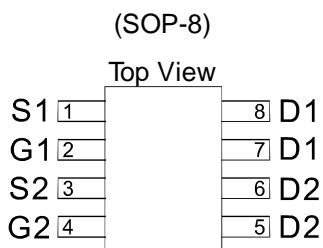


Dual N-Channel 30-V (D-S) MOSFET

GENERAL DESCRIPTION

The ME4970 is the Dual 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.

PIN CONFIGURATION

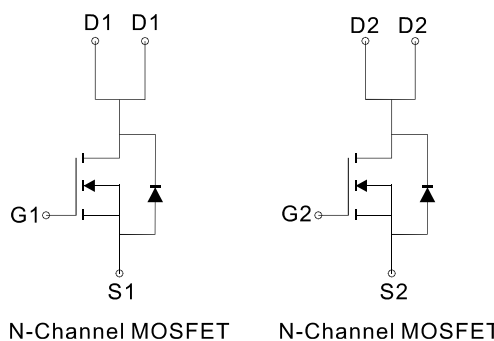


FEATURES

- $R_{DS(ON)} \leq 16m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 20m\Omega @ V_{GS}=4.5V$
- 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: ME4970 (Pb-free)

ME4970-G(Green product-Halogen -free) product)

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

Parameter		Symbol	Maximum Ratings		Unit
Drain-Source Voltage		V_{DS}	30		V
Gate-Source Voltage		V_{GS}	±20		V
Continuous Drain Current	$T_A=25^\circ C$	I_D	10		A
	$T_A=70^\circ C$		8.3		
Pulsed Drain Current		I_{DM}	38		A
Maximum Power Dissipation	$T_A=25^\circ C$	P_D	2		W
	$T_A=70^\circ C$		1.2		
Operating Junction Temperature		T_J	-55 to 150		°C
Parameter		Symbol	Limit		Unit
			Typ	Max	
Thermal Resistance-Junction to Ambient*	$t \leq 10 \text{ sec}$	$R_{\theta JA}$	52	62.5	°C/W
	Steady-State		93	110	
Thermal Resistance-Junction to Foot (Drain)		Steady-State	$R_{\theta JF}$	35	40

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

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

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 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} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =24V, V _{GS} =0V			1	μA
R _{DS(ON)}	Drain-Source On-Resistance ^a	V _{GS} =10V, I _D =10A		13.2	16	mΩ
		V _{GS} =4.5V, I _D =8A		16.8	20	
V _{SD}	Diode Forward Voltage	I _S =8.2A, V _{GS} =0V		0.8	1.2	V
DYNAMIC						
R _g	Gate Resistance	f=1MHz		1		Ω
Q _g	Total Gate Charge	V _{DS} =10V, V _{GS} =4.5V, I _D =8.2A		9.5		nC
Q _{gs}	Post-V _{th} Gate-Source Charge			3.6		
Q _{gd}	Gate-Drain Charge			3.4		
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz		841		pF
C _{oss}	Output Capacitance			250		
C _{rss}	Reverse Transfer Capacitance			71		
t _{d(on)}	Turn-On Delay Time	V _{DD} =15V, R _L =15Ω I _D =1A, V _{GEN} =10V, R _G =6Ω		14		ns
t _r	Turn-On Rise Time			12		
t _{d(off)}	Turn-Off Delay Time			43		
t _f	Turn-Off Fall Time			4		

