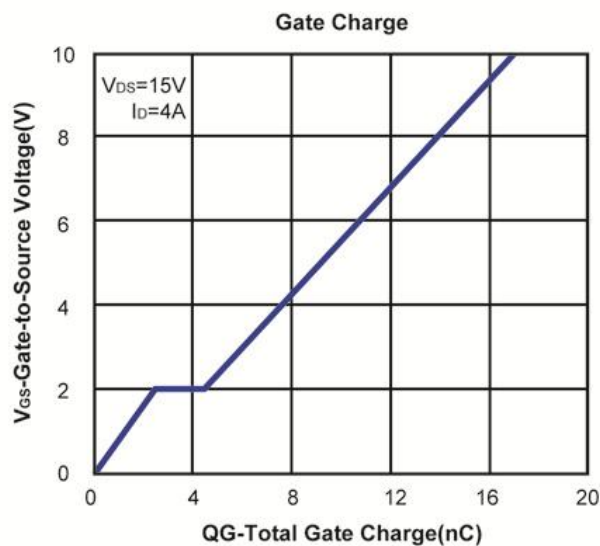
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Typical Characteristics (T_J =25°C Noted)

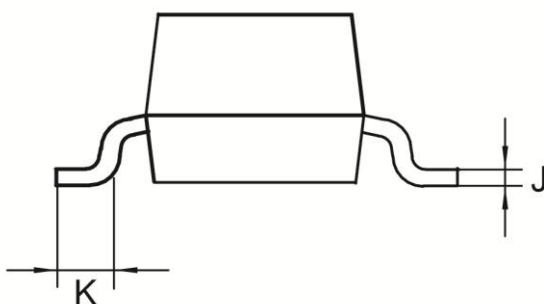
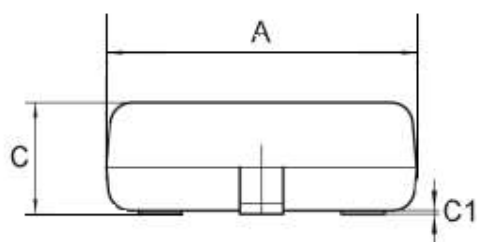
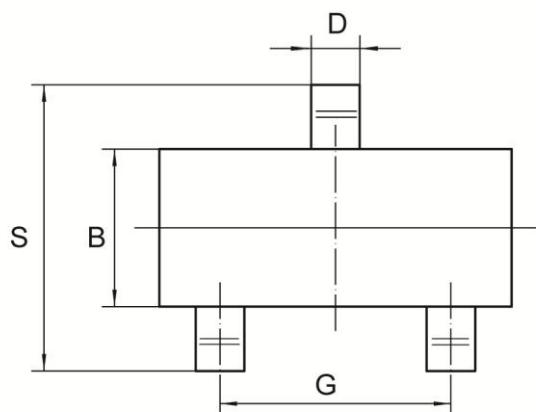


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Typical Characteristics (T_J =25°C Noted)



Small SOT-23 Package Outline



Symbol	MILLIMETERS	
	MIN	MAX
A	2.8	3.0
B	1.2	1.4
C	0.9	1.1
C1	-	0.1
D	0.3	0.5
G	1.90 REF	
J	0.05	0.15
K	0.2	-
S	2.2	2.6



D/C :

4E is the sequence of "0-9" & "A-Z"

0~9 shown on the 6th position on ---2010~2019

A~Z shown on the 6th position on ---2020~2045

A~Z shown on the 7th position on ---1week~26week

A~Z shown on the 7th position on ---27week~52week

P/N :

WFASG is ME2306AS-G

"WFAS" shown on the 1st~4th position on --- ME2306AS

"G" shown on the 5th position on --- Green product-Halogen free

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