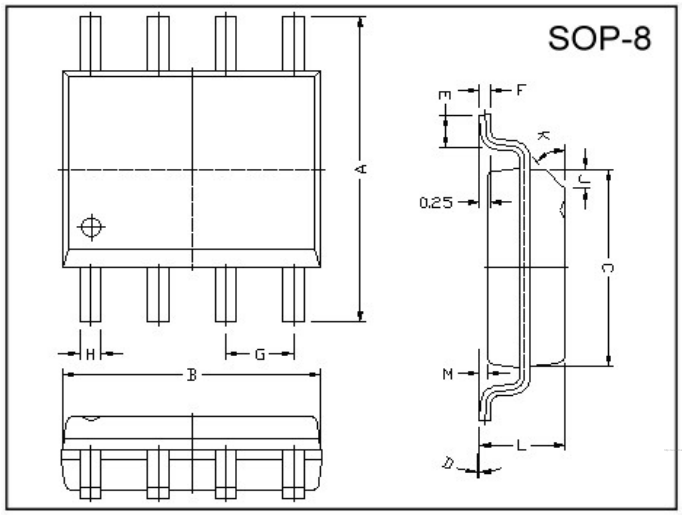
30V P-Channel Enhancement Mode MOSFET

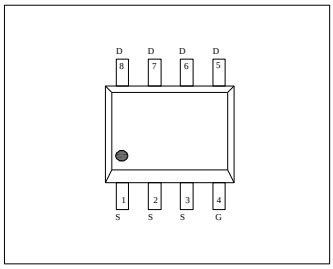
VDS= -30V
RDS(ON), Vgs@-10V, Ids@-10.5A = 18mΩ
RDS(ON), Vgs@-4.5V, Ids@-6.0A = 30mΩ

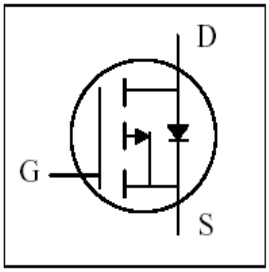
Features

Advanced trench process technology
High Density Cell Design For Ultra Low On-Resistance

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 = 25oC 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	-10.5	A
Pulsed Drain Current		I_{DM}	-50	
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-Ambient Thermal Resistance (PCB mounted)		$R_{\theta JA}$	50	°C/W

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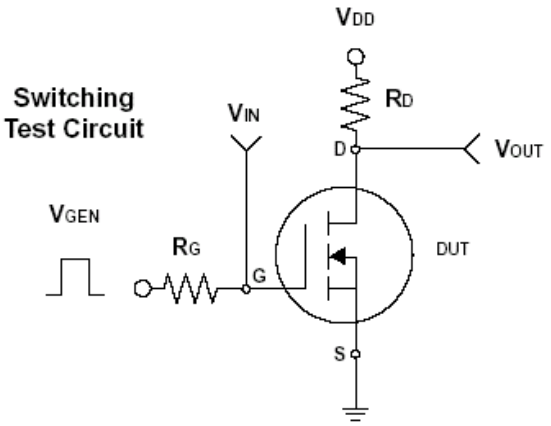
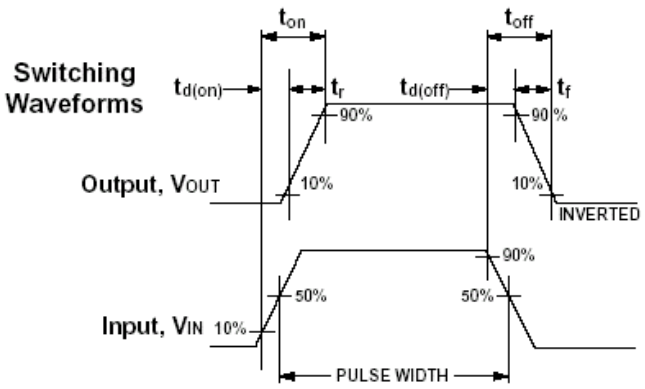
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = -250uA	-30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -10.5A		15.0	18.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = -6.0A		20.0	30.0	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = -250uA	-1	-1.4	-3	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0V			-1	uA
Gate Body Leakage	I_{GSS}	V_{GS} = ± 20V, V_{DS} = 0V			± 100	nA
Forward Transconductance	g_{fs}	V_{DS} = -10V, I_D = -5A		21	__	S
Dynamic						
Total Gate Charge	Q_g	V_{DS} = -15V, I_D = -9.1A V_{GS} = 10V		37.2		nC
Gate-Source Charge	Q_{gs}			9.84		
Gate-Drain Charge	Q_{gd}			7.52		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15V, RL=15Ω I_D = -1A, V_{GEN} = -10V R_G = 6Ω				ns
Turn-On Rise Time	t_r					
Turn-Off Delay Time	$t_{d(off)}$					
Turn-Off Fall Time	t_f					
Input Capacitance	C_{iss}	V_{DS} = 8V, V_{GS} = 0V f = 1.0 MHz		1740		pF
Output Capacitance	C_{oss}			225		
Reverse Transfer Capacitance	C_{rss}			225		
Source-Drain Diode						
Max. Diode Forward Current	I_S					A
Diode Forward Voltage	V_{SD}	I_S = -2.1A, V_{GS} = 0V		0.78		V

