

MOSFET(P-Channel)

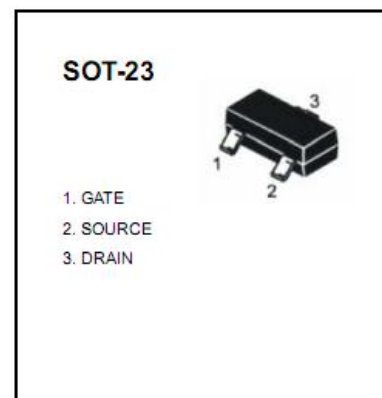
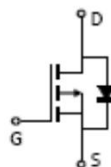
FEATURES

PWM applications

Load switch

Power management

MARK: A1sHB.



MAXIMUM RATINGS (TA=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{DS}	Drain-Source voltage	-20	V
V _{GS}	Gate-Source voltage	±12	V
I _D	Drain current	-3	A
P _D	Power Dissipation	1	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D = -250uA	-20			V
Gate-Threshold Voltage	V _{th(GS)}	V _{DS} = V _{GS} , I _D =-250 uA	-0.4	-0.65	-1	V
Gate-body Leakage	I _{GSS}	V _{DS} =0V, V _{GS} = ± 12V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-19V, V _{GS} =0V			-1	uA
Drain-Source On-Resistance	r _{DS(ON)}	V _{GS} =-4. 5V, I _D =-3.0A		50	60	m Ω
		V _{GS} =-2. 5V, I _D =-2.0A		65	75	m Ω
Forward Trans conductance	g _{fs}	V _{DS} =-5V, I _D =-1.0A	6			s
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz		405		pF
Output Capacitance	C _{oss}			112		
Reverse Transfer Capacitance	C _{rss}			89		
Switching Capacitance						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-10V, R _L =2.9Ω , V _{GS} =-4. 5V R _{GEN} =10 Ω		11		nS
Turn-on Rise Time	t _r			35		nS
Turn-off Delay Time	t _{d(off)}			30		nS
Turn-off Fall Time	t _f			10		nS
Total Gate Charge	Q _g	V _{DS} =-10V, I _D =-2. 5A, V _{GS} =-4. 5V,		9.0		nC
Gate-Source Charge	Q _{gs}			1.0		nC
Gate-Drain Charge	Q _{gd}			2.5		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _D =-3A			-1.2	V
Diode Forward Current	I _s				-3.0	A

