

N-Channel Enhancement Mode Field Effect Transistor

$$V_{DS}=20V, I_D=2A, R_{DS(ON)}=130m\Omega(\max)$$

Features

- Trench Power LV MOSFET Technology
- High Power and Current Handling Capability

Applications

- PWM Application
- Load Switch for Devices

Mechanical Data

- Case: SOT23 Package
- Halogen Free

Ordering Information

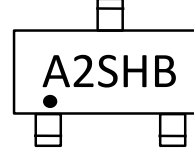
- Package :SOT23
- Reel Size :7 (inches)
- Quantity Per Reel :3,000 pcs

Package Outline



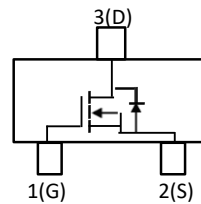
SOT23 Top View

Marking Information



"A2SHB" = Product Type Marking Code

Device Schematic & PIN Configuration



Pin Assignment		
1	G	Gate
2	S	Source
3	D	Drain

Maximum Ratings (@TA = +25°C, unless otherwise specified.)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 10	V
Drain Current	I_D	2.0	A
Pulsed Drain Current ⁽¹⁾	I_{DM}	14	A
Power Dissipation	P_D	0.7	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C
Thermal Resistance Junction to Ambient ⁽²⁾	$R_{\theta JA}$	178	°C/W

Electrical Characteristics (@TA = +25°C, unless otherwise specified.)