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





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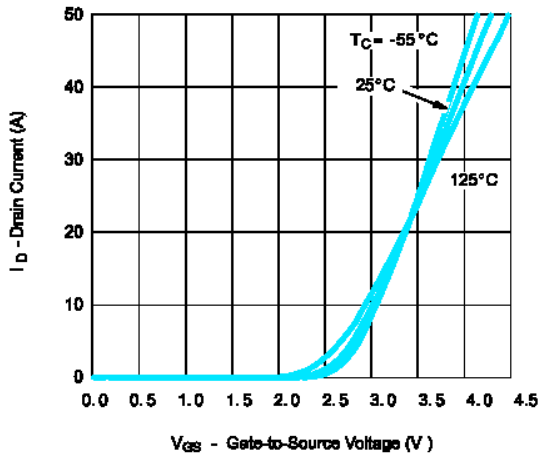
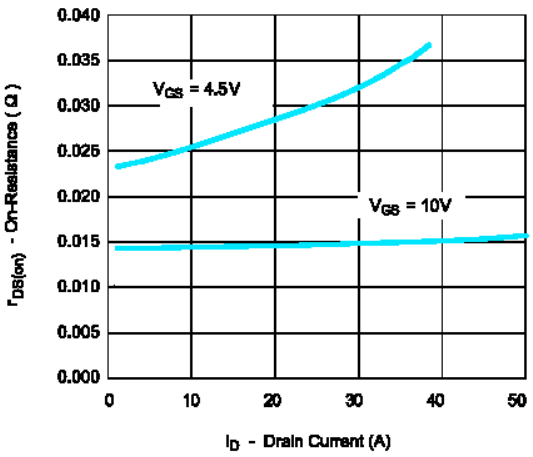
Typical Characteristics (T_J =25℃ Noted)

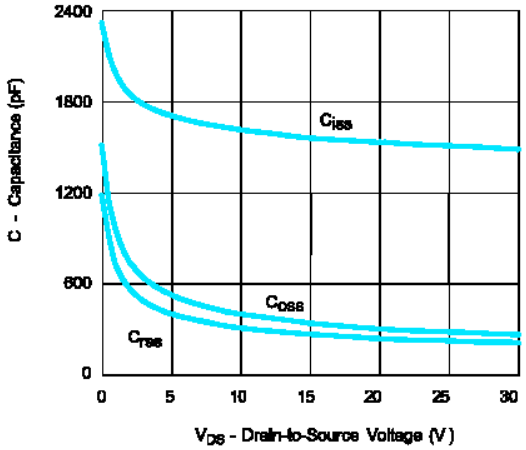
Transfer Characteristics



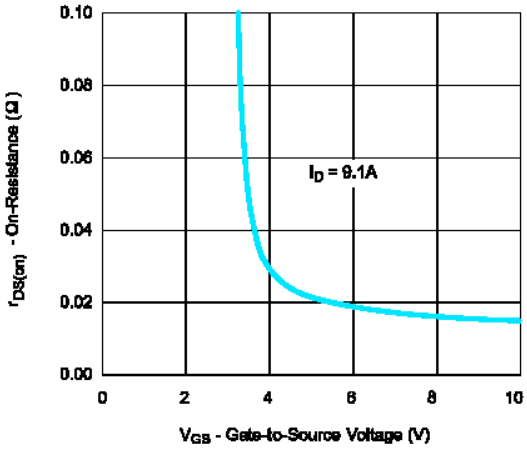
On-Resistance vs. Drain Current



Capacitance



On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage