30V P-Channel Enhancement Mode MOSFET

V_{DS}= -30V

$R_{DS(ON)}$, V_{gs}@-10V, I_{ds}@-4.2A < 64mΩ

$R_{DS(ON)}$, V_{gs}@-4.5V, I_{ds}@-4.0A < 75mΩ

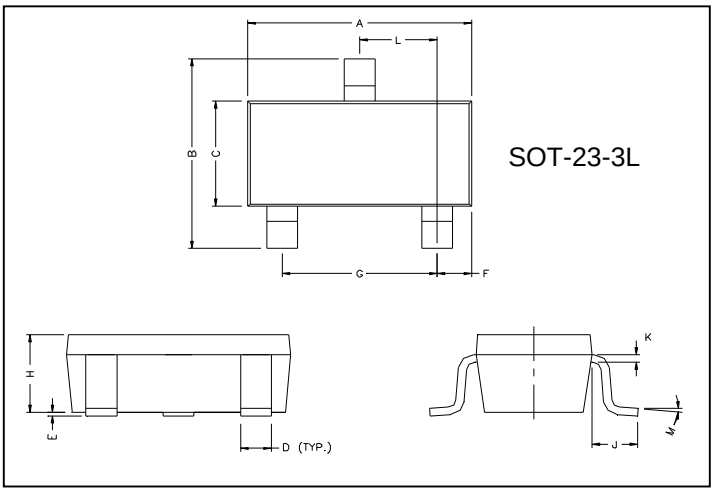
$R_{DS(ON)}$, V_{gs}@-2.5V, I_{ds}@-1.0A < 120mΩ

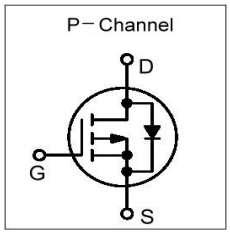
Features

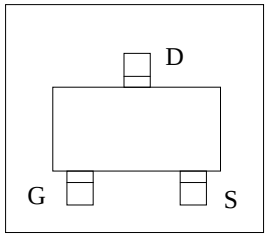
Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

Package Dimensions







REF.	Millimeter		REF.	Millimete	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	1.90	REF.
B	2.65	2.95	H	1.00	1.30
C	1.50	1.70	K	0.10	0.20
D	0.35	0.50	J	0.40	-
E	0	0.10	L	0.85	1.15
F	0.45	0.55	M	0°	10°

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}	±12	
Continuous Drain Current		I_D	-4.2	A
Pulsed Drain Current		I_{DM}	-30	
Maximum Power Dissipation	TA = 25°C	P_D	1.4	W
	TA = 75°C		1	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted)		$R_{\theta JA}$	125	°C/W

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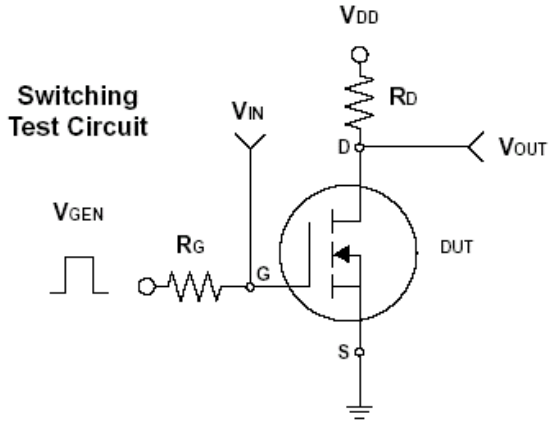
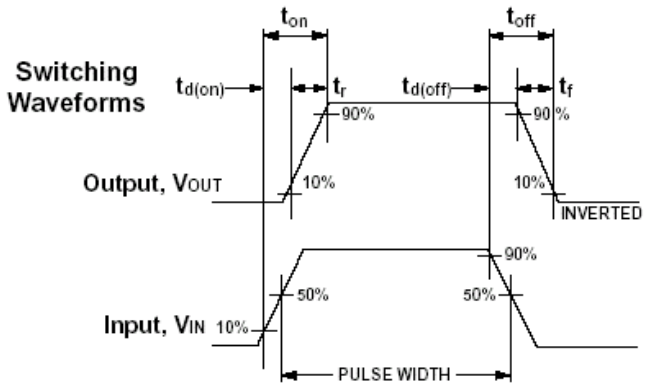
ELECTRICAL CHARACTERISTICS (TA = 25oC unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Miax.	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 = -4.2A		42.0	64.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = -4A		64.0	75.0	
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -2.5V, I_D =-1A		80.0	120.0	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = -250uA	-0.7	-1	-1.3	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0V			-1	uA
Gate Body Leakage	I_{GSS}	V_{GS} = ± 12V, V_{DS} = 0V			± 100	nA
Forward Transconductance	g_{fs}	V_{DS} = -5V, I_D = -5A	7	11	__	S
Dynamic						
Total Gate Charge	Q_g	V_{DS} = 20V, I_D = 5.7A V_{GS} = 10V		9.4		nC
Gate-Source Charge	Q_{gs}			2		
Gate-Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 20V, RL=20Ω I_D = 1A, V_{GEN} = 10V R_G = 6Ω		6.3		ns
Turn-On Rise Time	t_r			3.2		
Turn-Off Delay Time	$t_{d(off)}$			38.2		
Turn-Off Fall Time	t_f			12		
Input Capacitance	C_{iss}	V_{DS} = 8V, V_{GS} = 0V f = 1.0 MHz		954		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			77		
Source-Drain Diode						
Max. Diode Forward Current	I_S				-2.2	A
Diode Forward Voltage	V_{SD}	I_S = 1.8A, V_{GS} = 0V			-1.0	V

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





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Typical Characteristics (T_J =25℃ Noted)