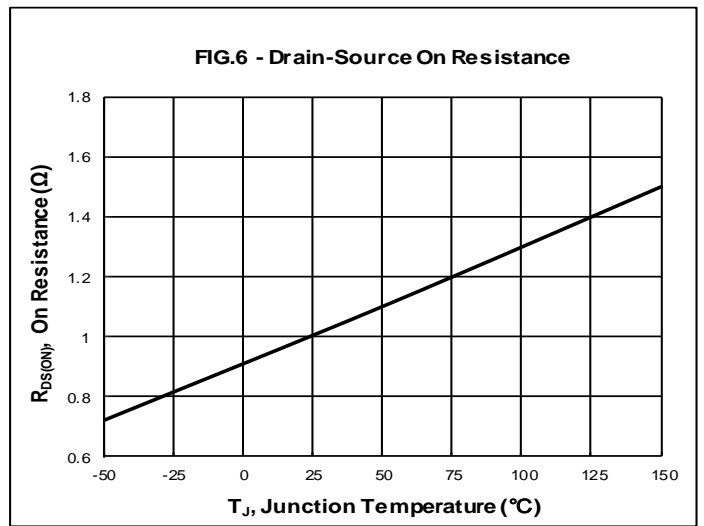
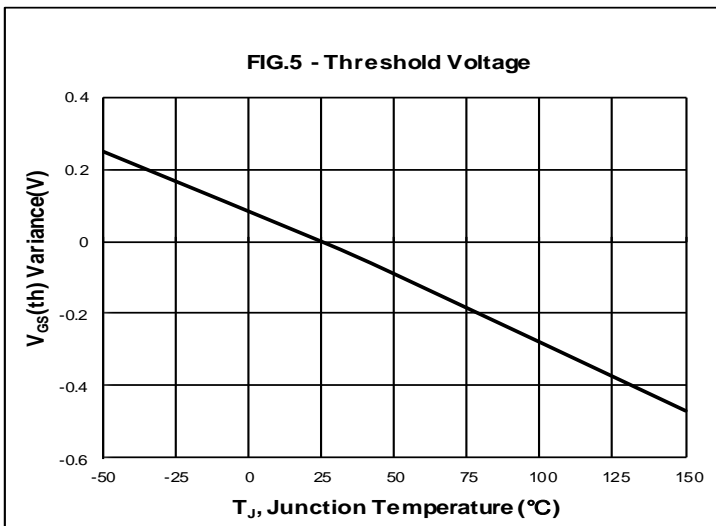
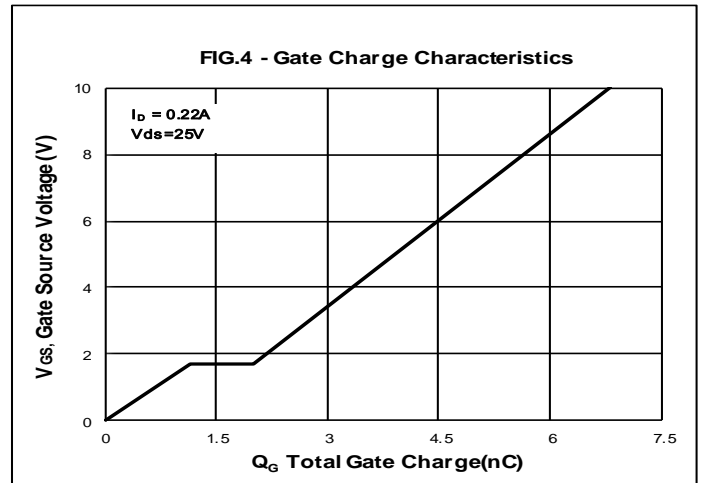
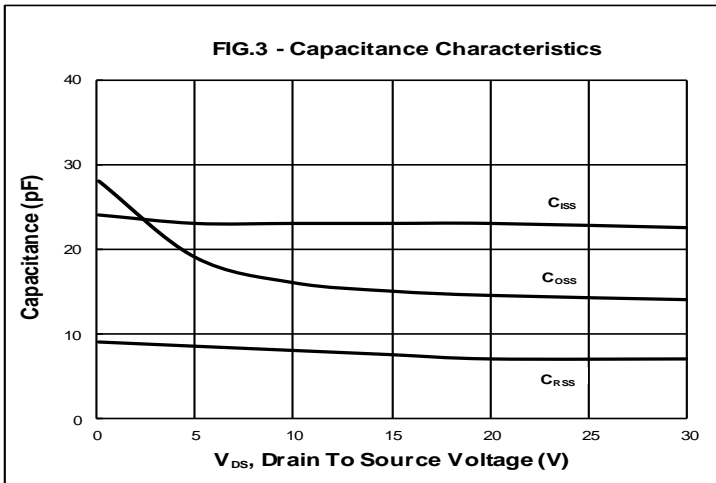
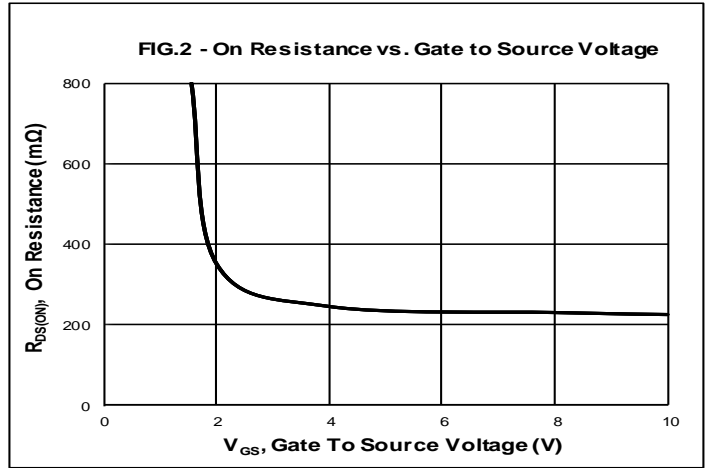
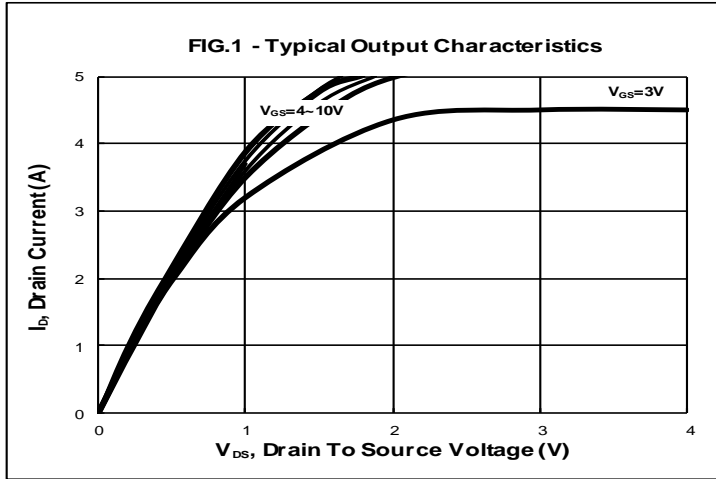
Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	20	-	-	V
Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{th(GS)}$	0.45	0.75	1.1	V
Gate-Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 10V$	I_{GSS}	-	-	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Body-Diode Continuous Current		I_S	-	-	2.0	A
Static Drain-Source On-Resistance	$V_{GS}=4.5V, I_D=1.0A$	$R_{DS(ON)}$	-	85	130	m Ω
	$V_{GS}=2.5V, I_D=0.5A$		-	110	160	
Diode Forward Voltage	$I_S=2.0A, V_{GS}=0V$	V_{SD}	-	-	1.2	V
Input Capacitance	$V_{DS}=15V, V_{GS}=0V, F=1MHz$	C_{iss}	-	21	-	pF
Output Capacitance		C_{oss}	-	15	-	
Reverse Transfer Capacitance		C_{rss}	-	8	-	
Total Gate Charge	$V_{GS}=10V, V_{DS}=25V, I_D=1.6A$	Q_g	-	6.7	-	nC
Gate Source Charge		Q_{gs}	-	1.2	-	
Gate Drain Charge		Q_{gd}	-	0.9	-	
Turn-on Delay Time	$V_{GEN}=10V, V_{DD}=10V, R_L=3\Omega, R_{GEN}=10\Omega$	$t_{D(ON)}$	-	120	-	ns
Turn-on Rise Time		t_r	-	317	-	
Turn-off Delay Time		$t_{D(Off)}$	-	748	-	
Turn-off Fall Time		t_f	-	716	-	

