HM2802D

20V Dual N-Channel Enhancement-Mode MOSFET 20V Dual N 沟道增强型 MOS 管

VDS= 20V

RDS(ON), Vgs@4.5V, Ids@3.0A = 40mΩ

RDS(ON), Vgs@2.5V, Ids@1.4A = 53mΩ

RDS(ON), Vgs@1.8V, Ids@1.4A = 70mΩ

Features 特性

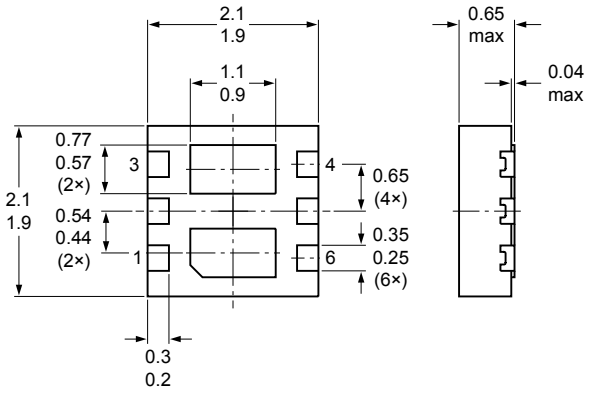
Advanced trench process technology 高级的加工技术

High Density Cell Design For Ultra Low On-Resistance 极低的导通电阻高密度的单元设计

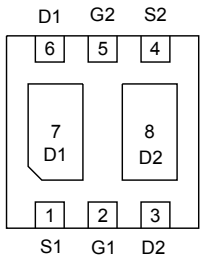
High Power and Current handing capability 大功率高电流

Ideal for Li ion battery pack applications 锂电池的理想选择

Package Dimensions 封装尺寸及外形图

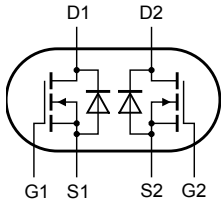


Dimensions in mm



Transparent top view

DFN2*2-6



Maximum Ratings and Thermal Characteristics (TA = 25oC unless otherwise noted) 25 °C 极限参数和热特性

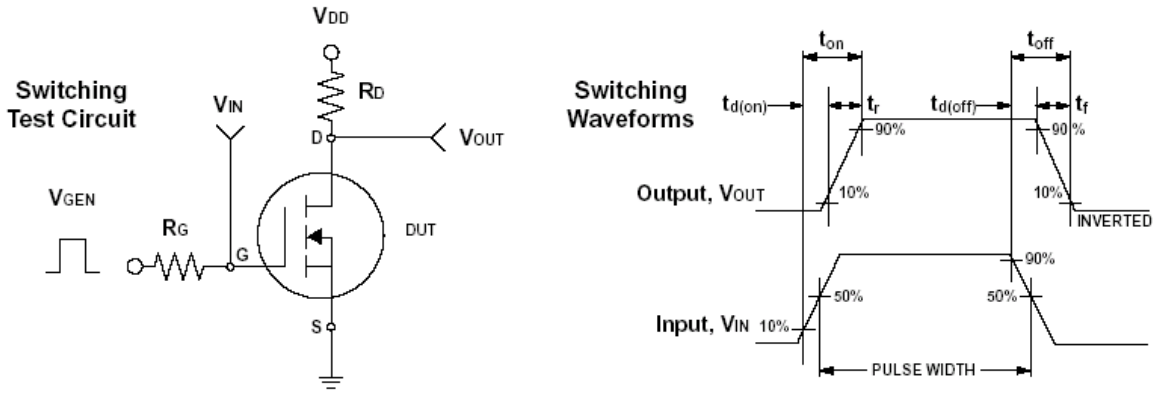
Parameter 极限参数		Symbol 符号	Limit 范围	Unit 单位
Drain-Source Voltage 漏源电压		V_{DS}	20	V
Gate-Source Voltage 栅源电压		V_{GS}	± 12	
Continuous Drain Current 连续漏极电流		I_D	3.0	A
Pulsed Drain Current 脉冲漏极电流		I_{DM}	12	
Maximum Power Dissipation 最大耗散功率	TA = 25°C	P_D	0.8	W
	TA = 75°C		0.5	
Operating Junction and Storage Temperature Range 使用及储存温度		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) 结环热阻		$R_{\theta JA}$	62.5	°C/W

Device mounted on an FR4 PCB, single-sided copper, tin-plated and mounting pad for drain 6 cm^2, t ≤ 5 s.

ELECTRICAL CHARACTERISTICS 一般电气特性

Parameter 参数	符号	Test Condition 测试条件	最小值	典型值	最大值	单位
Static 静态参数						
Drain-Source Breakdown Voltage 漏源击穿电压	BV_{DSS}	V_{GS} = 0V, I_D = 250uA	20	-	-	V
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 3.0A		32.0	40.0	mΩ
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	V_{GS} = 2.5V, I_D = 1.4A		40.0	53.0	
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	V_{GS} = 1.8V, I_D = 1.4A		60.0	75.0	
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = 250uA	0.4		1.0	V
Zero Gate Voltage Drain Current 零栅压漏极电流	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V			1	uA
Gate Body Leakage 漏极短路时截止栅电流	I_{GSS}	V_{GS} = ± 12V, V_{DS} = 0V			±100	nA
Forward Transconductance 正向跨导	g_{fs}	V_{DS} = 10V, I_D = 3.0A		5		S
Dynamic 动态参数						
Total Gate Charge 栅极总电荷	Q_g	V_{DS} = 10V, I_D = 3.0A V_{GS} = 4.5V		5	7	nC
Gate-Source Charge 栅-源极电荷	Q_{gs}			1		
Gate-Drain Charge 栅-漏极电荷	Q_{gd}			1.5		
Turn-On Delay Time 导通延迟时间	$t_{d(on)}$	V_{DD} = 10V, R_G = 6Ω I_D = 1A, V_{GS}= 4.5V		8		ns
Turn-On Rise Time 导通上升时间	t_r			15		
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$			40		
Turn-Off Fall Time 关断下降时间	t_f			16		
Input Capacitance 输入电容	C_{iss}	V_{DS} = 8V, V_{GS} = 0V f = 1.0 MHz		660		pF
Output Capacitance 输出电容	C_{oss}			87		
Reverse Transfer Capacitance 反向传输电容	C_{rss}			74		
Source-Drain Diode 源漏二极管参数						
Max. Diode Forward Current 最大正向电流	I_S				1.2	A
Diode Forward Voltage 正向电压	V_{SD}	I_S = 1.7A, V_{GS} = 0V			1.2	V