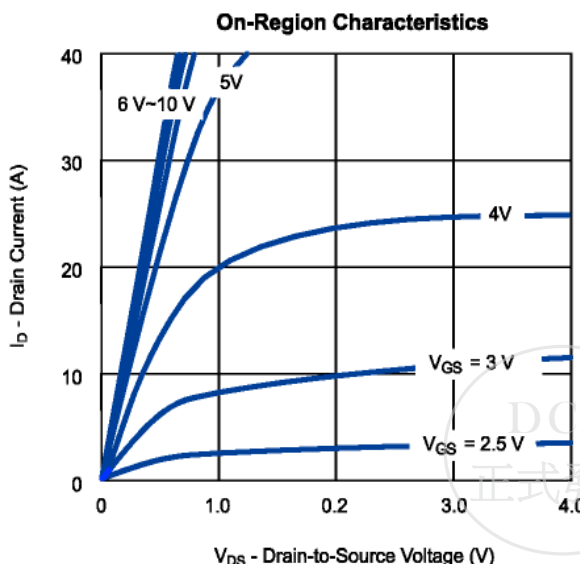
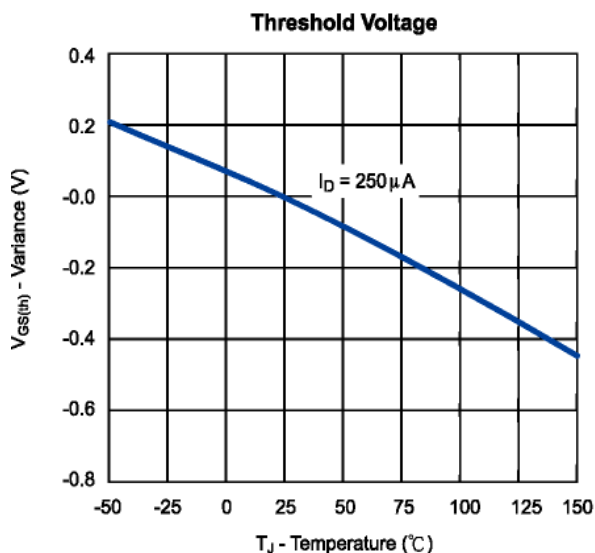
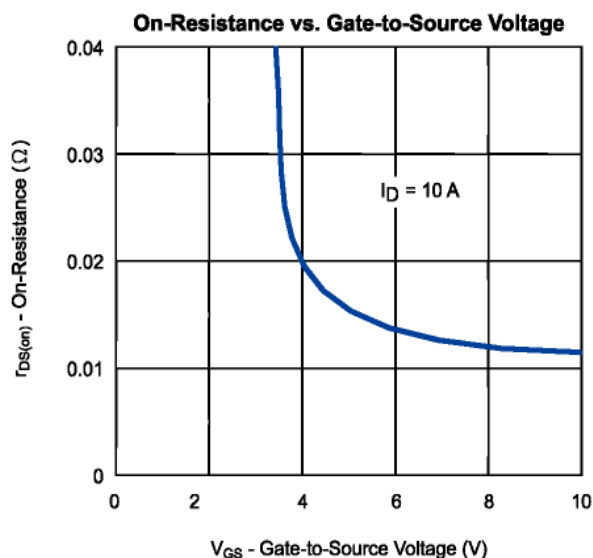
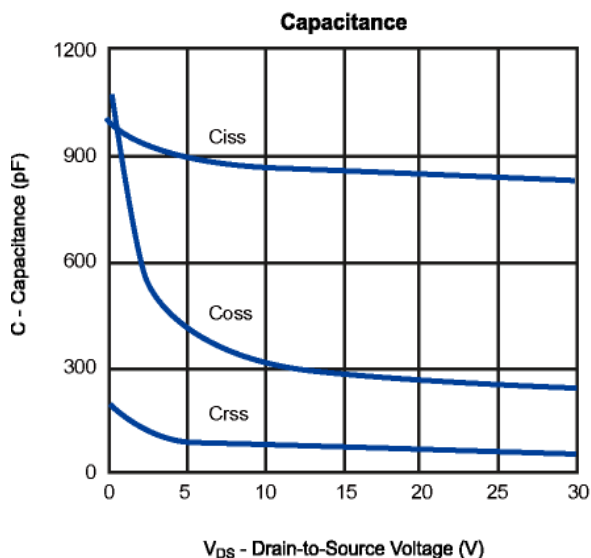
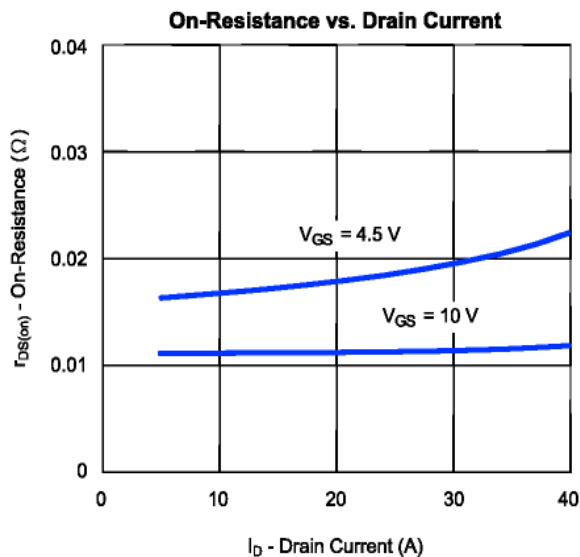
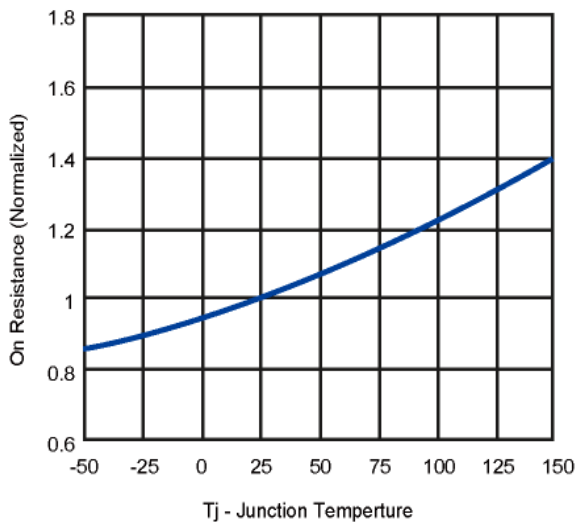
Notes: a. pulse test: pulse width ≤ 300us, duty cycle ≤ 2%, Guaranteed by design, not subject to production testing.

