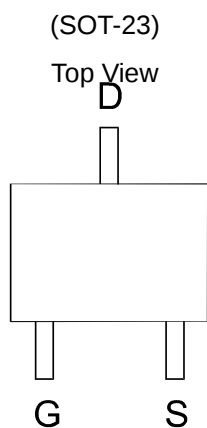


N-Channel 30V (D-S) MOSFET ,ESD Protection

GENERAL DESCRIPTION

The ME2308D 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 low in-line power loss are needed in a very small outline surface mount package.

PIN CONFIGURATION

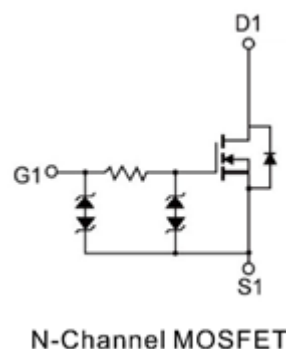


FEATURES

- $R_{DS(ON)} \leq 60m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 70m\Omega @ V_{GS}=4.5V$
- $R_{DS(ON)} \leq 100m\Omega @ V_{GS}=2.5V$
- ESD Protection
- 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
- Load Switch



Ordering Information: ME2308D (Pb-free)

ME2308D-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	$T_A=25^\circ\text{C}$	I_D	3.8	A
	$T_A=70^\circ\text{C}$		3	
Pulsed Drain Current		I_{DM}	15	A
Maximum Power Dissipation	$T_A=25^\circ\text{C}$	P_D	1.4	W
	$T_A=70^\circ\text{C}$		0.9	
Operating Junction Temperature		T_J	-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 ,ESD Protection

Electrical Characteristics (T_A=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	30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250 μA	0.6		1.4	V
I _{GSS}	Gate-Body Leakage Current	V _{DS} =0V, V _{GS} =±10V			±10	μA
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 = 3.4 A		48	60	mΩ
		V _{GS} =4.5V, I _D = 2.7 A		54	70	
		V _{GS} =2.5V, I _D = 1 A		75	100	
V _{SD}	Diode Forward Voltage	I _S =3.4A, V _{GS} =0V		0.8	1.2	V
DYNAMIC						
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =4.5V, I _D =2.1A		4.7		nC
Q _{gs}	Gate-Source Charge			1.9		
Q _{gd}	Gate-Drain Charge			1.6		
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz		184		pF
C _{oss}	Output Capacitance			22		
C _{rss}	Reverse Transfer Capacitance			8		
t _{d(on)}	Turn-On Delay Time	V _{DD} =15V, R _L =15Ω I _D =1.0A, V _{GEN} =10V, R _G =6Ω		97.2		ns
t _r	Turn-On Rise Time			128		
t _{d(off)}	Turn-Off Delay Time			2600		
t _f	Turn-Off Fall Time			677		