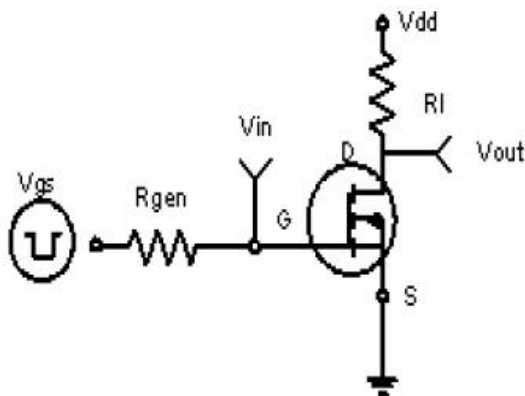


Figure 1: Switching Test Circuit

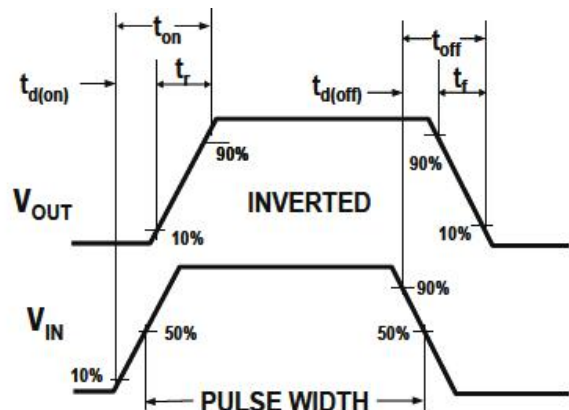


Figure 2: Switching Waveforms

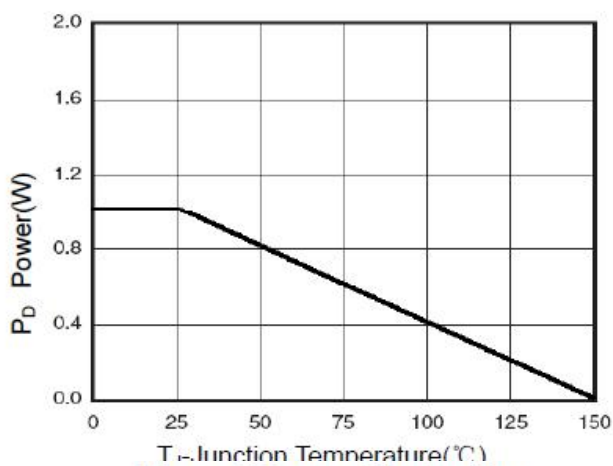


Figure 3 Power Dissipation

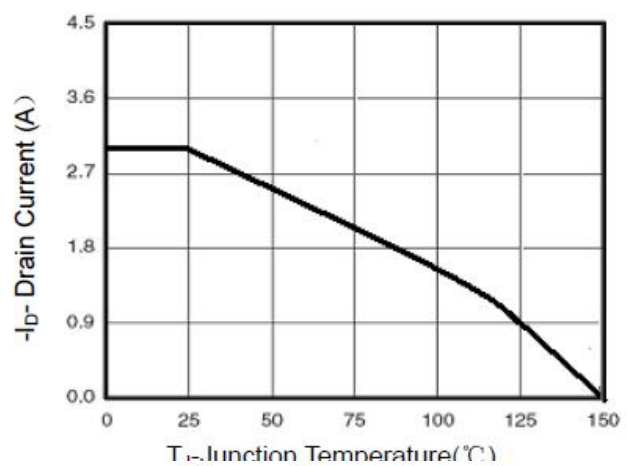


Figure 4 Drain Current

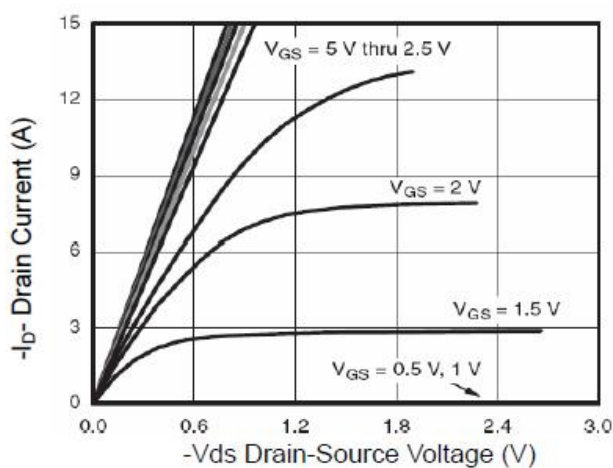


Figure 5 Output Characteristics

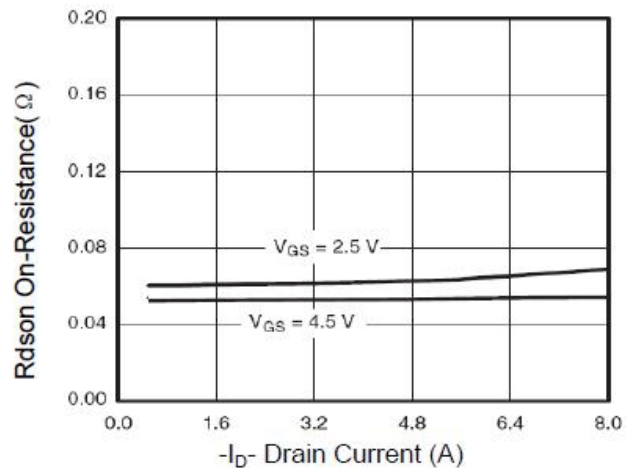


Figure 6 Drain-Source On-Resistance

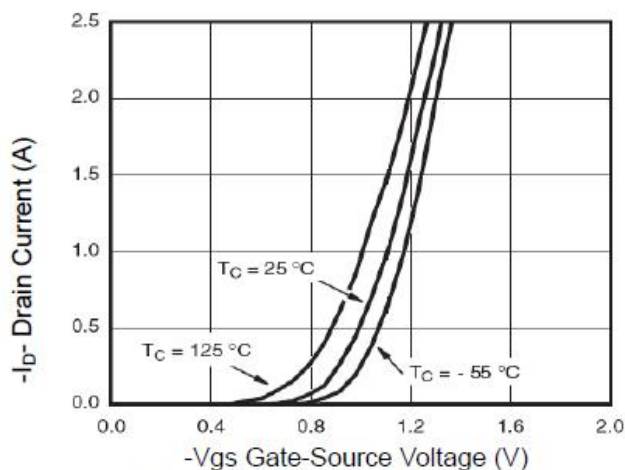


Figure 7 Transfer Characteristics

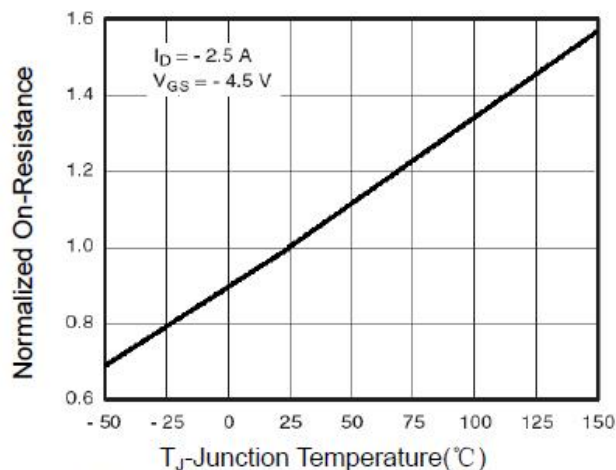


Figure 8 Drain-Source On-Resistance

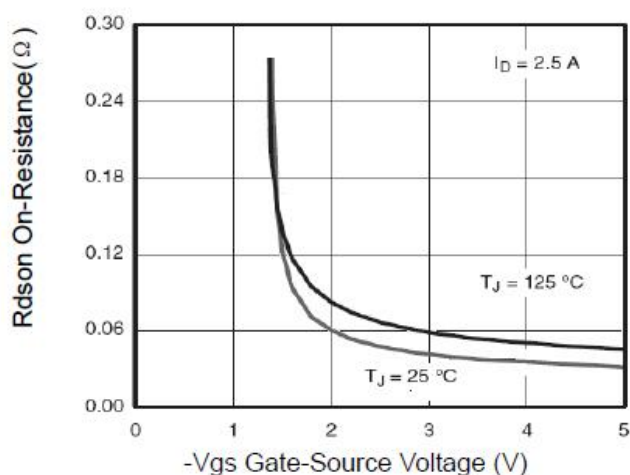


Figure 9 Rdson vs Vgs

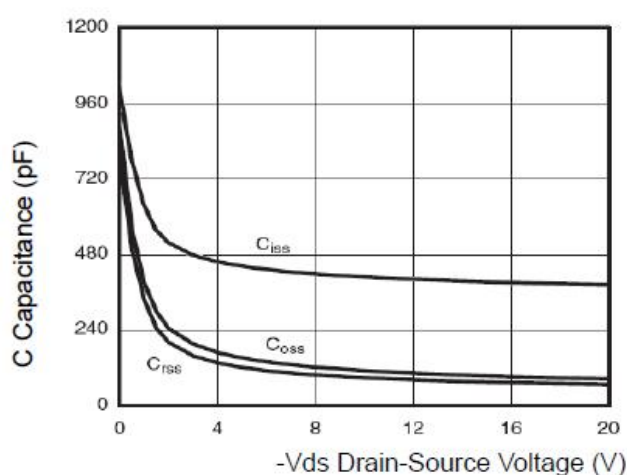


Figure 10 Capacitance vs Vds

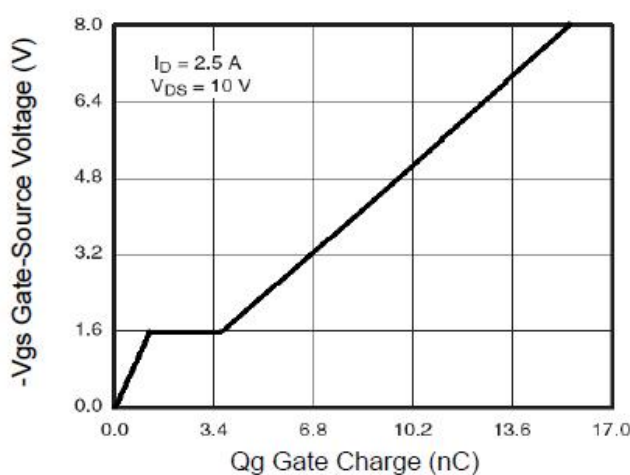


Figure 11 Gate Charge

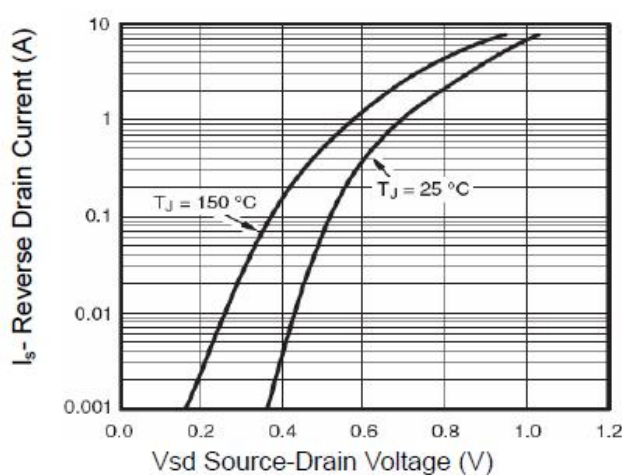
