

N-Channel 30-V(D-S) MOSFET

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

GENERAL DESCRIPTION

The ME4626 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.

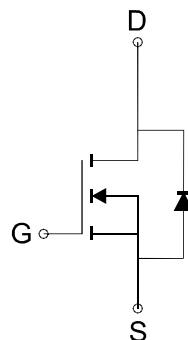
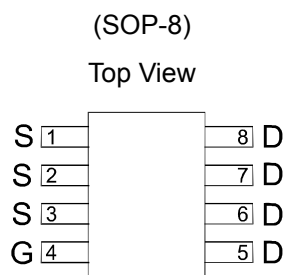
FEATURES

- $R_{DS(ON)} \leq 3.5m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 4.5m\Omega @ V_{GS}=4.5V$
- 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
- Battery Powered System
- DC/DC Converter
- Load Switch

PIN CONFIGURATION



N-Channel MOSFET

Ordering Information: ME4626 (Pb-free)

ME4626-G (Green product-Halogen free)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	± 20	V
Continuous Drain Current($T_J = 150^\circ C$)*	$T_A = 25^\circ C$	I_D	21	A
	$T_A = 70^\circ C$		16.9	
Pulsed Drain Current		I_{DM}	84	A
Maximum Power Dissipation*	$T_A = 25^\circ C$	P_D	2.5	W
	$T_A = 70^\circ C$		1.6	
Operating Junction Temperature		T_J	-55 to 150	$^\circ C$
Thermal Resistance-Junction to Ambient*		$R_{\theta JA}$	50	$^\circ C/W$
Thermal Resistance-Junction to Lead*		$R_{\theta JL}$	24	

