

**30V N-Channel Enhancement Mode MOSFET**

**$V_{DS} = 30V$**

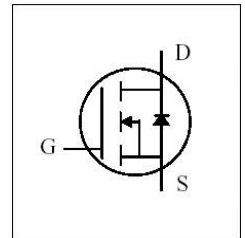
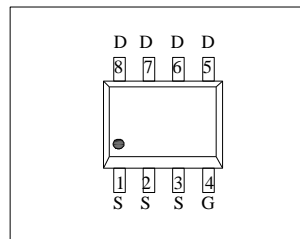
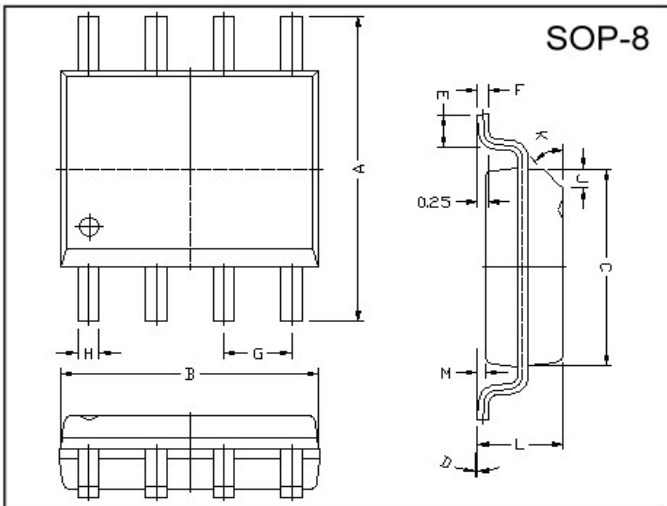
**$R_{DS(ON)}, V_{GS} @ 10V, I_{ds} @ 12A = 10.5m\Omega$**

**$R_{DS(ON)}, V_{GS} @ 4.5V, I_{ds} @ 12A = 15m\Omega$**

**Features**

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- Fully Characterized Avalanche Voltage and Current
- Improved Shoot-Through FOM

**Package Dimensions**



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	M	0.10	0.25
B	4.80	5.00	H	0.35	0.49
C	3.80	4.00	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.40	0.90	K	45°	
F	0.19	0.25	G	1.27 TYP.	

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

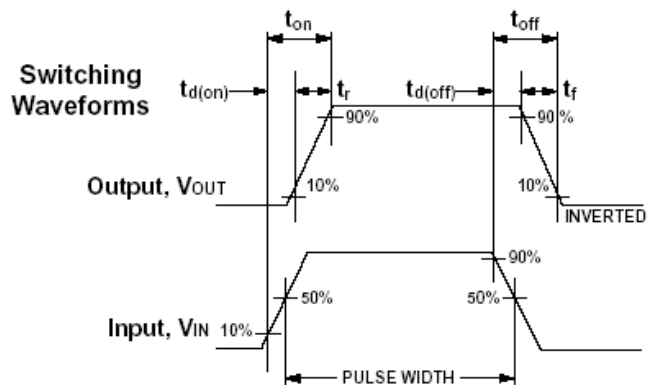
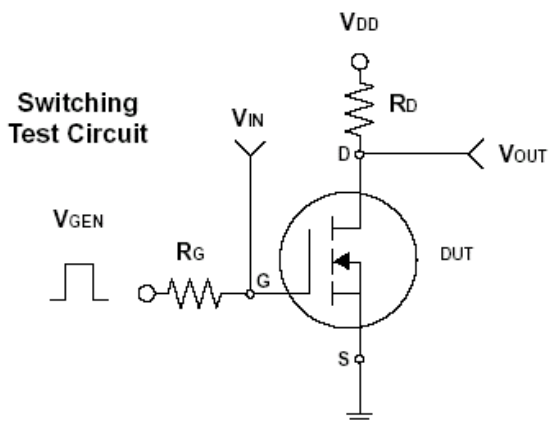
Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	$V_{DS}$	30	V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current	$I_D$	12	A	
Pulsed Drain Current	$I_{DM}$	48		
Maximum Power Dissipation	$P_D$	TA = 25°C	2.5	W
		TA = 75°C	1.2	
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	°C	
Avalanche Energy with Single Pulse	EAS	150	mJ	
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	25	°C/W	
Junction-to-Ambient Thermal Resistance (PCB mounted)	$R_{\theta JA}$	50		

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**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	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 12A$		11.0	15.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 12A$		8.5	10.5	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.8	3	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$			1	uA
Gate Body Leakage	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			±100	nA
Forward Transconductance	$g_{fs}$	$V_{DS} = 15V, I_D = 12A$		64	—	S
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS} = 15V, I_D = 12A$ $V_{GS} = 5V$		12	45	nC
Gate-Source Charge	$Q_{gs}$			4.5		
Gate-Drain Charge	$Q_{gd}$			3.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15V, R_G = 6\Omega$ $I_D = 1A, V_{GS} = 10V$		22	35	ns
Turn-On Rise Time	$t_r$			13	20	
Turn-Off Delay Time	$t_{d(off)}$			82	125	
Turn-Off Fall Time	$t_f$			30	45	
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		1180		pF
Output Capacitance	$C_{oss}$			270		
Reverse Transfer Capacitance	$C_{rss}$			145		
<b>Source-Drain Diode</b>						
Max. Diode Forward Current	$I_S$				2.0	A
Diode Forward Voltage	$V_{SD}$	$I_S = 2A, V_{GS} = 0V$			1.5	V

Note: Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%



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

