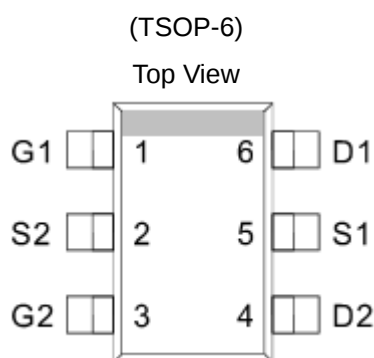


N-Channel 30V (D-S) MOSFET , ESD Protected

GENERAL DESCRIPTION

The ME3920D-G is the Dual 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

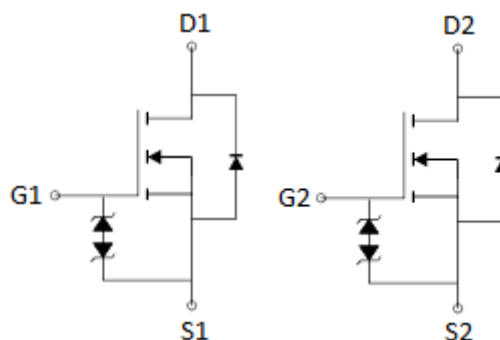


FEATURES

- $R_{DS(ON)} \leq 30m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 45m\Omega @ V_{GS}=4.5V$
- 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: ME3920D (Pb-free)

ME3920D-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_{GSS}	± 20	V
Continuous Drain*	$T_A=25^\circ\text{C}$	I_D	4.5	A
	$T_A=70^\circ\text{C}$		3.6	
Pulsed Drain Current		I_{DM}	18	A
Maximum Power Dissipation*	$T_A=25^\circ\text{C}$	P_D	1.0	W
	$T_A=70^\circ\text{C}$		0.7	
Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient*		$R_{\theta JA}$	120	$^\circ\text{C/W}$

*The device mounted on 1in^2 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						
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	1		3	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±16V			±10	μA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V			1	μA
R _{DS(ON)}	Drain-Source On-Resistance	V _{GS} =10V, I _D = 6.9A		22.6	30	mΩ
		V _{GS} =4.5V, I _D = 5.8A		34.4	45	
V _{SD}	Diode Forward Voltage	I _S =1.7A, V _{GS} =0V		0.78	1.2	V
DYNAMIC						
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHZ		365		pF
C _{oss}	Output Capacitance			55		
C _{rss}	Reverse Transfer Capacitance			40		
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =10V, I _D =6.9A		7.5		
Q _{gs}	Gate-Source Charge			1.5		
Q _{gd}	Gate-Drain Charge			1.6		
t _{d(on)}	Turn-On Delay Time	V _{DD} =15V, R _L =15Ω I _D =1.0A, V _{GEN} =10V R _G =6Ω		9.6		ns
t _r	Turn-On Rise Time			12		
t _{d(off)}	Turn-Off Delay Time			31		
t _f	Turn-Off Fall Time			3.7		