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

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

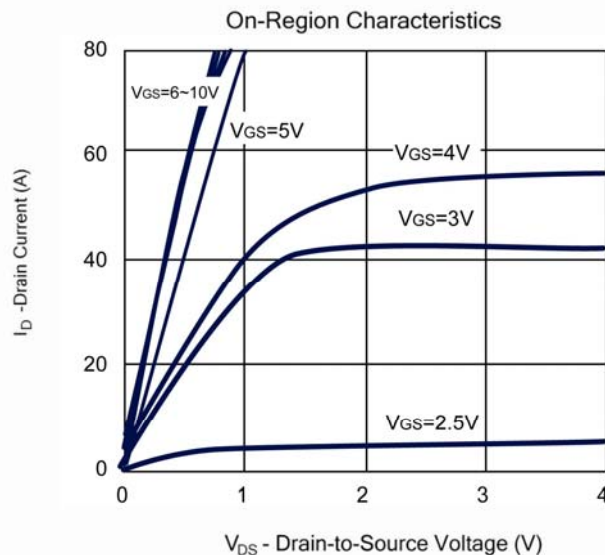
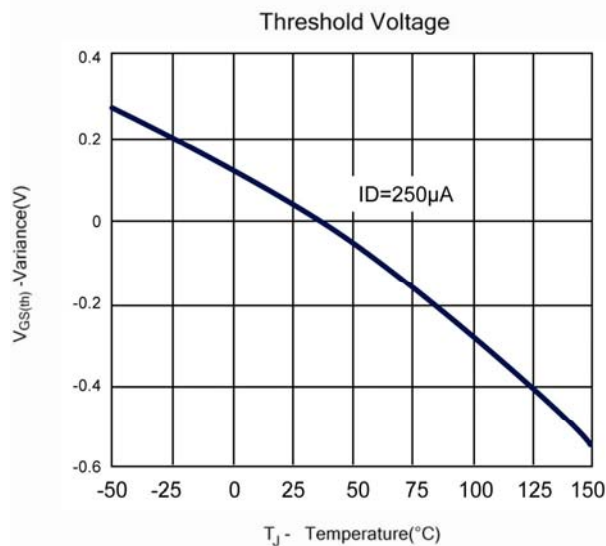
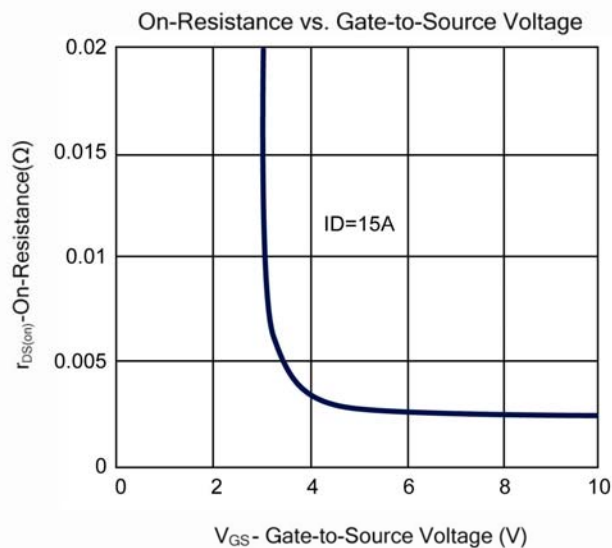
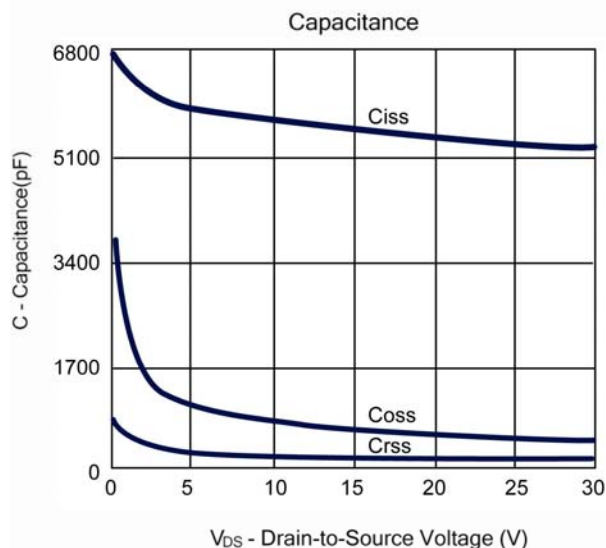
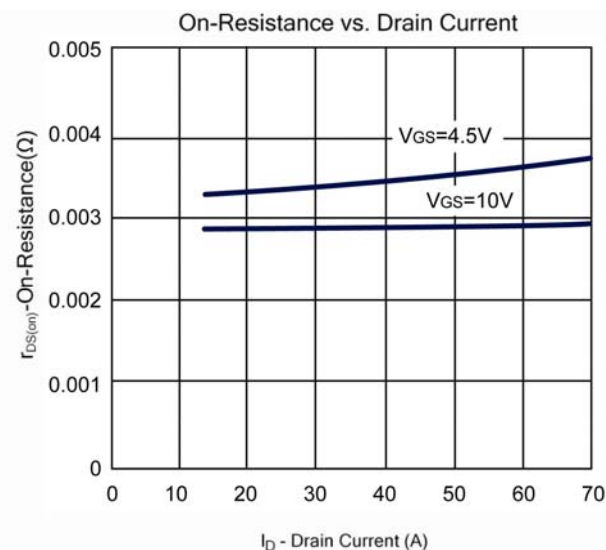
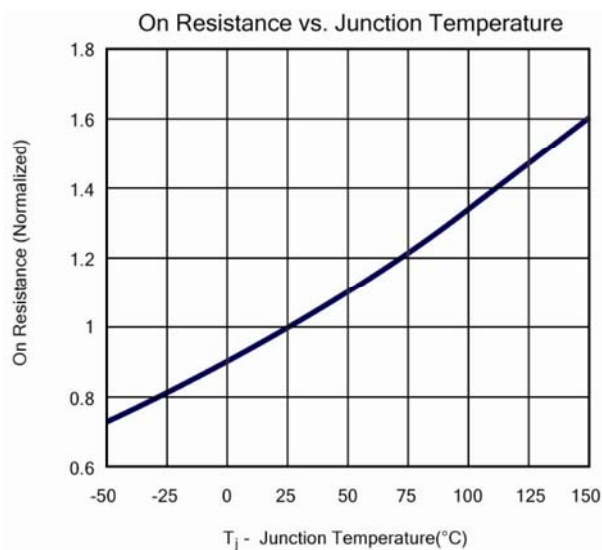
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250 μ A	1		3	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} = $\pm$ 20V			$\pm$ 100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V			1	μ A
R _{DS(on)}	Drain-Source On-State Resistance ^a	V _{GS} =10V, I _D =15A		2.8	3.5	m Ω
		V _{GS} =4.5V, I _D =10A		3.3	4.5	
V _{SD}	Diode Forward Voltage	I _S =15A, V _{GS} =0V		0.8		V
DYNAMIC						
Q _g	Total Gate Charge(4.5V)	V _{DS} =15V, V _{GS} =4.5V, I _D =15A		62		nC
Q _g	Total Gate Charge(10V)	V _{DS} =15V, V _{GS} =10V, I _D =15A		128		
Q _{gs}	Gate-Source Charge			18		
Q _{gd}	Gate-Drain Charge			27		
C _{iss}	Input capacitance	V _{DS} =15V, V _{GS} =0V, f=1.0MHz		5730		pF
C _{oss}	Output Capacitance			660		
C _{rss}	Reverse Transfer Capacitance			220		
R _g	Gate-Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz		0.9		Ω
t _{d(on)}	Turn-On Delay Time	V _{DD} =15V, R _L =15 Ω I _D =1A, V _{GEN} =10V R _G =6 Ω		33		ns
t _r	Turn-On Rise Time			20		
t _{d(off)}	Turn-Off Delay Time			110		
t _f	Turn-Off Fall Time			17		

Notes: a. Pulse test: pulse width $\leq$ 300 μ s, duty cycle $\leq$ 2%, Guaranteed by design, not subject to production testing.

