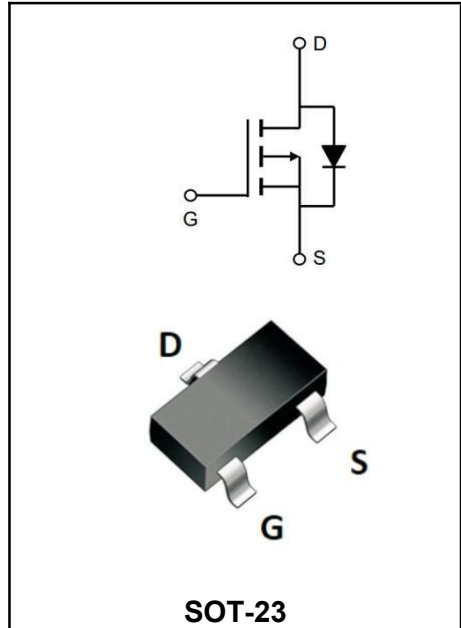


-20V P-Channel Enhancement Mode Field Effect Transistor

MAIN CHARACTERISTICS

I_D	-6.8A
V_{DSS}	-20V
R_{DS(on)-typ}(@V_{GS}=-4.5V)	< 45mΩ (Typ: 30mΩ)
R_{DS(on)-typ}(@V_{GS}=-2.5V)	< 60mΩ (Typ: 40mΩ)
R_{DS(on)-typ}(@V_{GS}=-1.8V)	< 90mΩ (Typ: 60mΩ)



Marking Code	
YFW2311B	2311B

Features

- ◆ TrenchFET Power MOSFET
- ◆ Load Switch for Portable Devices.
- ◆ DC/DC Converter.

Mechanical Data

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

Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate - Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-6.8	A
Continuous Source-Drain Diode Current	I_S	-0.8	
Power Dissipation	P_D	350	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance From Junction to Ambient	R_{θJA}	357	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

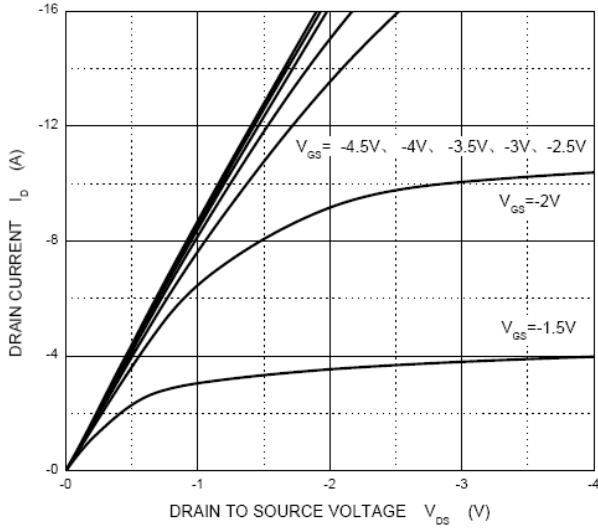
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	BV_{DSS}	-20	-	-	V
Gate-Threshold voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	$V_{GS(th)}$	-0.5	-	0.9	V
Gate-body Leakage	$V_{GS}=\pm 12V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Zero Gate Voltage Drain current	$V_{DS}=-8V, V_{GS}=0V$	I_{DSS}	-	-	-1	μA
Drain-Source On-Resistance (a)	$V_{GS}=-4.5V, I_D=-3.5A$	$R_{DS(ON)}$	-	30	45	m Ω
	$V_{GS}=-2.5V, I_D=-3.0A$		-	40	60	
	$V_{GS}=-1.8V, I_D=-2.0A$		-	60	90	
Forward Transconductance (a)	$V_{DS}=-5V, I_D=-4.1A$	g_{fs}	6	-	-	S
Input Capacitance	$V_{DS}=-4V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	740	-	μF
Output Capacitance		C_{oss}	-	290	-	
Reverse Transfer Capacitance		C_{rss}	-	190	-	
Total gate charge(b,c)	$V_{DS}=-4V, V_{GS}=-4.5V,$ $I_D=-4.1A$	Q_g	-	7.8	15	nC
			-	4.5	9	
Gate-source charge(b,c)	$V_{DS}=-4V, V_{GS}=-2.5V,$ $I_D=-4.1A$	Q_{gs}	-	1.2	-	
Gate-drain charge(b,c)		Q_{gd}	-	1.6	-	
Gate resistance	$F=1MHz$	R_g	1.4	7	14	Ω
Turn-on delay time	$V_{DD}=-4V, R_L=1.2\Omega,$ $V_{GEN}=-4.5V, I_D=-3.3A,$ $R_G=1\Omega$	$t_{d(on)}$	-	13	20	ns
Rise Time		T_r	-	35	53	
Turn-Off Delay Time		$t_{d(OFF)}$	-	32	48	
Fall Time		t_f	-	10	20	
Turn-on delay time	$V_{DD}=-4V, R_L=1.2\Omega,$ $V_{GEN}=-8V, I_D=-3.3A,$ $R_G=1\Omega$	$t_{d(on)}$	-	5	10	ns
Rise Time		T_r	-	11	17	
Turn-Off Delay Time		$t_{d(OFF)}$	-	22	33	
Fall Time		t_f	-	16	24	
Continuous source-drain diode current	$T_c=25^\circ C$	I_S	-	-	-1.4	A
Pulse diode forward current (a)		I_{SM}	-	-	-10	
Body diode voltage	$I_S=-3.3A$	V_{SD}	-	-	-1.2	V