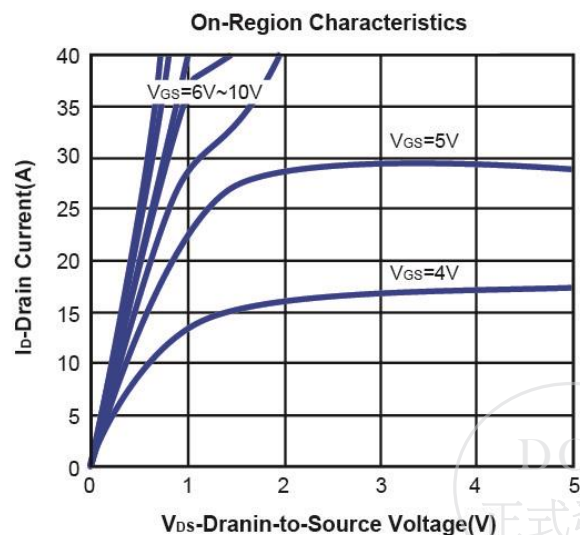
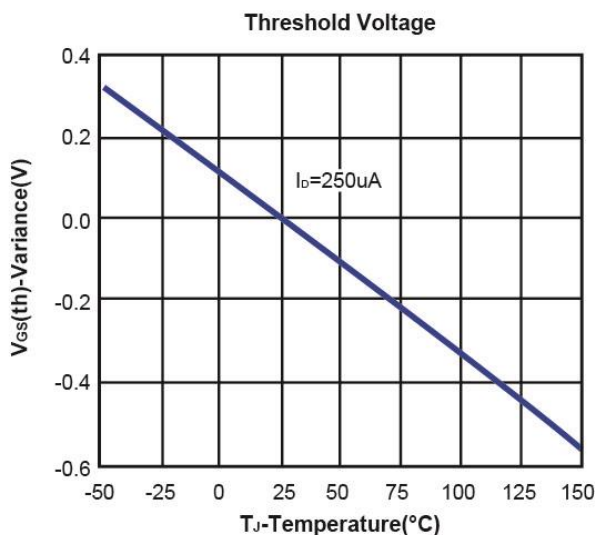
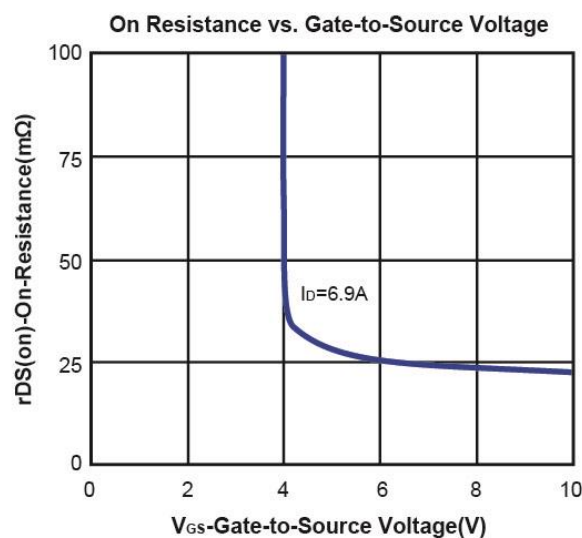
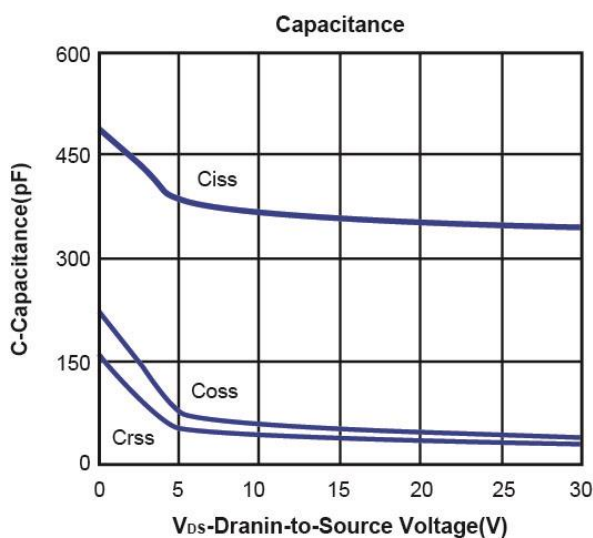
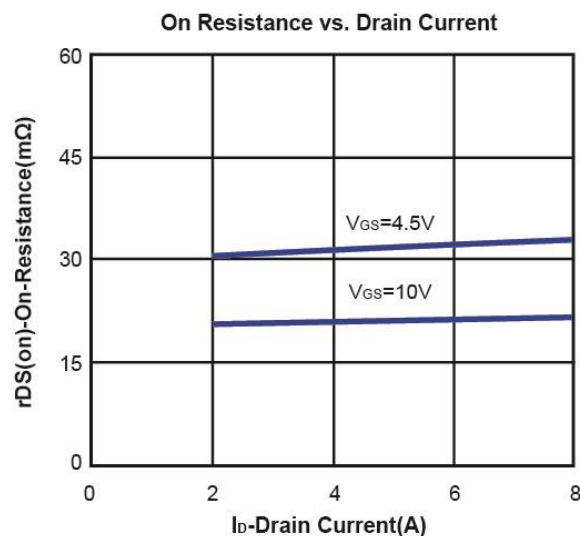
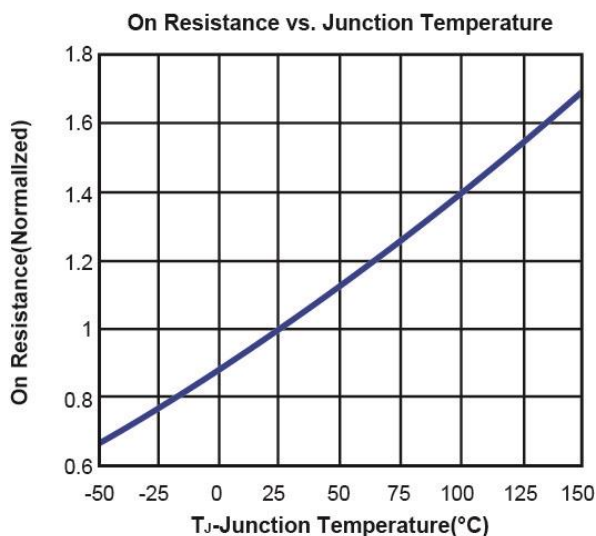
Notes: a. Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%, Guaranteed by design, not subject to production testing.