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

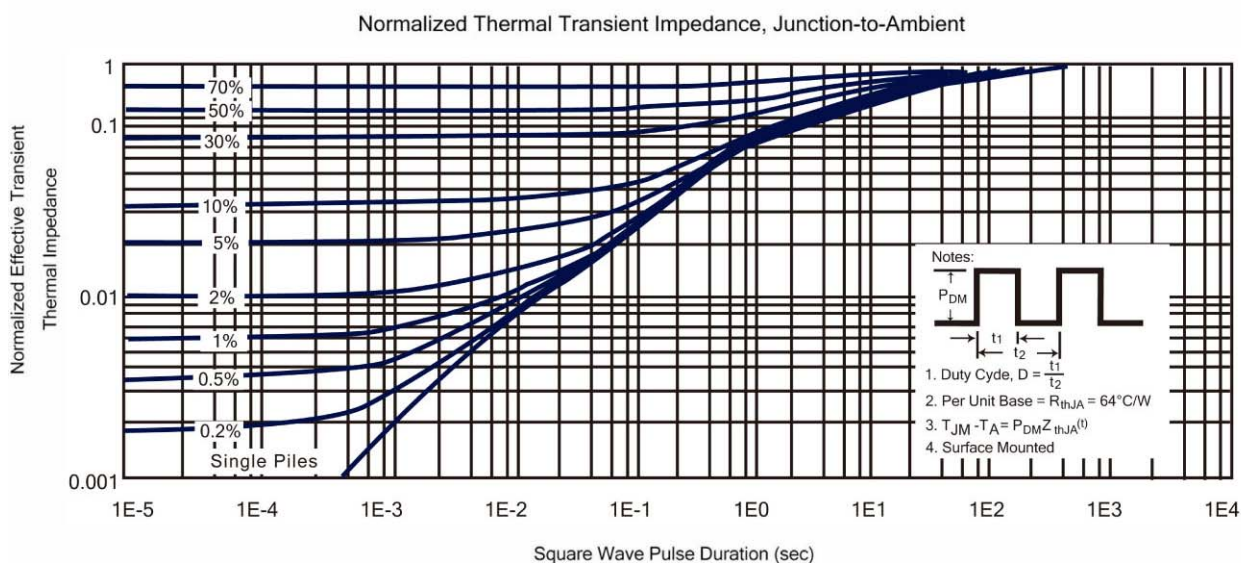
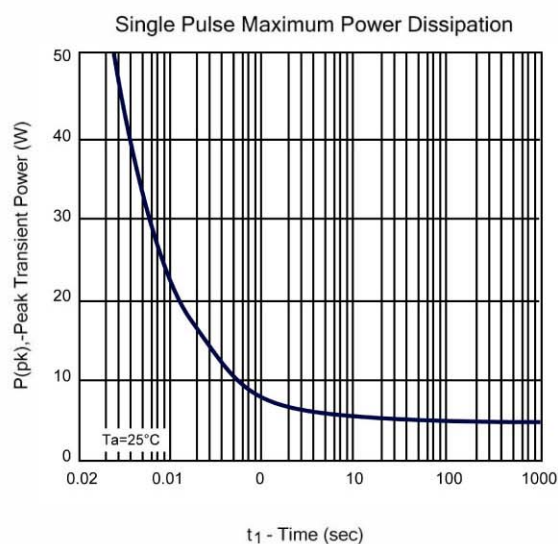
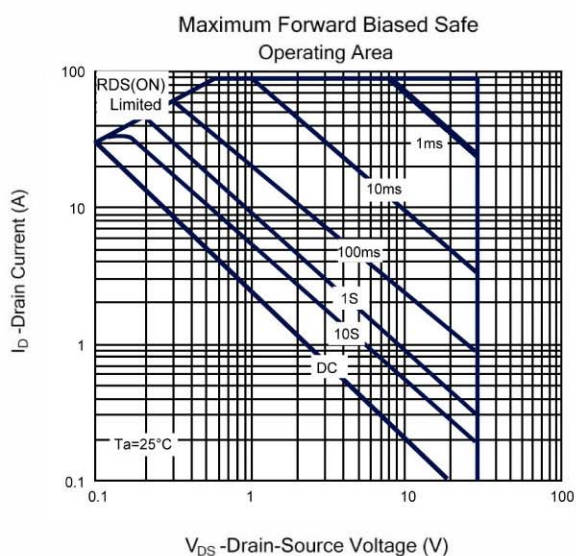
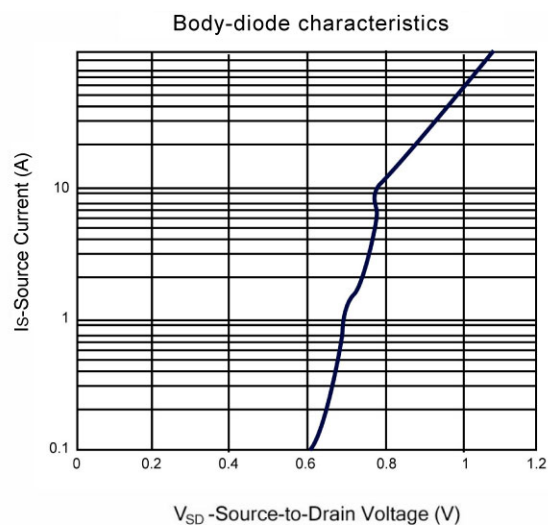
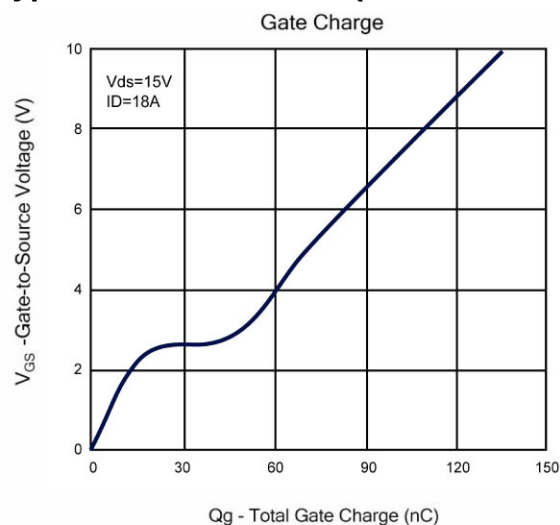
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Typical Characteristics (T_J = 25°C Noted)

