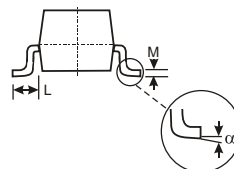
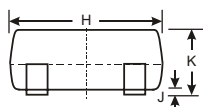
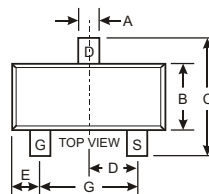


Features

- $V_{DS}=20V$.
- Super high density cell design for extremely low $R_{DS(ON)}$.
- Exceptional on-resistance and maximum DC current capability.
- We declare that the material of product compliance with RoHS requirements.



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

APPLICATIONS

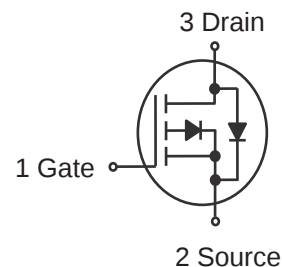
- Power Management in Notebook.
- Portable equipment.
- Battery powered system.
- Load switch.
- Marking Code:2301 OR A1SHB.

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current	I_D	-2.5	A
Peak Drain Current ¹⁾	I_{DM}	-10	A
Power Dissipation $T_A = 25^\circ\text{C}$ $T_A = 75^\circ\text{C}$	P_{tot}	0.80 0.50	W
Thermal Resistance from Junction to Ambient (PCB mounted) ²⁾	$R_{\theta JA}$	156	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Repetitive Rating: Pulse width limited by the Maximum junction temperature.

²⁾ 1 in² 2oz Cu PCB board.



Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

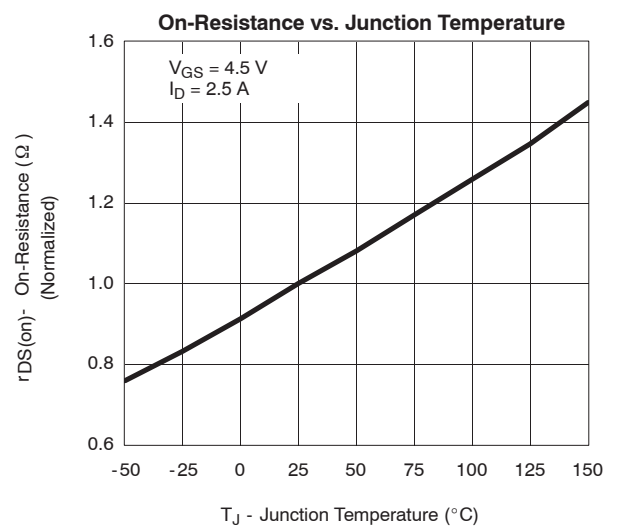
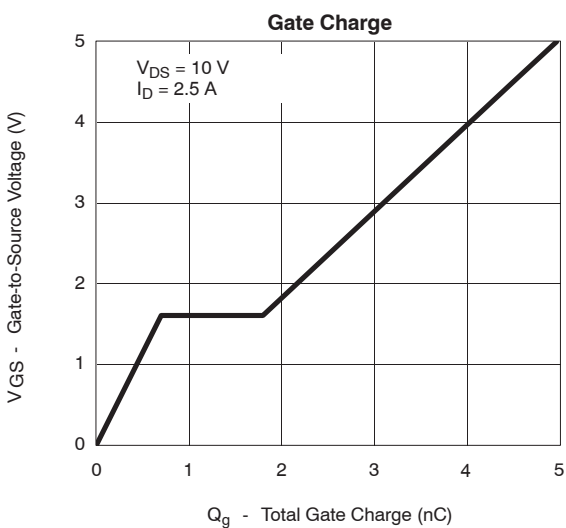
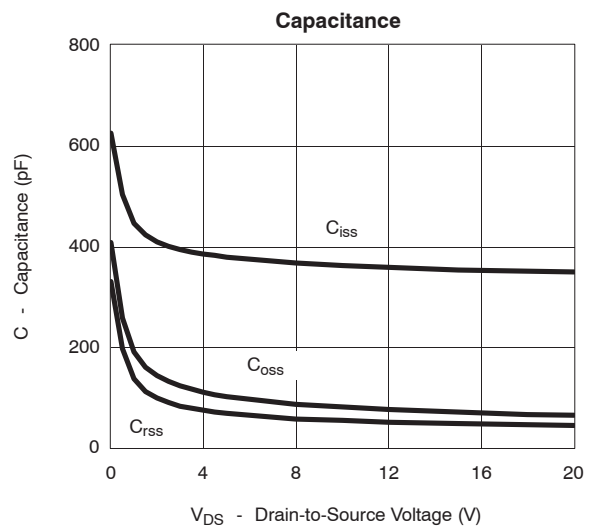
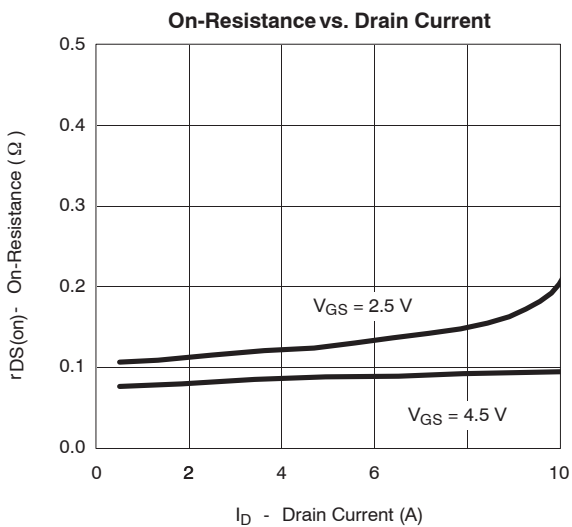
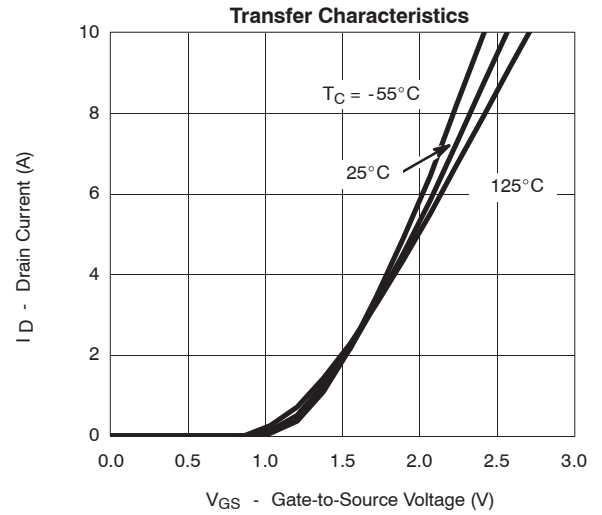
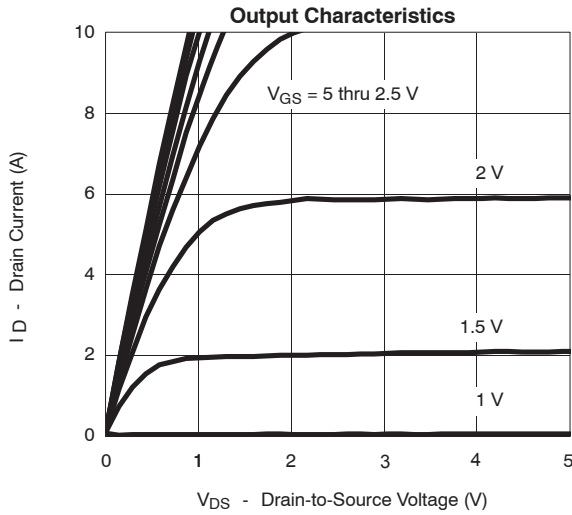
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.4	-0.7	-1.0	
Gate-source leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±12V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Drain-source on-state resistance ^a	R _{DS(on)}	V _{GS} = -4.5V, I _D = -2.5A		90	120	mΩ
		V _{GS} = -2.5V, I _D = -2.0A		110	160	
Forward transconductance ^a	g _{fs}	V _{DS} = -5V, I _D = -2.5A		5.5		S
Dynamic ^b						
Input capacitance	C _{iss}	V _{DS} = -10V, V _{GS} = 0V, f = 1MHz		360		pF
Output capacitance	C _{oss}			67		
Reverse transfer capacitance	C _{rss}			51		
Total gate charge	Q _g	V _{DS} = -10V, V _{GS} = -4.5V, I _D = -2.5A		5.5		nC
		V _{DS} = -10V, V _{GS} = -2.5V, I _D = -2.0A		3.3		
Gate-source charge	Q _{gs}			0.7		
Gate-drain charge	Q _{gd}			1.3		
Gate resistance	R _g	f = 1MHz		6.0		Ω
Turn-on delay time	t _{d(on)}	V _{DD} = -10V, R _L = 10Ω, I _D = -1A, V _{GEN} = -4.5V, R _g = 1Ω		11		ns
Rise time	t _r			35		
Turn-off delay time	t _{d(off)}			30		
Fall time	t _f			10		
Drain-source body diode characteristics						
Continuous source-drain diode current	I _S	T _C = 25°C			-3	A
Pulse diode forward current ^a	I _{SM}				-10	
Body diode voltage	V _{SD}	I _S = -0.7A		-0.8	-1.2	V