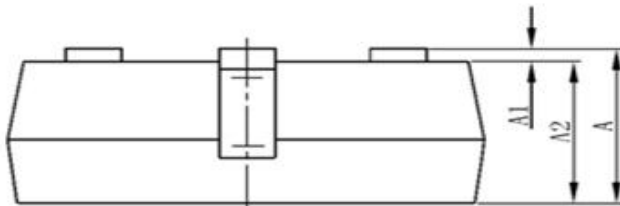
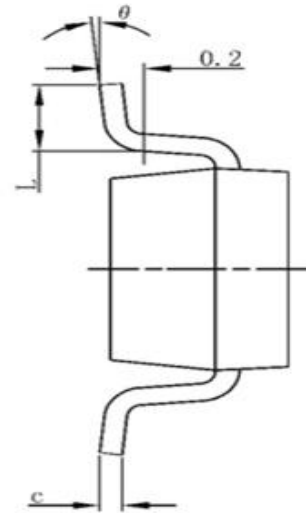
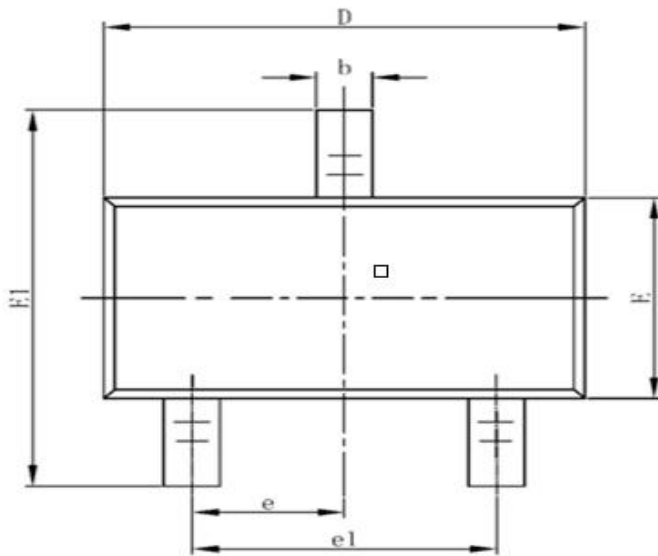


Figure 12 Source- Drain Diode Forward

SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	MIN	TYP	MAX
A	0.90		1.15
A1	0.01		0.15
A2	0.90		1.05
b	0.30		0.50
c	0.08		0.15
D	2.80		3.00
E	1.20		1.40
E1	2.25		2.55
e		0.95	
e 1	1.80		2.00
L	0.30	0.4	0.50
L1	0.50	0.55	0.60
θ	0°		8°