

AO3401

-30V P-Channel Enhancement Mode MOSFET

$V_{DS} = -30V$

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

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

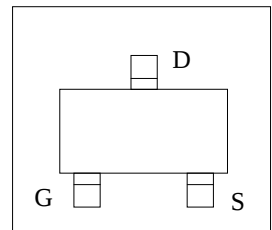
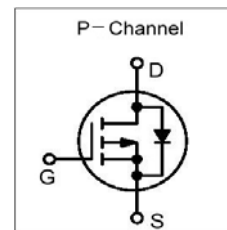
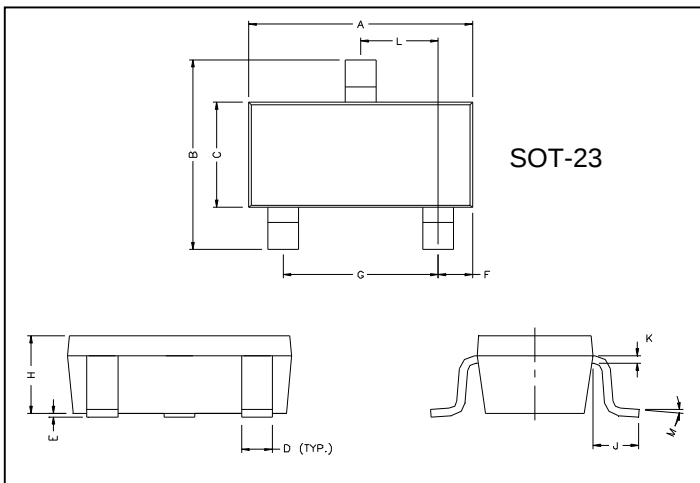
$R_{DS(ON)}, V_{GS}@-2.5V, I_{DS}@-1.0A < 120m\ \Omega$

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°

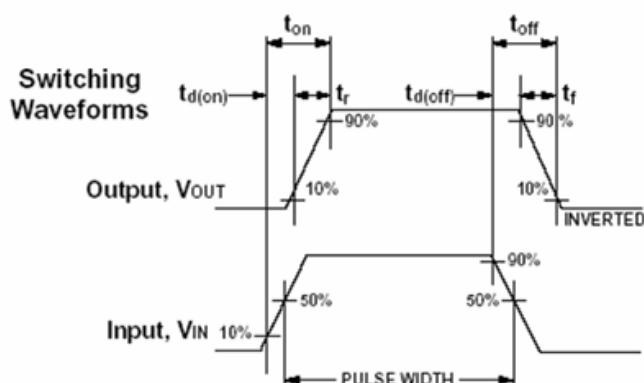
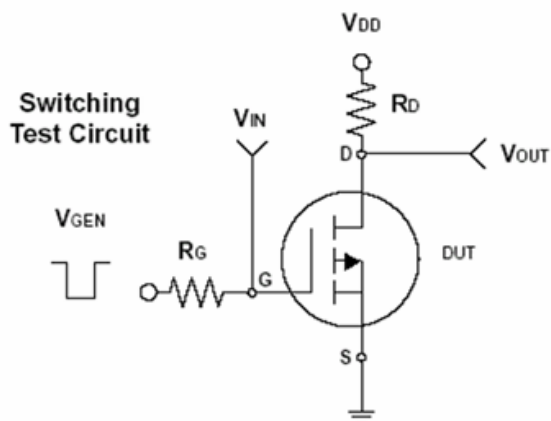
Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

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	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

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

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 = -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 ≤ 300μs, duty cycle ≤ 2%



Typical Characteristics ($T_J = 25^\circ\text{C}$ Noted)