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

DCC
正式發行

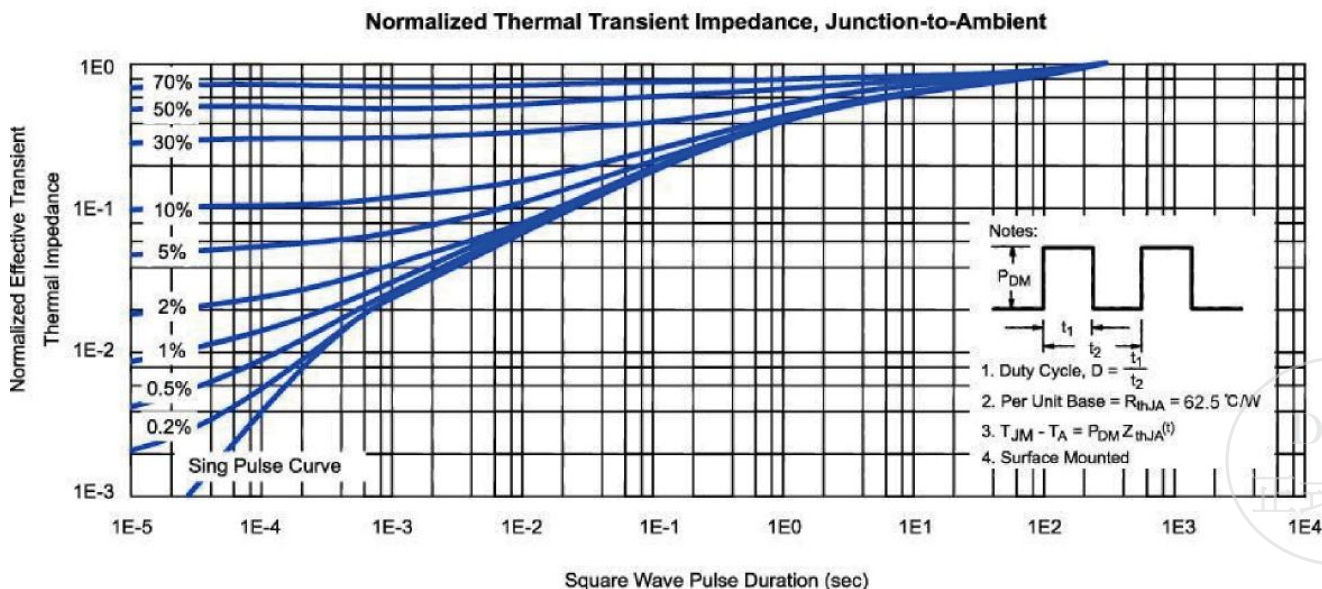
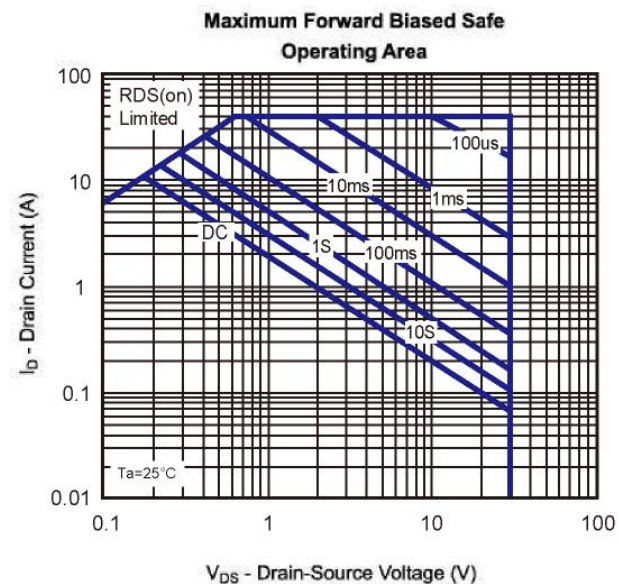
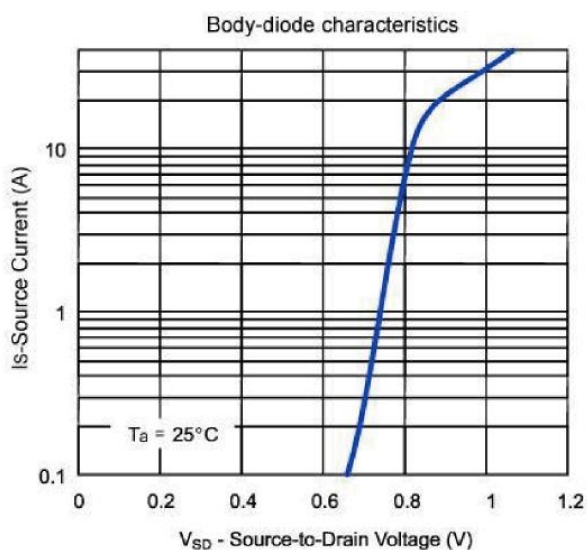
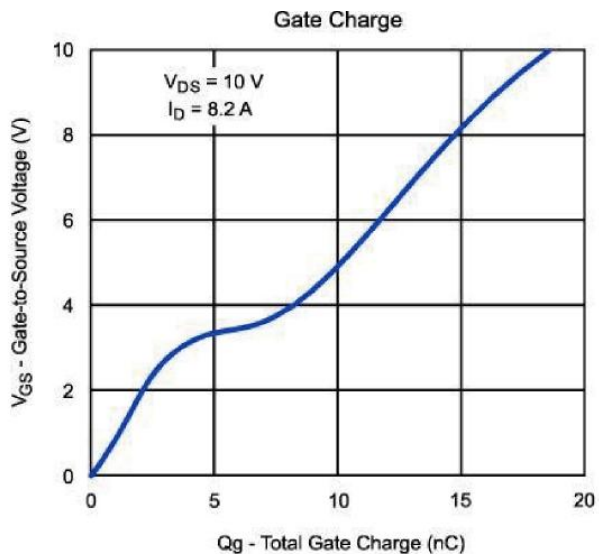
Dual N-Channel 30-V (D-S) MOSFET

