

FDS9926A

20V N-Channel Enhancement-Mode MOSFET

VDS= 20V

RDS(ON), Vgs@2.5V, Ids@5.2A <40mΩ

RDS(ON), Vgs@4.5V, Ids@6A < 30mΩ

Features

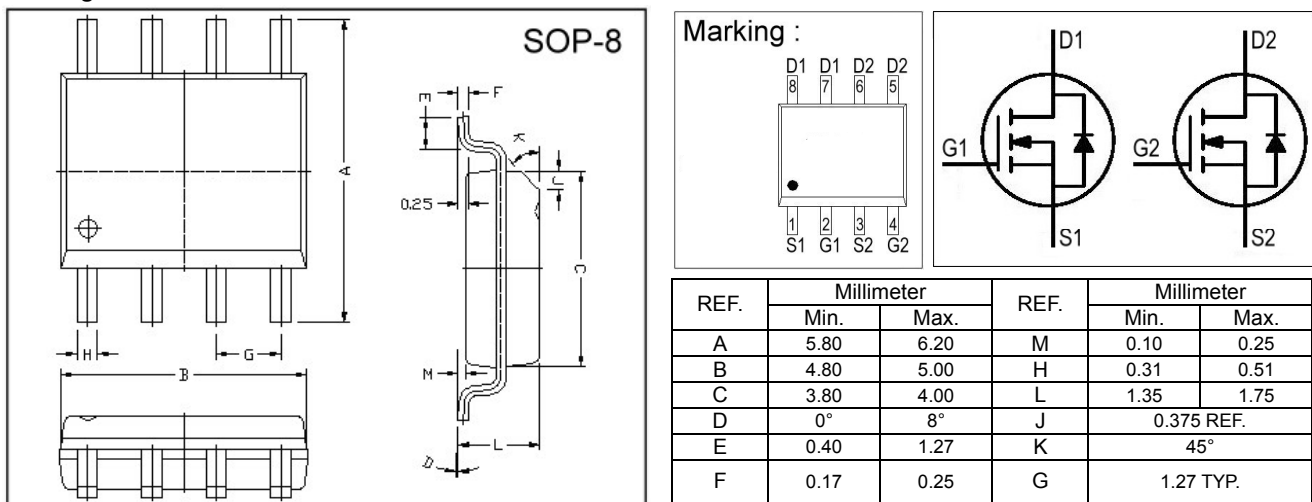
Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

High Power and Current handling capability

Ideal for Li ion battery pack applications

Package Dimensions



Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D	6	A
Pulsed Drain Current ¹⁾	I_{DM}	20	
Maximum Power Dissipation	P_D	2	W
		1.28	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾	$R_{\theta JA}$	62.5	°C/W

¹⁾ Notes

¹⁾ Pulse width limited by maximum junction temperature.

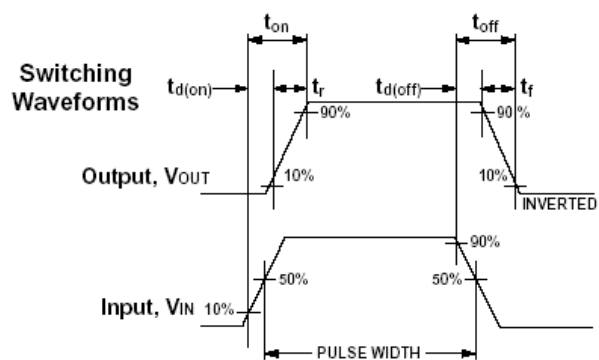
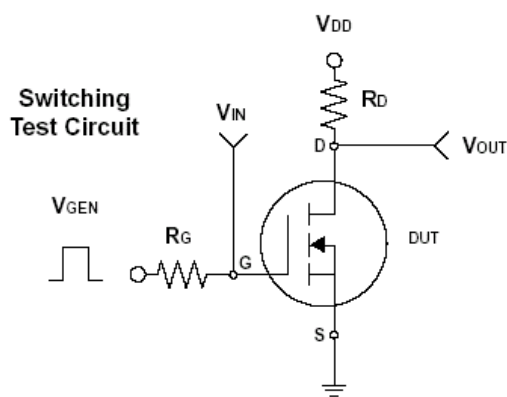
²⁾ Surface Mounted on FR4 Board, $t \leq 5$ sec.

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ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250uA	20	-	-	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 2.5V, I _D = 5.2A		32.0	40.0	mΩ
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 4.5V, I _D = 6A		23.0	30.0	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = 250uA	0.5		1.2	V
Zero Gate Voltage Drain Current 0	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	uA
Gate Body Leakage	I _{GSS}	V _{GS} = ± 10V, V _{DS} = 0V			±100	nA
Forward Transconductance	g _{fs}	V _{DS} = 10V, I _D = 6A		5	—	S
Dynamic ¹⁾						
Total Gate Charge	Q _g	V _{DS} = 10V, I _D = 6A V _{GS} = 4.5V		5	7	nC
Gate-Source Charge	Q _{gs}			1		
Gate-Drain Charge	Q _{gd}			1.5		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, R _G = 6Ω I _D = 1A, V _{GS} = 4.5V		8	20	ns
Turn-On Rise Time	t _r			10	20	
Turn-Off Delay Time	t _{d(off)}			22	45	
Turn-Off Fall Time	t _f			6	15	
Input Capacitance	C _{iss}	V _{DS} = 8V, V _{GS} = 0V f = 1.0 MHz		565		pF
Output Capacitance	C _{oss}			105		
Reverse Transfer Capacitance	C _{rss}			75		
Source-Drain Diode						
Max. Diode Forward Current	I _S				1.7	A
Diode Forward Voltage	V _{SD}	I _S = 1.7A, V _{GS} = 0V			1.2	V

¹⁾ Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$



Typical Characteristics (T_J = 25°C Noted)