Note: Pulse test: pulse width <= 300us, duty cycle<= 2% 注意：脉冲测试：脉冲宽度<= 300us 死区<= 2%



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

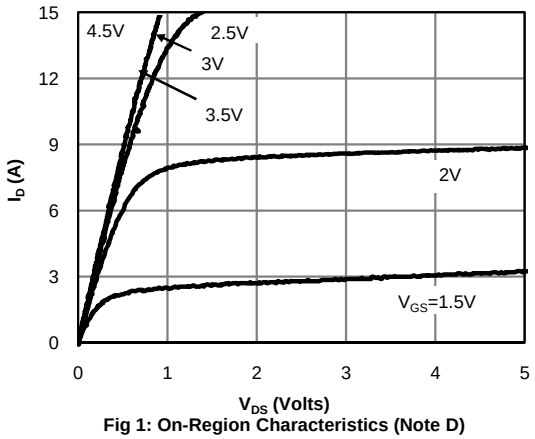


Fig 1: On-Region Characteristics (Note D)

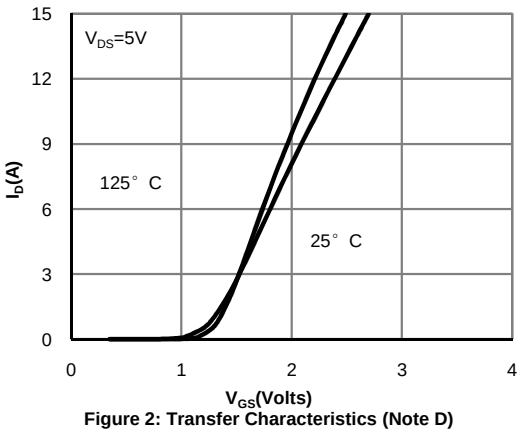


Figure 2: Transfer Characteristics (Note D)

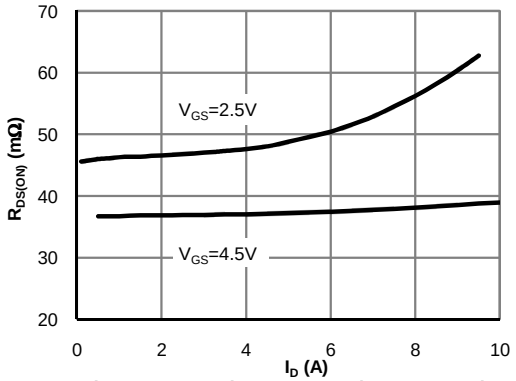


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note D)

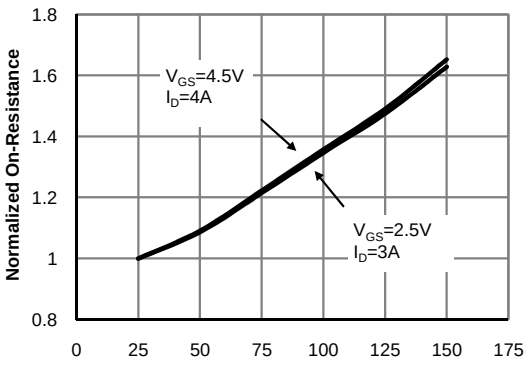


Figure 4: On-Resistance vs. Junction Temperature (Note D)

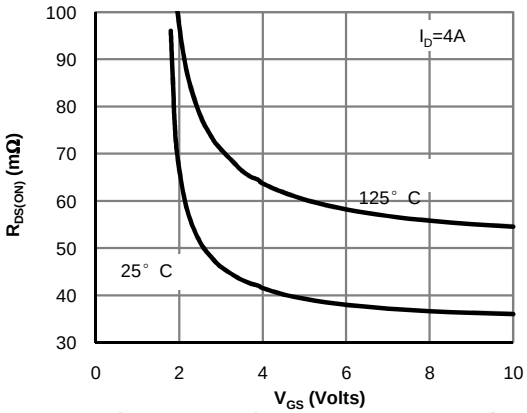


Figure 5: On-Resistance vs. Gate-Source Voltage (Note D)

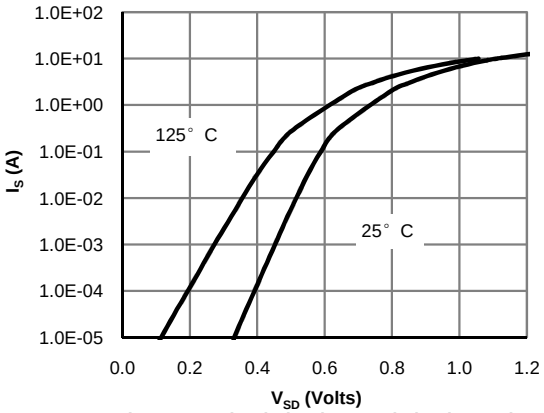


Figure 6: Body-Diode Characteristics (Note D)