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

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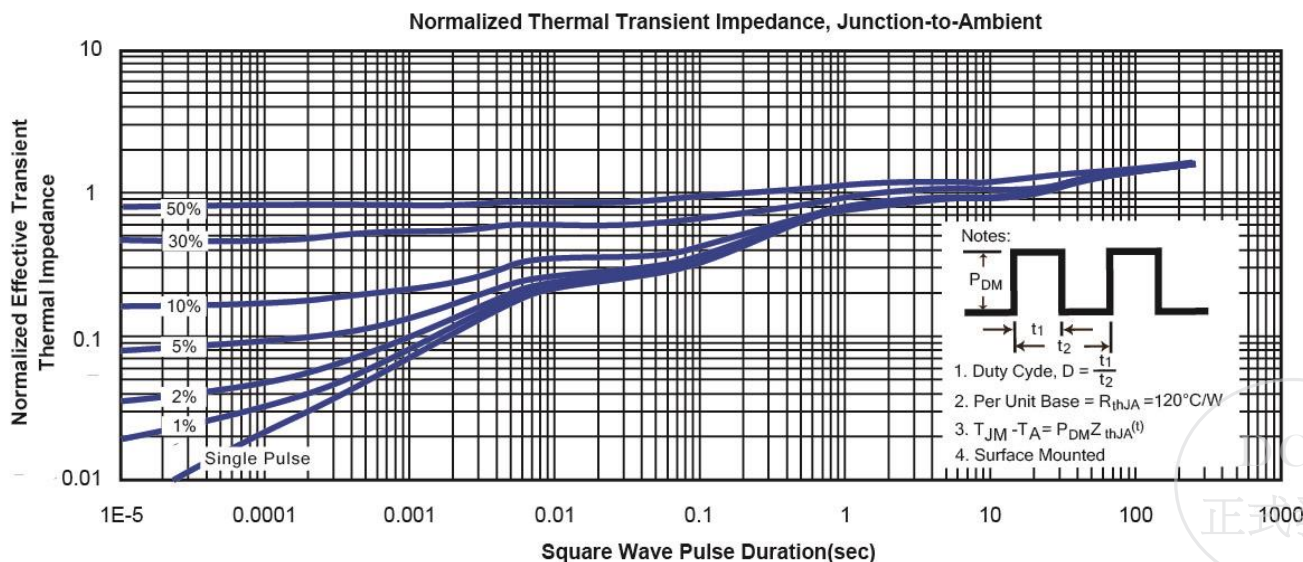
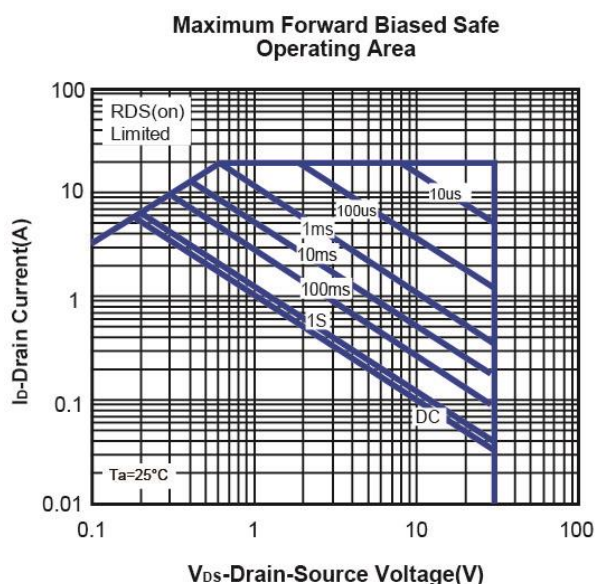
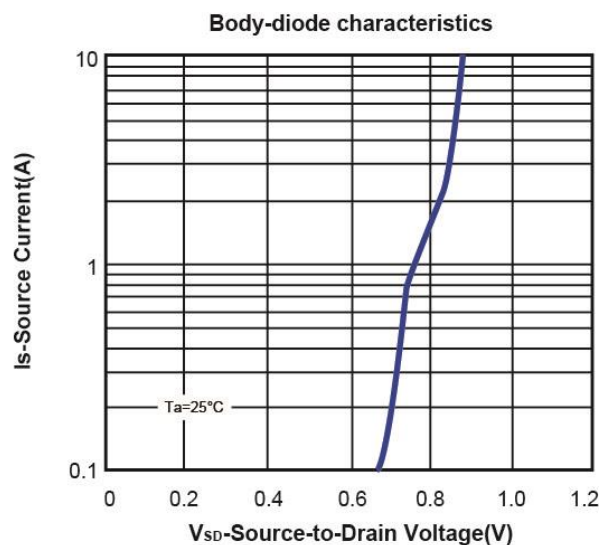
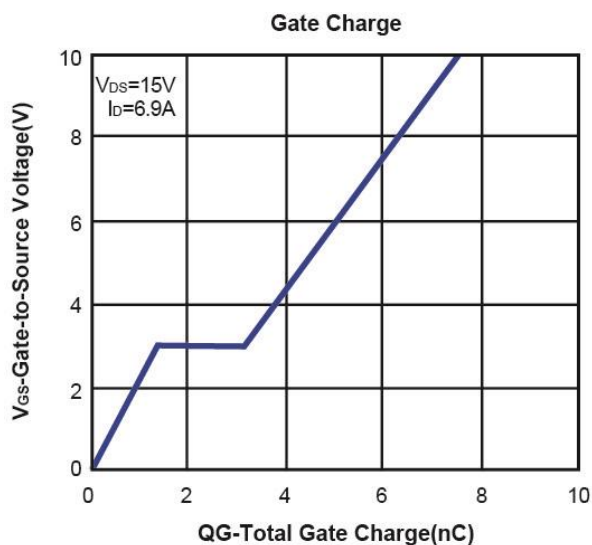
N-Channel 30V (D-S) MOSFET , ESD Protected

