



Dual N-Channel Enhancement Mode MOSFET

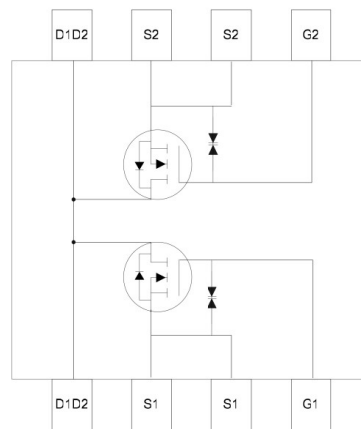
• Features

For a single mosfet
 $V_{DS}(V) = 20V$, $I_D = 7A$,
 $R_{DS(ON)} = 13m\Omega @ V_{GS} = 4.50V$
 $R_{DS(ON)} = 16.5m\Omega @ V_{GS} = 2.50V$

• General Description

Super high dense cell design for low $R_{DS(ON)}$.
 Rugged and reliable.
 Surface Mount package.

• Pin Configuration



• Absolute Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Drain Current-Continuous	$I_D @ T_J = 25^\circ C^a$	7	A
	$I_D @ T_J = 70^\circ C^a$	5.5	A
-Pulsed ^b	I_{DM}	26	A
Drain-Source Diode Forward Current ^a	I_S	2	A
Maximum Power Dissipation ^a	P_D	1.5	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

Notes:

a. mounted on a 1in2 FR-4 board with 2oz. Copper in a still air environment at $25^\circ C$, the current rating is based on the DC (<10s) test conditions, for each single die.

b. Pulse Test: Pulse Width < 300 μs , Duty Cycle < 2%.



● **Electrical Characteristics** @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS (Note 2)						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 100	nA
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.72	1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 7A$		13	16	m Ω
		$V_{GS} = 2.5V, I_D = 5.5A$		16.5	20	
Forward Transconductance	G_{FS}	$V_{DS} = 10V, I_D = 5.5A$		5		S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$F = 1.0MHz, V_{DS} = 10V, V_{GS} = 0V$		780		pF
Output Capacitance	C_{OSS}			100		
Reverse Transfer Capacitance	C_{RSS}			80		
Total Gate Charge	Q_G	$V_{DS} = 10V, I_D = 5.5A, V_{GS} = 4.5V$		7		nC
Gate-Source Charge	Q_{GS}			1.2		
Gate-Drain	Q_{GD}			1.9		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$T_{D(ON)}$	$V_{DD} = 10V, I_D = 1A,$ $V_{GEN} = 4.5V, R_G = 6\Omega$		8		nS
Turn-Off Delay Time	$T_{D(OFF)}$			18		

Note: 1. Short duration test pulse used to minimize self-heating effect.