Notes:

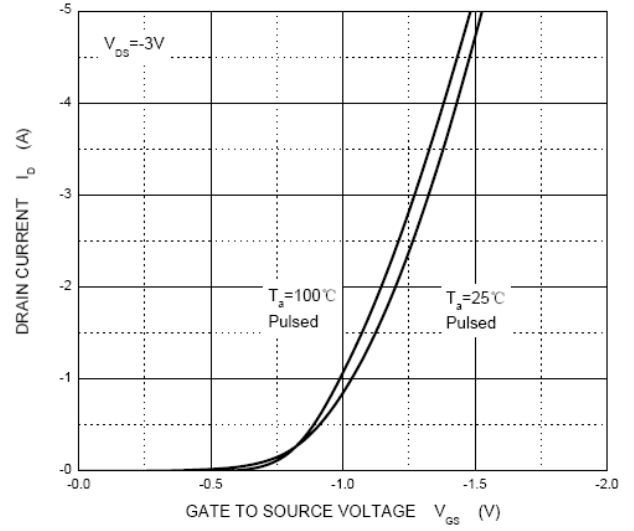
- Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
- Guaranteed by design, not subject to production testing.
- These parameters have no way to verify

Typical characteristics

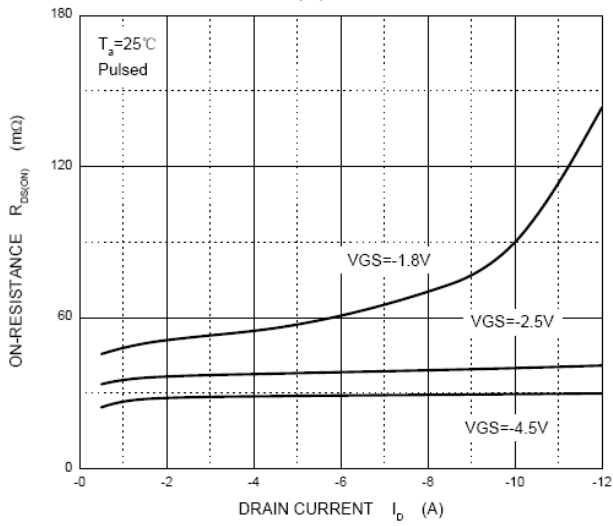
Output Characteristics



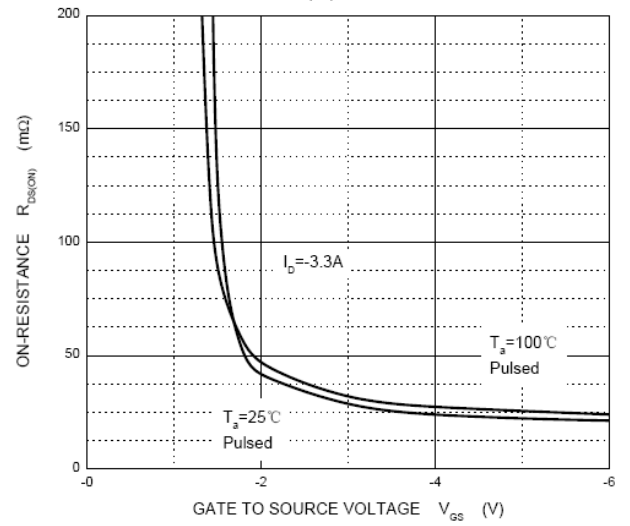
Transfer Characteristics



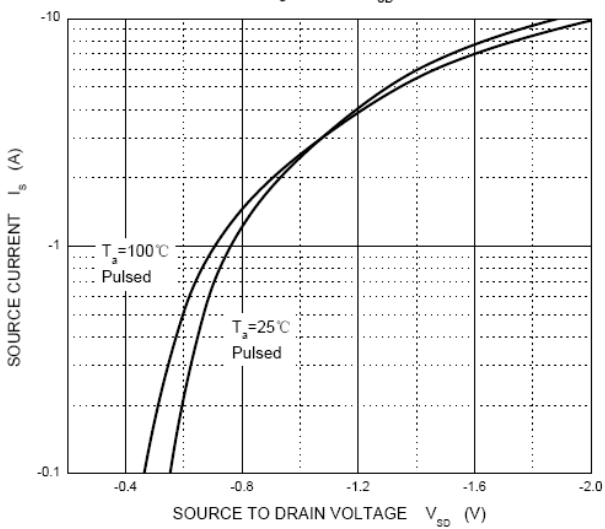
$R_{DS(ON)}$ — I_D



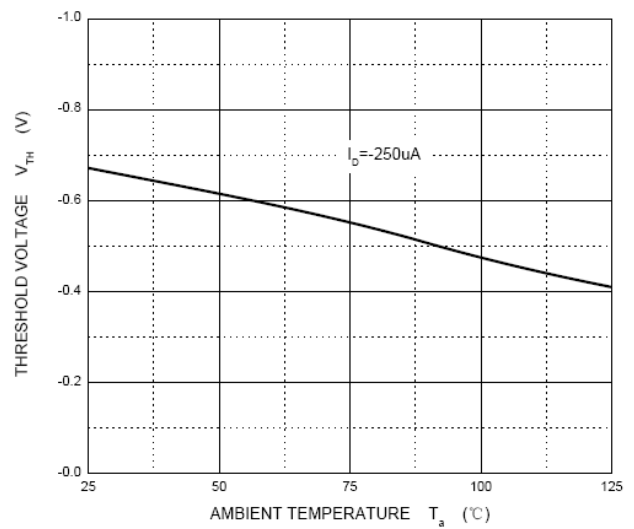
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage



Ordering information

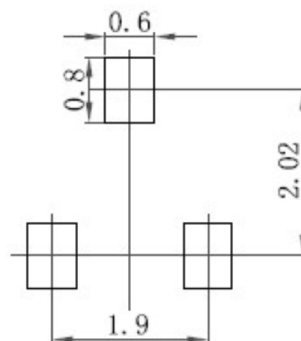
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

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



Disclaimer

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