

FDS9435A

-30V P-Channel Enhancement Mode MOSFET

VDS= -30V

RDS(ON), Vgs@-10V, Ids@-5.3A = 60mΩ

RDS(ON), Vgs@-4.5V, Ids@-4.2A = 90mΩ

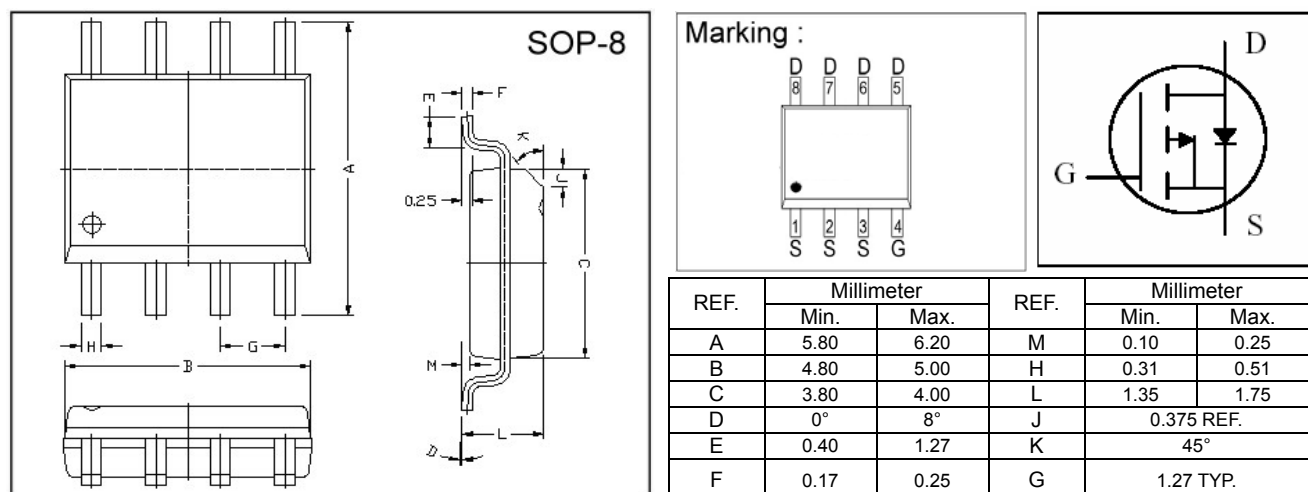
Features

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

Improved Shoot-Through FOM

Package Dimensions



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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current		I_D	-5.3	A
Pulsed Drain Current ¹⁾		I_{DM}	-20	
Maximum Power Dissipation	TA = 25°C	P_D	2.5	W
	TA = 75°C		1.2	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Case Thermal Resistance		$R_{\theta JC}$	24	°C/W
Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾		$R_{\theta JA}$	62.5	

Notes

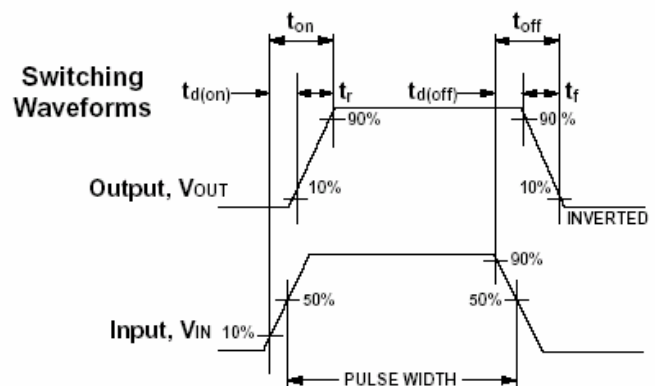
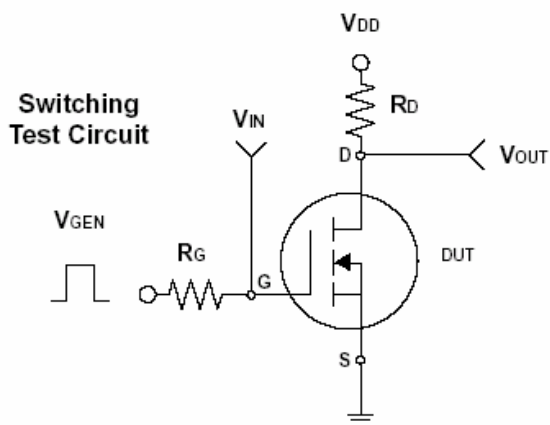
¹⁾ Pulse width limited by maximum junction temperature.

²⁾ Surface Mounted on FR4 Board, t ≤ 5 sec.

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = -250uA	-30			V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -4.2A		70.0	90.0	mΩ
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -5.3A		50.0	60.0	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = -250uA	-1		-3	V
Zero Gate Voltage Drain Current 0	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			1	uA
Gate Body Leakage	I _{GSS}	V _{GS} = ± 16V, V _{DS} = 0V			±100	nA
Forward Transconductance	g _{fs}	V _{DS} = -10V, I _D = -5.3A		10	—	S
Dynamic ¹⁾						
Total Gate Charge	Q _g	V _{DS} =-15V, I _D = -5.3A V _{GS} = -10V		9.35		nC
Gate-Source Charge	Q _{gs}			3.43		
Gate-Drain Charge	Q _{gd}			1.7		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -15V, R _L = 15Ω I _D = -1A, V _{GEN} = -10V R _G = 6Ω		10.8		ns
Turn-On Rise Time	t _r			2.33		
Turn-Off Delay Time	t _{d(off)}			22.53		
Turn-Off Fall Time	t _f			3.87		
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V f = 1.0 MHz		551.57		pF
Output Capacitance	C _{oss}			90.96		
Reverse Transfer Capacitance	C _{rss}			60.79		
Source-Drain Diode						
Max. Diode Forward Current	I _S				-2.6	A
Diode Forward Voltage	V _{SD}	I _S = -2.6A, V _{GS} = 0V			-1.3	V

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



Characteristics Curve

Typical Characteristics ($T_J = 25^\circ\text{C}$ Noted)