● Typical Performance Characteristics TSSOP8

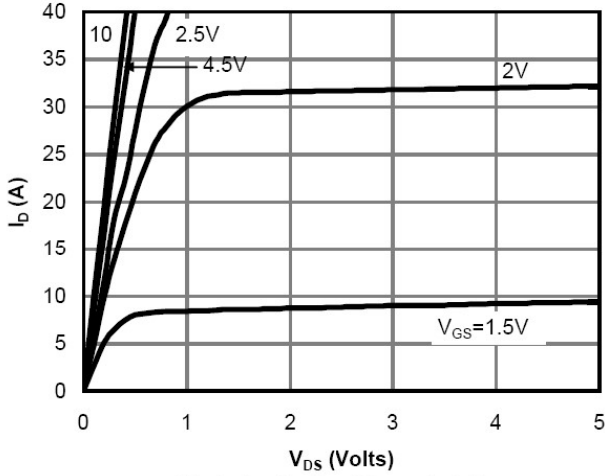


Fig 1: On-Region Characteristics

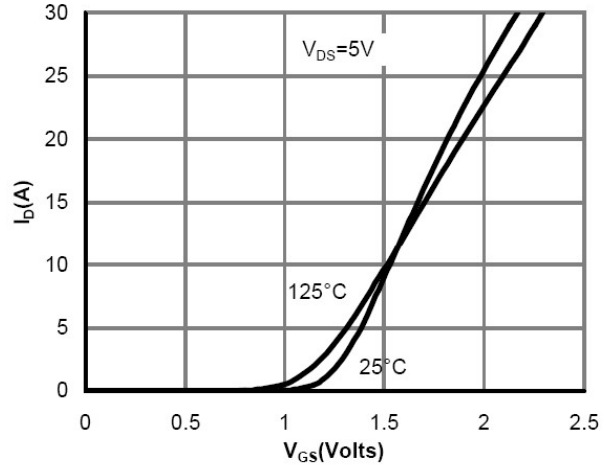


Figure 2: Transfer Characteristics

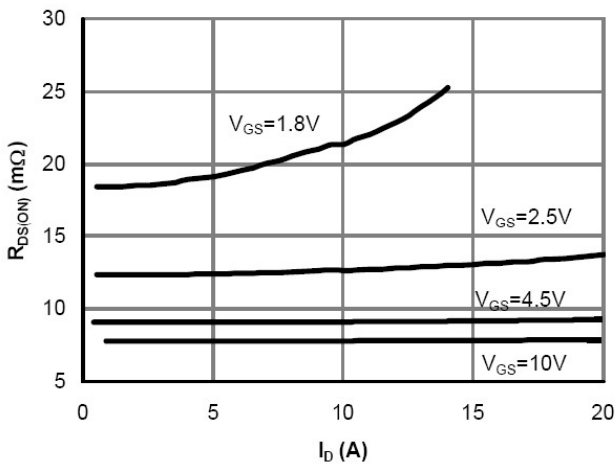


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

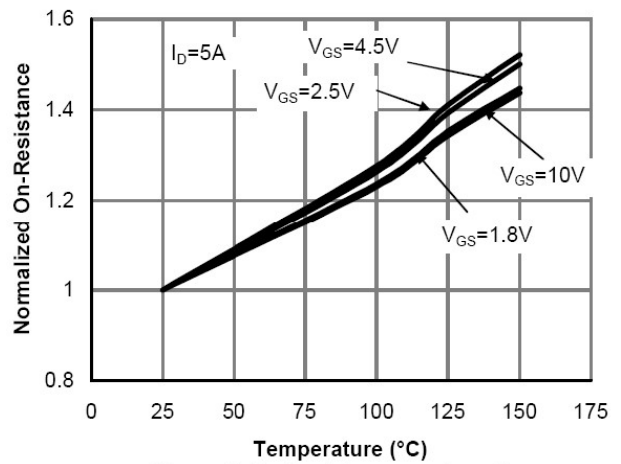


Figure 4: On-Resistance vs. Junction Temperature

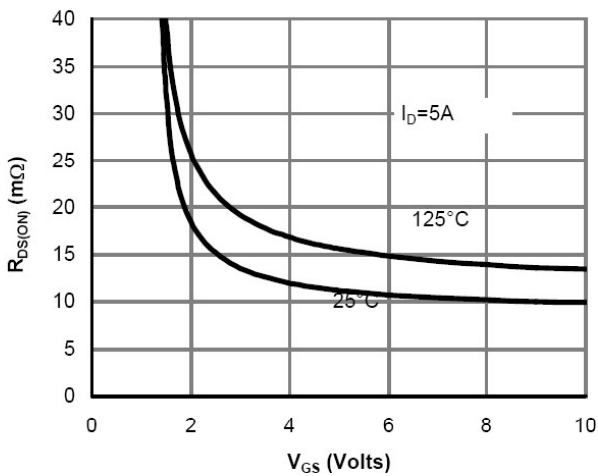


Figure 5: On-Resistance vs. Gate-Source Voltage

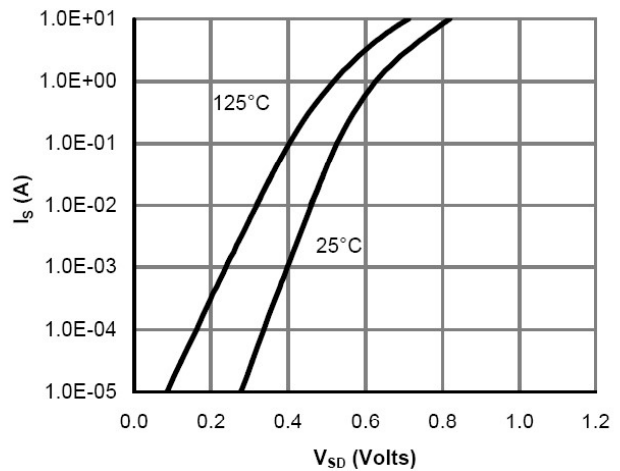
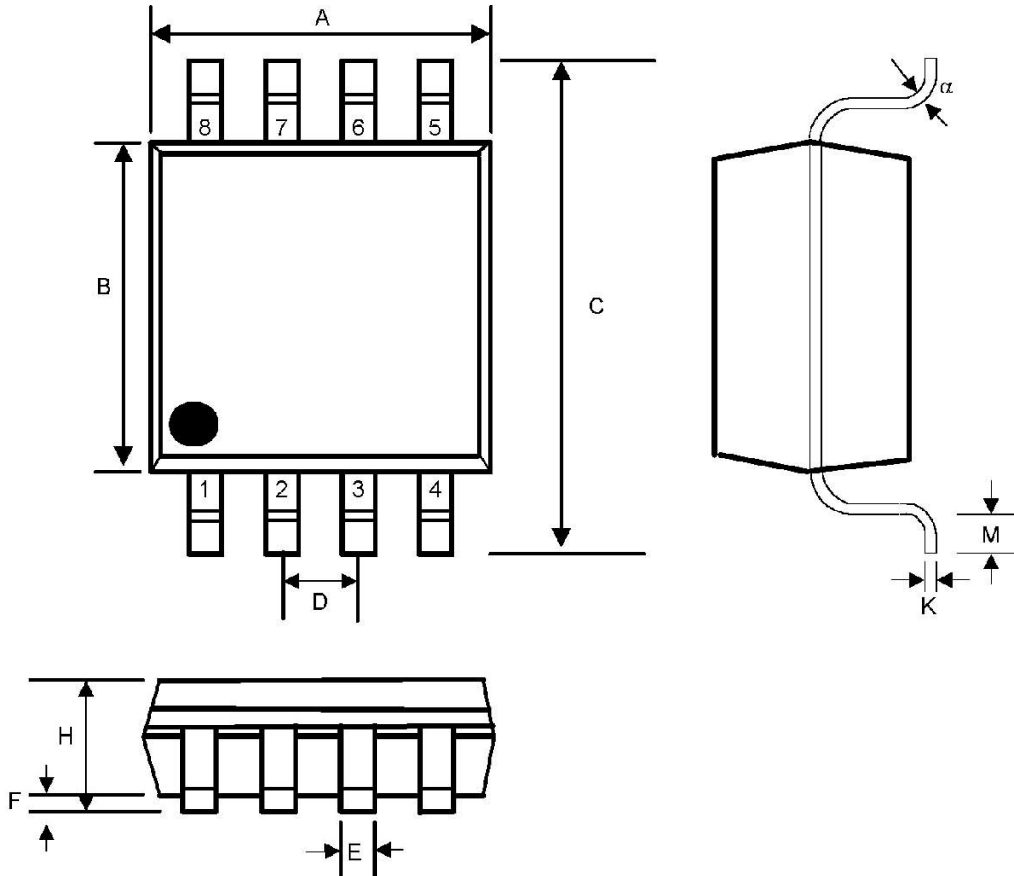


Figure 6: Body-Diode Characteristics



● Package Information



Symbol	Dimension mm			Dimension in inch		
	Min	Nom	Max	Min	Nom	Max
A	2.90	3.0	3.1	0.114	0.118	0.122
B	4.30	4.40	4.50	0.169	0.173	0.177
C	6.20	6.40	6.60	0.244	0.252	0.260
D	0.65(TYP)			0.026(TYP)		
E	0.25	0.275	0.30	0.010	0.011	0.012
F	0.05	0.10	0.15	0.002	0.004	0.006
H	1.05		1.20	0.041		0.047
K	0.127(TYP)			0.005(TYP)		
M	0.50	0.60	0.70	0.020	0.024	0.028
α	0°		8°	0°		8°