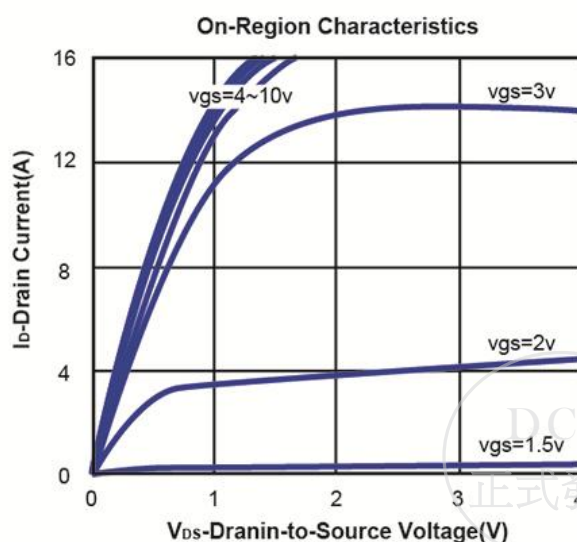
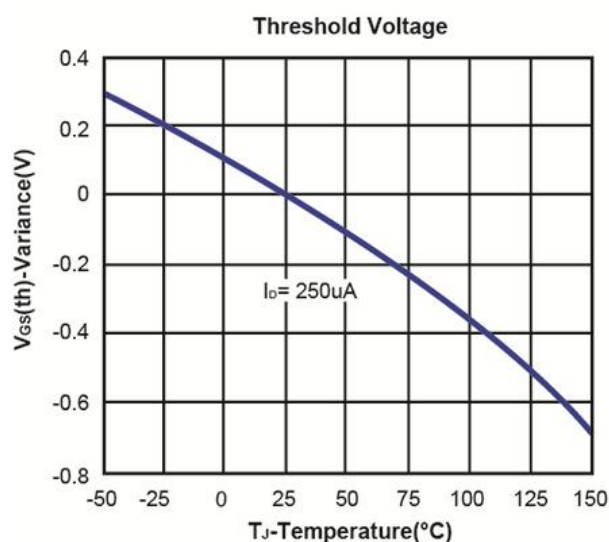
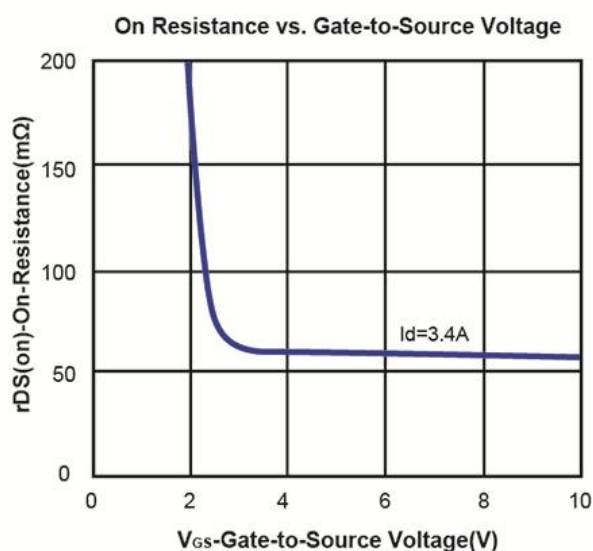
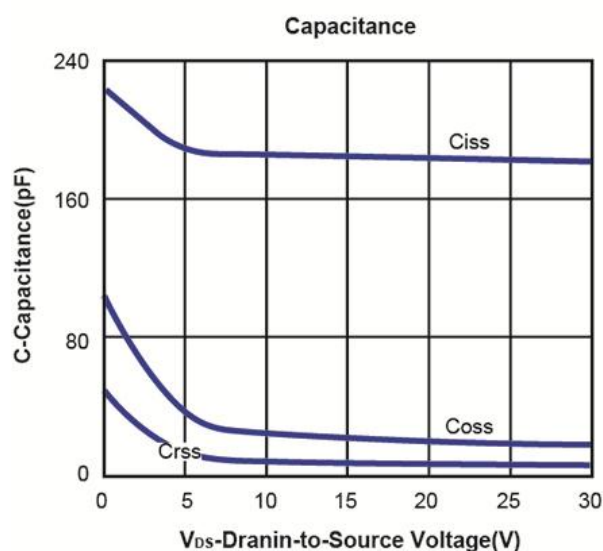
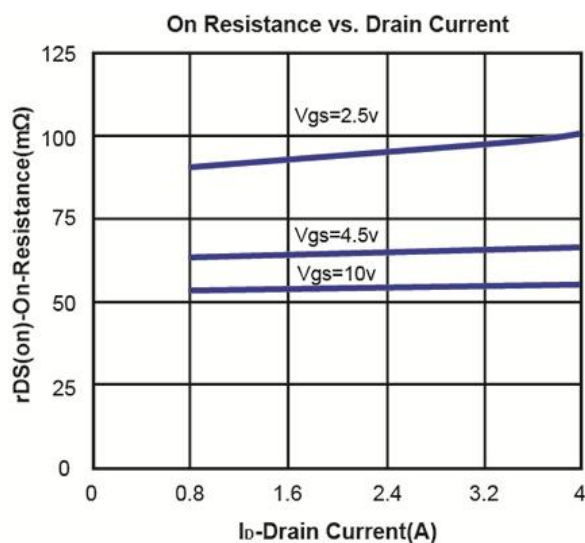
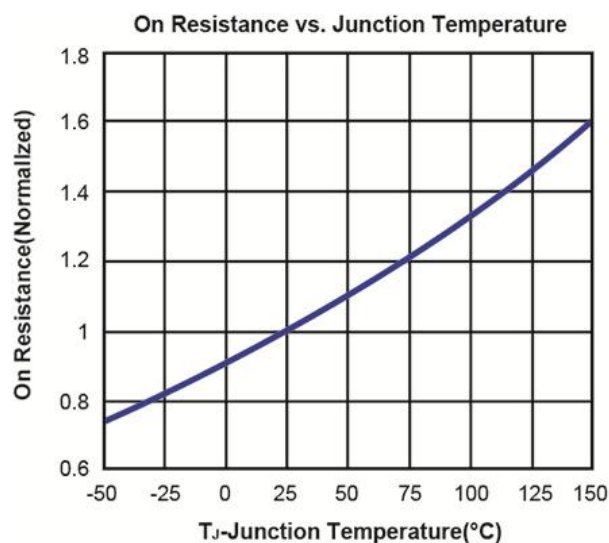
Notes: a. Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%

