

-30V P-Channel Enhancement Mode MOSFET

**VDS= -30V**

RDS(ON), Vgs @-10V, Ids @-4.5A = 63mΩ

RDS(ON), Vgs @-4.5V, Ids @-3.6A = 90mΩ

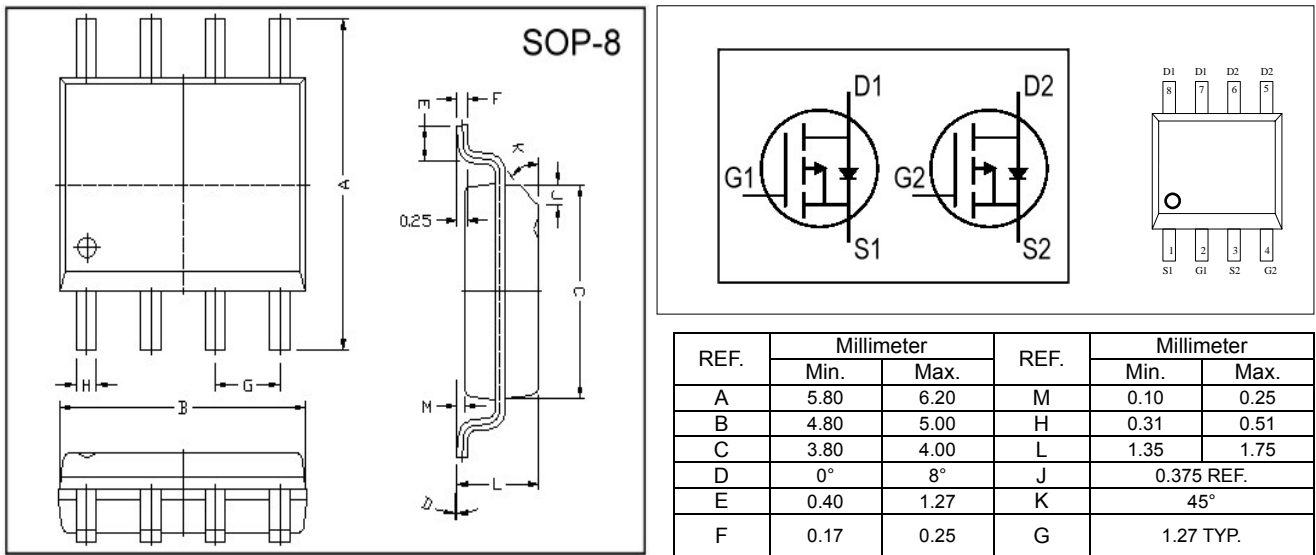
**Features**

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 = 25oC unless otherwise noted)**

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V <sub>DS</sub>	-30	V	
Gate-Source Voltage	V <sub>GS</sub>	± 20		
Continuous Drain Current (t ≤ 10s)	I <sub>D</sub>	-5.3	A	
Pulsed Drain Current <sup>1)</sup>	I <sub>DM</sub>	-20		
Maximum Power Dissipation	P <sub>D</sub>	TA = 25°C	2.5	W
		TA = 75°C	1.2	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C	
Junction-to-Ambient Thermal Resistance (PCB mounted) <sup>2)</sup>	R <sub>θJA</sub>	62.5	°C/W	

Notes

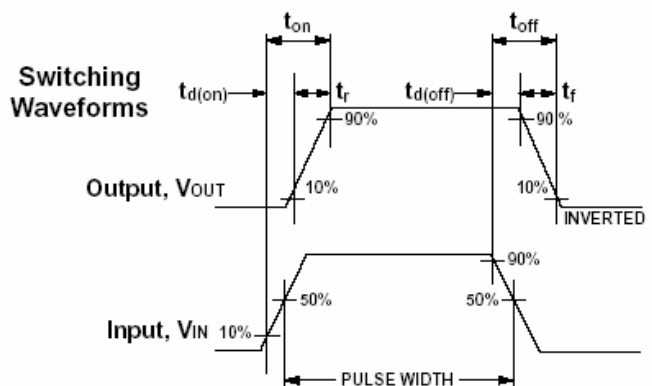
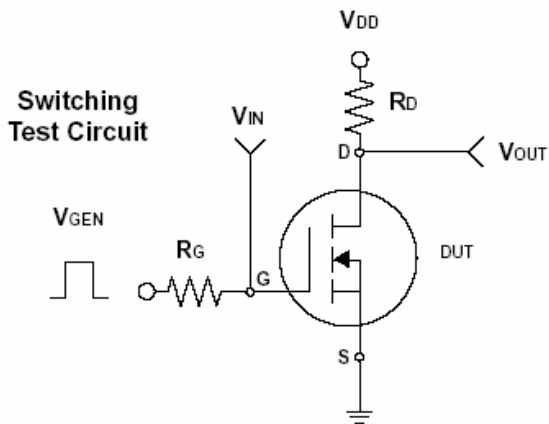
1) Pulse width limited by maximum junction temperature.

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

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -3.6A$		70	90	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.5A$		50	63	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	1.7	-3	V
Zero Gate Voltage Drain Current 0	$I_{DSS}$	$V_{DS} = -24V, V_{GS} = 0V$			-1	uA
Gate Body Leakage	$I_{GSS}$	$V_{GS} = \pm 16V, V_{DS} = 0V$			± 100	nA
Forward Transconductance	$g_{fs}$	$V_{DS} = -10V, I_D = -5.3A$		10	—	S
<b>Dynamic<sup>1)</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = -15V, I_D = -5.3A$ $V_{GS} = -10V$		28		nC
Gate-Source Charge	$Q_{gs}$			3		
Gate-Drain Charge	$Q_{gd}$			7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15V, R_L = 15\Omega$ $I_D = -1A, V_{GEN} = -10V$ $R_G = 6\Omega$		9		ns
Turn-On Rise Time	$t_r$			15		
Turn-Off Delay Time	$t_{d(off)}$			75		
Turn-Off Fall Time	$t_f$			40		
Input Capacitance	$C_{iss}$	$V_{DS} = -15V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		745		pF
Output Capacitance	$C_{oss}$			440		
Reverse Transfer Capacitance	$C_{rss}$			120		
<b>Source-Drain Diode</b>						
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 ≤ 300us, duty cycle ≤ 2%



Typical Characteristics (T<sub>J</sub> = 25°C Noted)