Notes :

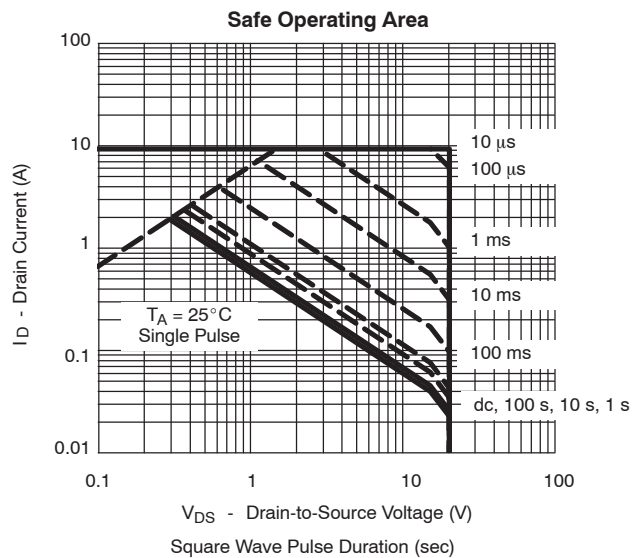
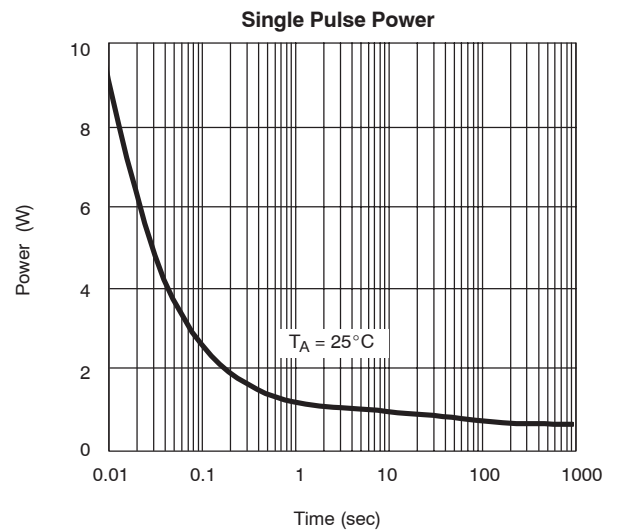
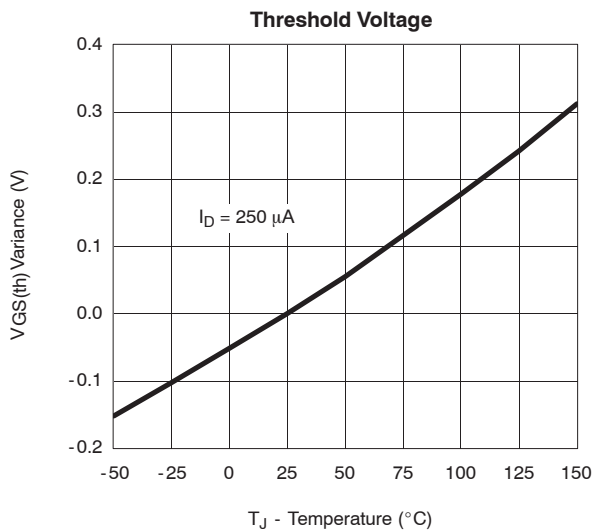
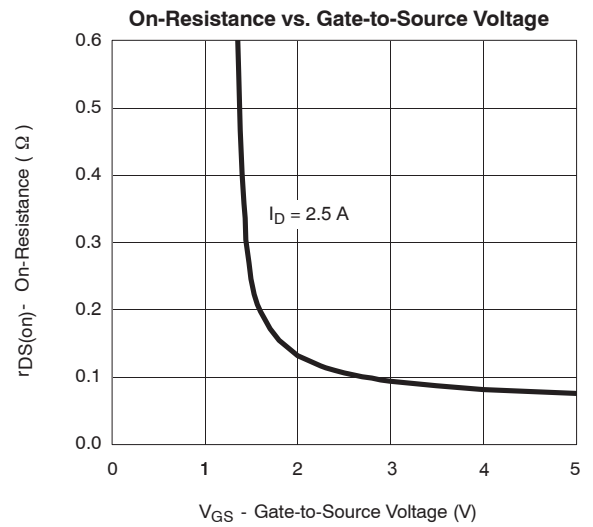
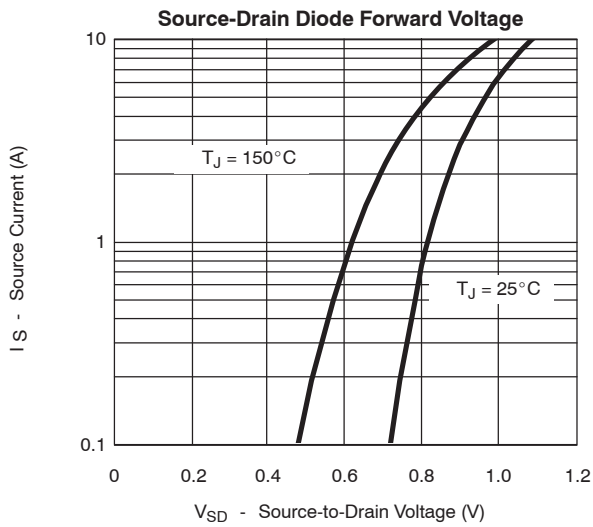
a. Pulse Test : Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.

b. Guaranteed by design, not subject to production testing.

TYPICAL TRANSIENT CHARACTERISTICS



TYPICAL TRANSIENT CHARACTERISTICS



IMPORTANT NOTICE

HC-SEMI reserves the right to make changes without further notice to any products herein.

HC-SEMI makes no warranty, representation or guarantee regarding

The suitability of its products for any particular purpose, nor does HC-SEMI assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages.

“Typical” parameters can and do vary in different applications. All operating parameters, including “Typicals” must be validated for each customer application by customer’s technical experts.

HC-SEMI products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the HC-SEMI product could create a situation where personal injury or death may occur.

Should Buyer purchase or use HC-SEMI products for any such unintended or unauthorized application, Buyer shall indemnify and hold HC-SEMI and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that HC-SEMI was negligent regarding the design or manufacture of the part.