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

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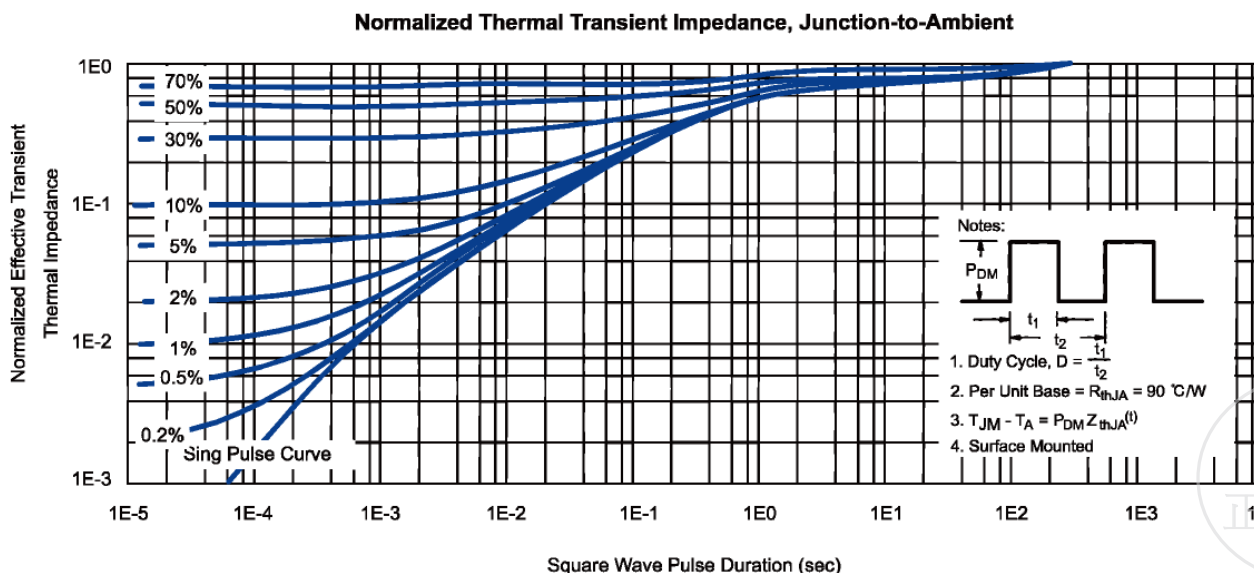
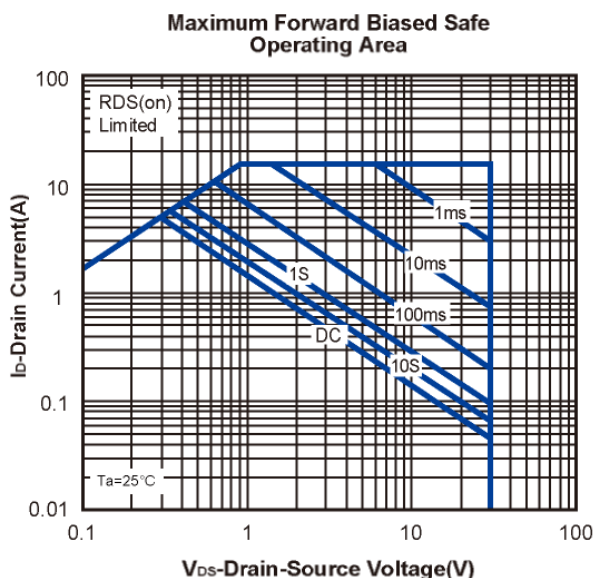
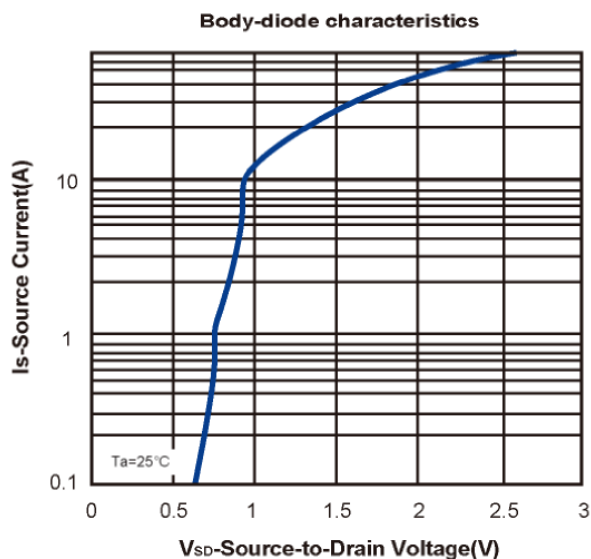
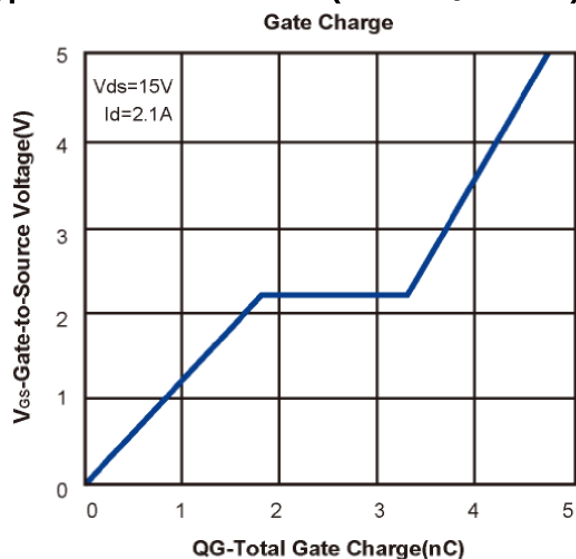
N-Channel 30V (D-S) MOSFET ,ESD Protection