Notes: 1.Pulse Test : Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$

2.Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

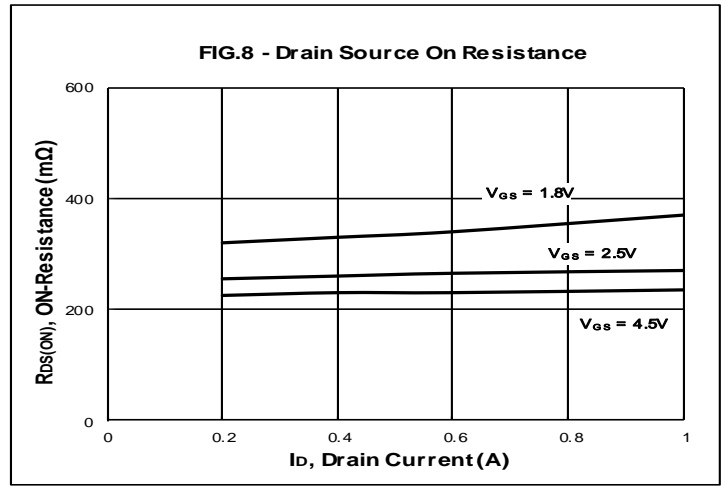
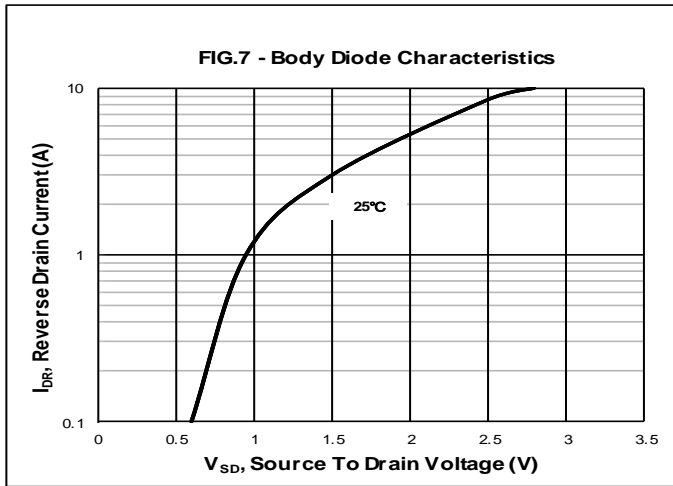


