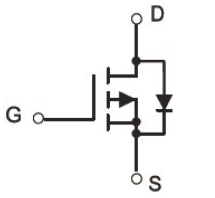
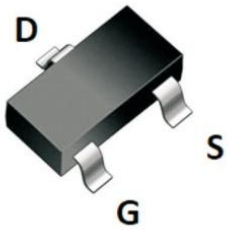
-20V Plastic-Encapsulate MOSFET

MAIN CHARACTERISTICS

I_D	-2.3A
V_{DS}	-20V
R_{DSON}-typ(@V_{GS}=-4.5V)	＜112mΩ(Typ:90 mΩ)
R_{DSON}-typ(@V_{GS}=-2.5V)	＜142mΩ(Typ:110 mΩ)





SOT-23

FEATURES

- Lead free product is acquired
- Surface mount package
- Moisture Sensitivity Level 3

Mechanical Data

- SOT-23 Small Outline Plastic Package.
- Epoxy UL: 94V-0.
- Mounting Position: Any.

Marking Code	
YFW2301B	A1SHB.

Absolute Maximum Ratings(Ta=25'C unless otherwise noted)

Parameters	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-2.3	A
Pulsed Drain Current	I_{DM}	-10	A
Continuous Source-Drain Diode Current	I_S	-0.72	A
Power Dissipation	P_D	400	mW
Junction Temperature	T_j	150	℃
Storage Temperature	Tstg	-50-+150	℃
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	312.5	℃/W

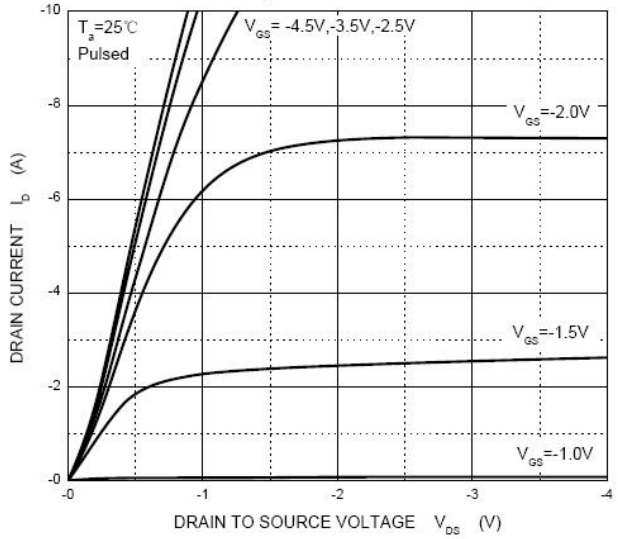
Electrical Characteristics (Ta=25'C,unless otherwise noted)

Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250uA	-20			V
Gate-Threshold voltage	$V_{GS\ (th)}$	V_{DS}=V_{GS}, I_D=-250uA	-0.4	-0.7	-1.0	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±100	nA
Zero Gate Voltage Drain current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V			-1	uA
Drain-Source On-Resistance(a)	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-2.8A		90	112	mΩ
		V_{GS}=-2.5V, I_D=-2A		110	142	
Forward trans conductance(a)	g_{fs}	V_{DS}=-5V, I_D=-2.8A		6.5		S
Input capacitance	C_{iss}	VDS=-10V VGS=0V f=1MHz			405	pF
Output capacitance	C_{oss}				75	
Reverse Transfer capacitance	C_{rss}				55	
Total gate charge	Q_g	V_{DS}=-10V, V_{GS}=-4.5V,ID=-3A		5.5	10	nC
		VDS=-10V VGS=-2.5V ID=-3A		3.3	6	
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 Time	$t_{d(on)}$	V_{DD}=-10V R_L=10Ω V_{GEN}=-4.5V I_D=-1.0A RG=1Ω		11	20	ns
Rise time	t_r			35	60	
Turn-off Time	$t_{d(off)}$			30	50	
Fall time	t_f			10	20	
Continuous source-drain diode current	I_S	Tc=25℃			-1.3	A
Pulse diode forward current (a)	I_{SM}				-10	
Body diode voltage	V_{SD}	IS=-0.7A,		-0.8	-1.2	V

