

## -30V P-Channel Enhancement Mode MOSFET

$V_{DS} = -30V$

$R_{DS(ON)}, V_{GS} @ -10V, I_{ds} @ -4.2A < 64m \Omega$

$R_{DS(ON)}, V_{GS} @ -4.5V, I_{ds} @ -4.0A < 75m \Omega$

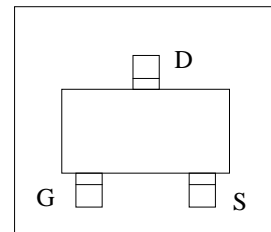
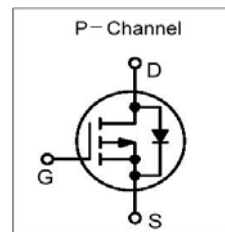
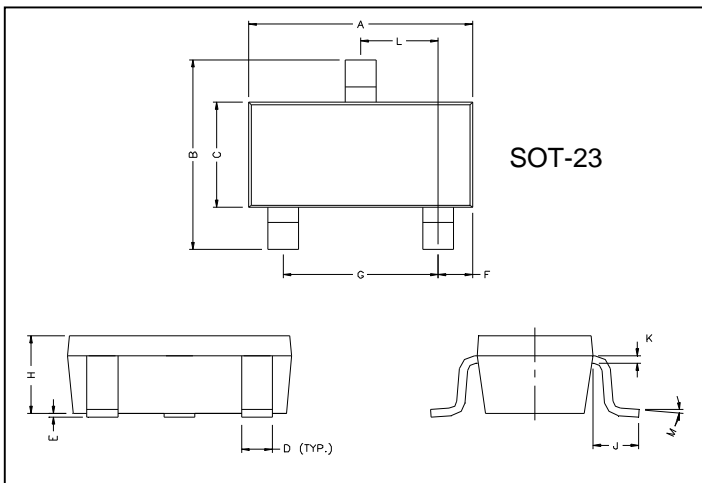
$R_{DS(ON)}, V_{GS} @ -2.5V, I_{ds} @ -1.0A < 120m \Omega$

### 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	2.80	3.00	G	1.80	2.00
B	2.30	2.50	H	0.90	1.1
C	1.20	1.40	K	0.10	0.20
D	0.30	0.50	J	0.35	0.70
E	0	0.10	L	0.92	0.98
F	0.45	0.55	M	0°	10°

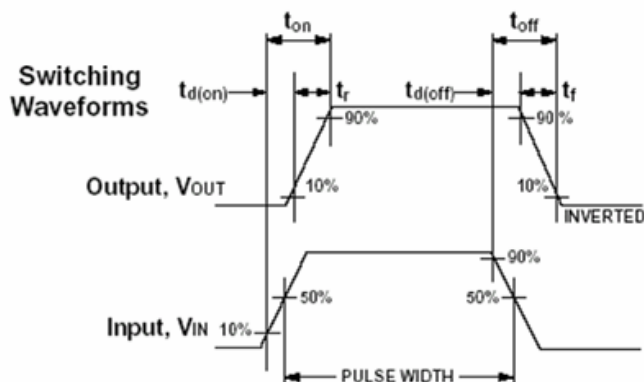
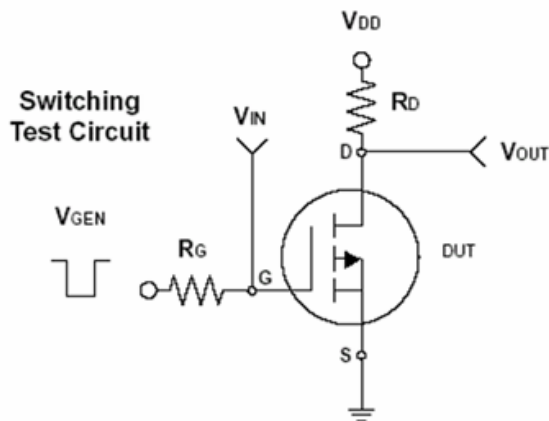
### Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	$V_{DS}$	-30	V	
Gate-Source Voltage	$V_{GS}$	±12		
Continuous Drain Current	$I_D$	-4.2	A	
Pulsed Drain Current	$I_{DM}$	-30		
Maximum Power Dissipation	$P_D$	TA = 25°C	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

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted)

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	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.2A$		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	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.5	-1	-1.3	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate Body Leakage	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			±100	nA
Forward Transconductance	$g_{fs}$	$V_{DS} = -5V, I_D = -5A$		11		S
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS} = -15V, I_D = -4.0A$ $V_{GS} = -10V$		9.4		nC
Gate-Source Charge	$Q_{gs}$			2		
Gate-Drain Charge	$Q_{gd}$			3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = -15V, R_L = 3.7\Omega$ $V_{GS} = -10V, R_{GEN} = 6\Omega$		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	$C_{iss}$	$V_{DS} = -15V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		954		pF
Output Capacitance	$C_{oss}$			115		
Reverse Transfer Capacitance	$C_{rss}$			77		
<b>Source-Drain Diode</b>						
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 ≤ 300μs, duty cycle ≤ 2%



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