Typical Characteristics (T_J =25°C Noted)

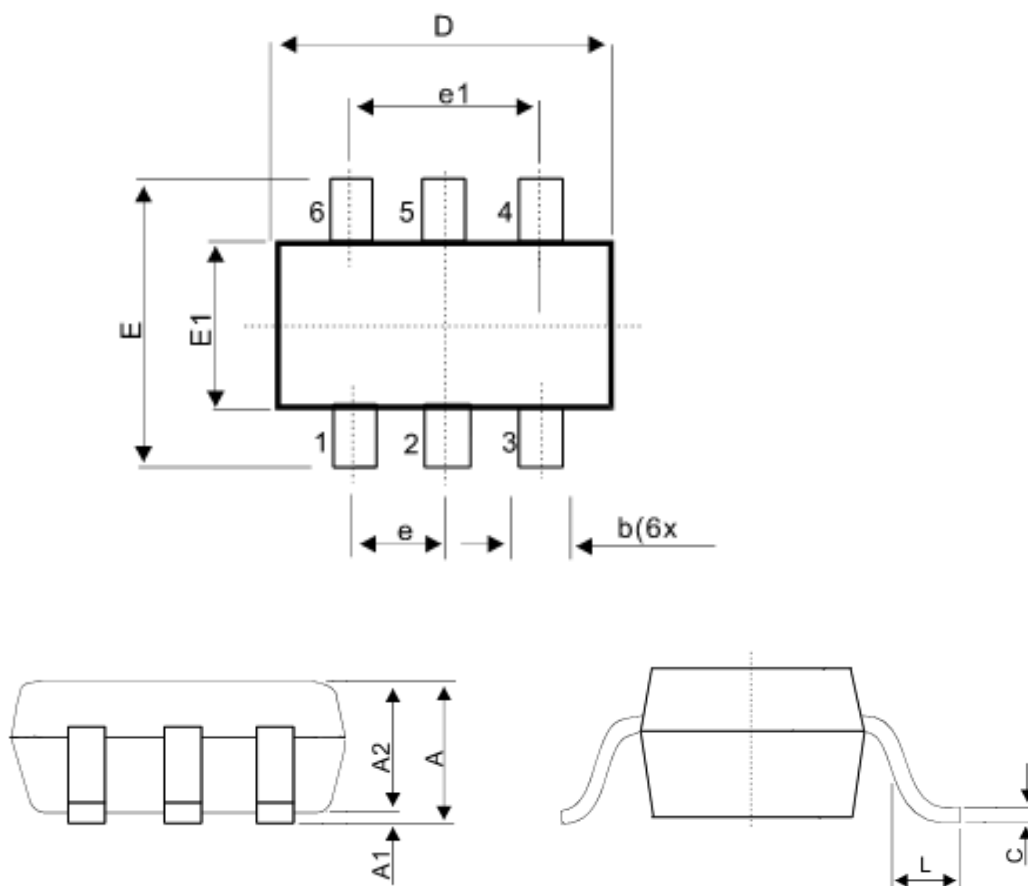


N-Channel 30V (D-S) MOSFET , ESD Protected

Typical Characteristics (T_J =25°C Noted)



SOT-26 Package Outline



SYMBOL	MILLIMETERS (mm)	
	MIN	MAX
A	0.90	1.20
A1	0.01	0.10
A2	0.90	1.15
b	0.25	0.50
C	0.10	0.20
D	2.80	3.10
E	2.60	3.00
E1	1.50	1.70
e	0.95 BSC	
e1	1.90 BSC	
L	0.30	0.60

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