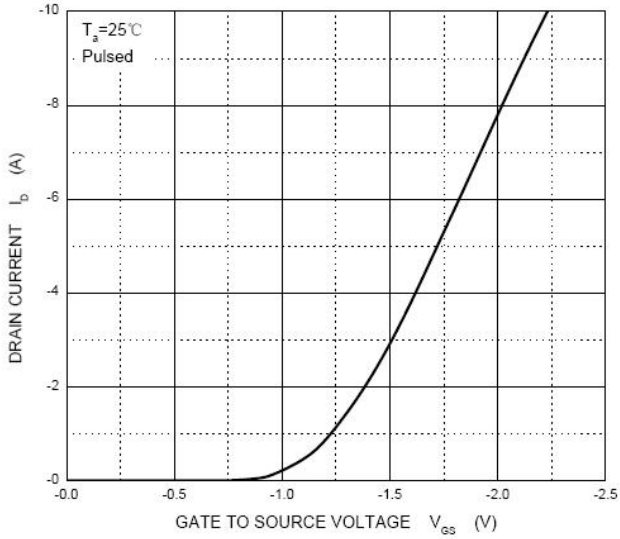
Notes: a. Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
b. Guaranteed by design, not subject to production testing.

Typical characteristics

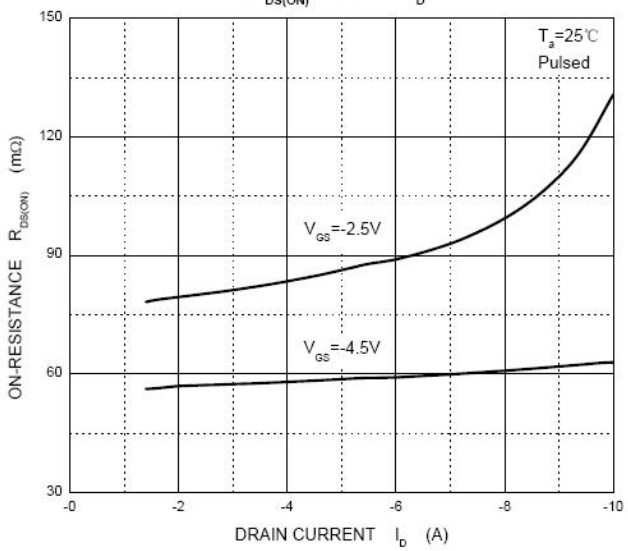
Output Characteristics



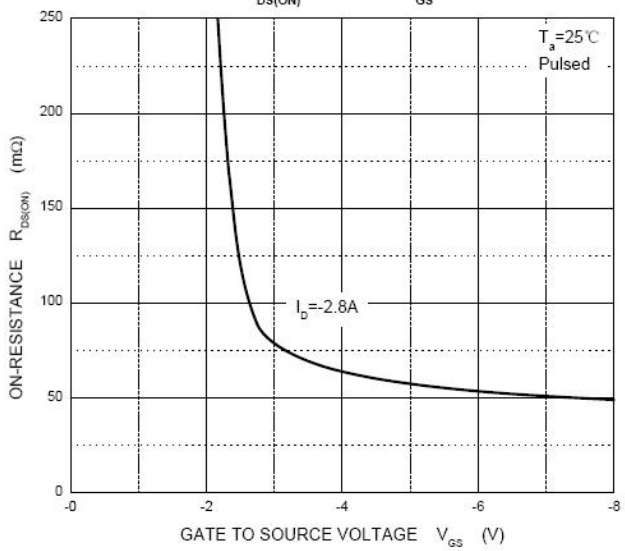
Transfer Characteristics



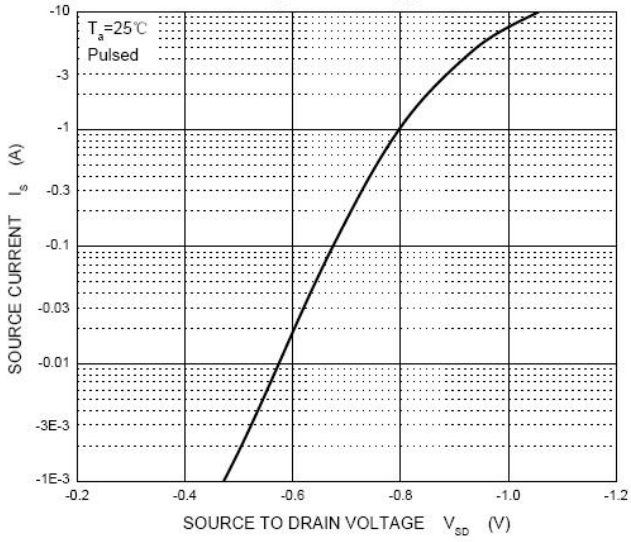