Rating and Characteristic Curves



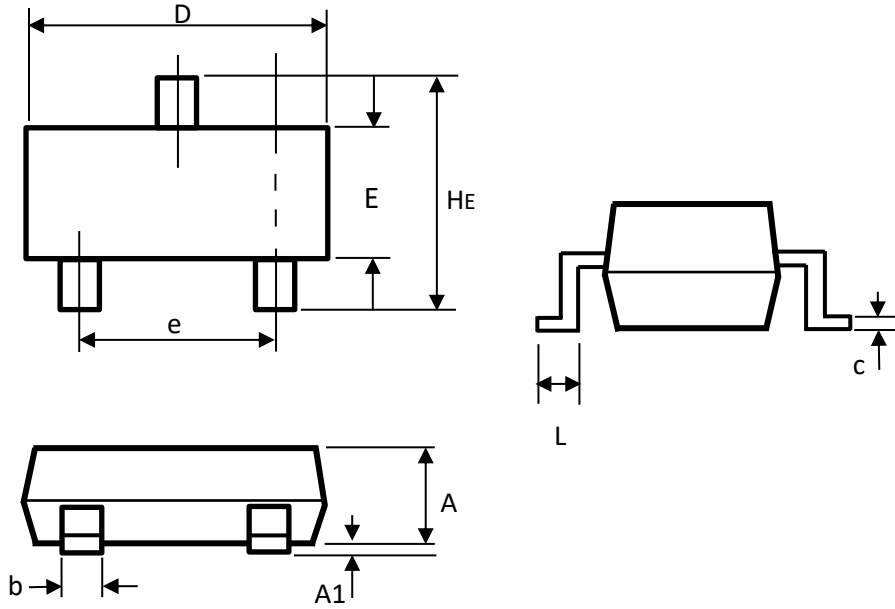


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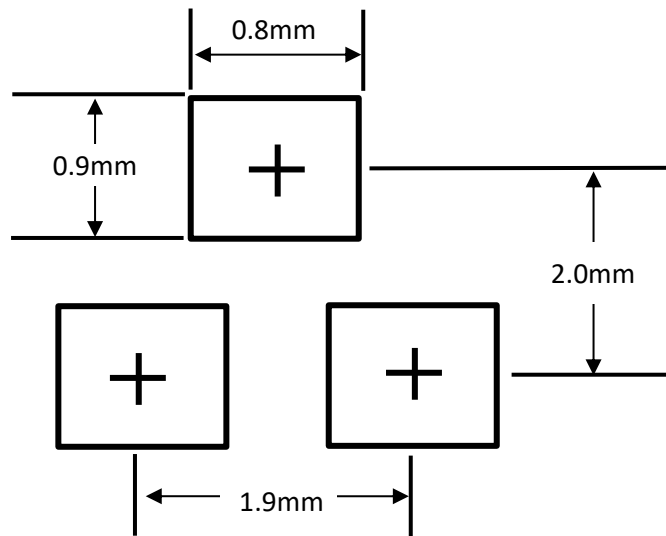


Package Outline Dimensions



SOT23 Package		
Dim	Min	Max
A	0.90	1.10
A1	0.00	0.10
b	0.35	0.50
c	0.09	0.11
D	2.80	3.00
E	1.20	1.60
e	1.80	2.00
L	0.20	0.45
HE	2.25	2.55
All Dimensions in mm		

Suggested Soldering Pad Layout



- Note:
- 1.The pad layout is for reference purposes only.
 - 2.General tolerance $\pm 0.05\text{mm}$



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