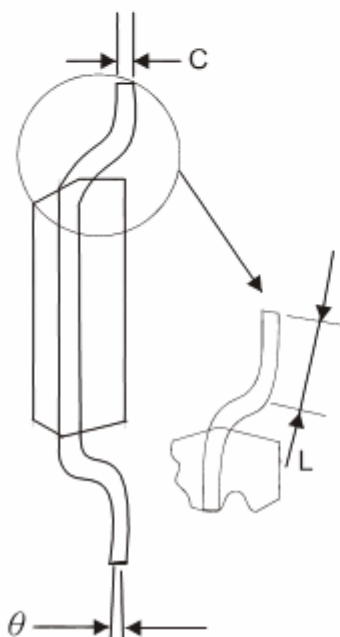
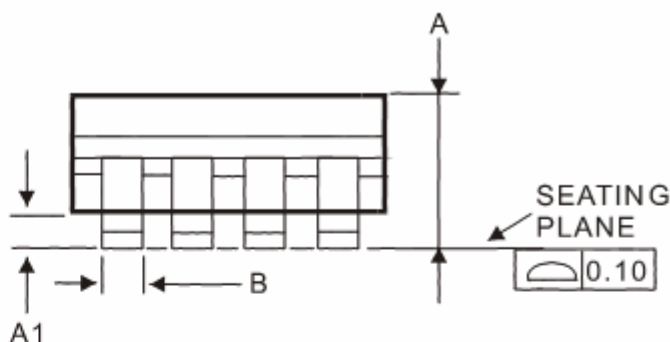
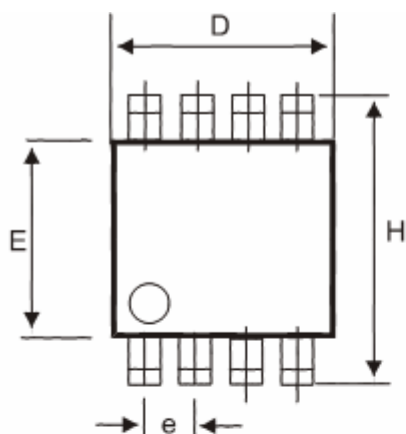


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Typical Characteristics (T_J = 25°C Noted)



SOP-8 Package Outline



DIM	MILLIMETERS (mm)	
	MIN	MAX
A	1.35	1.75
A1	0.10	0.25
B	0.35	0.49
C	0.18	0.25
D	4.80	5.00
E	3.80	4.00
e	1.27 BSC	
H	5.80	6.20
L	0.40	1.25
θ	0°	7°

Note: 1. Refer to JEDEC MS-012AA.

2. Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusions or gate burrs shall not exceed 0.15 mm per side.