Typical Characteristics (T_J =25°C Noted)

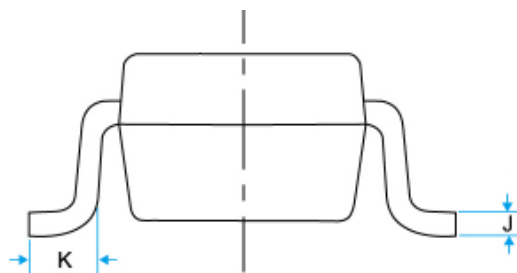
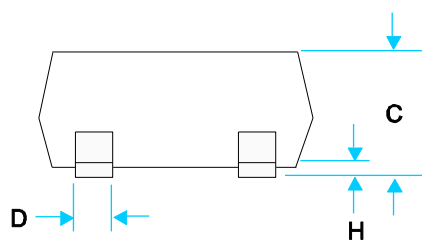
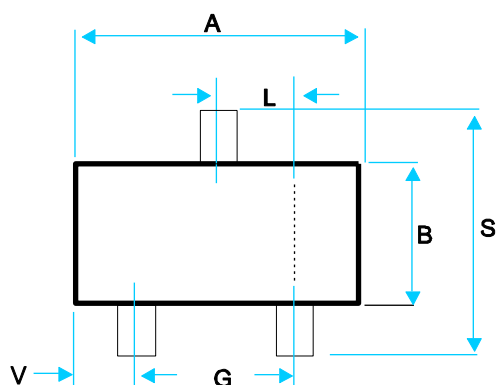


N-Channel 30V (D-S) MOSFET ,ESD Protection

Typical Characteristics (T_J =25°C Noted)



大 SOT-23 Package Outline



DIM	MILLIMETERS (mm)	
	MIN	MAX
A	2.800	3.00
B	1.200	1.70
C	0.900	1.30
D	0.350	0.50
G	1.780	2.04
H	0.010	0.15
J	0.085	0.20
K	0.300	0.65
L	0.890	1.02
S	2.100	3.00
V	0.450	0.60

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