Typical Characteristics (T_J = 25°C Noted)
On Resistance vs. Junction Temperature

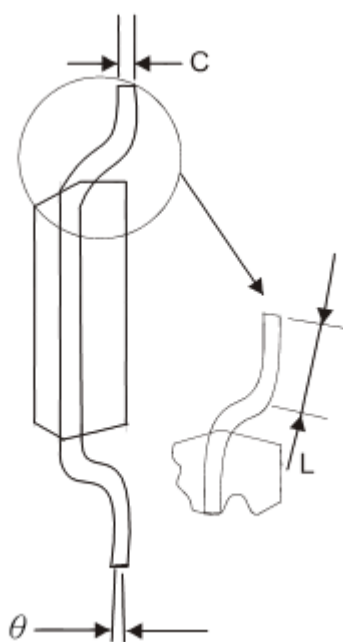
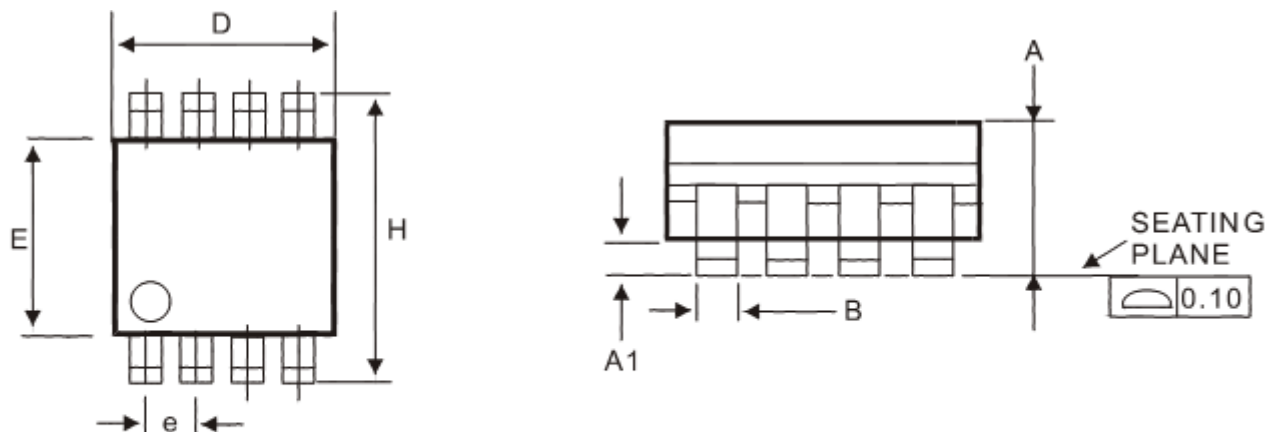


Dual N-Channel 30-V (D-S) MOSFET

Typical Characteristics (T_J = 25°C Noted)



SOP-8 Package Outline



Symbol	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°