$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}

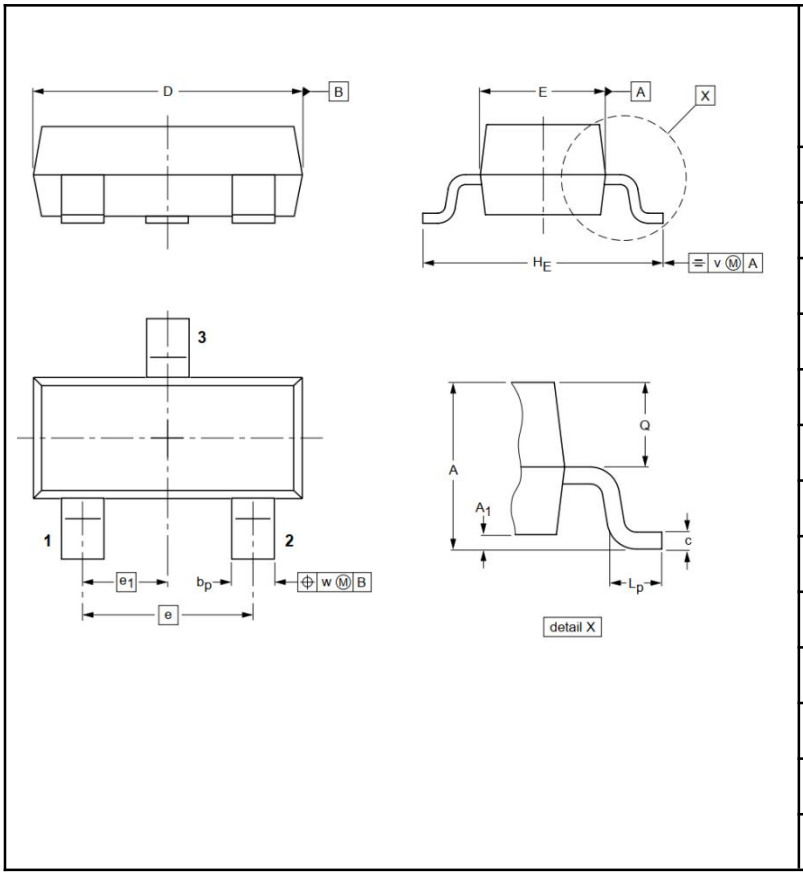


Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

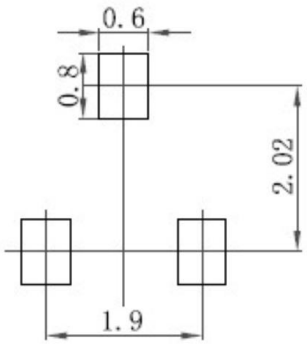
Package Dimensions

SOT-23



Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
e	1.9		75	
e1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



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