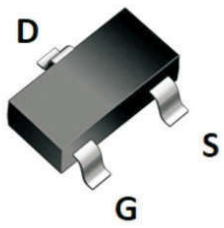
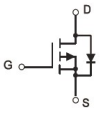
-30V Plastic-Encapsulate MOSFET

MAIN CHARACTERISTICS

I_D	-1.9A
V_{DSS}	-30V
R_{DSON}-typ(@V_{GS}=-10V)	＜190mΩ(Type:75 mΩ)



Equivalent Circuit



SOT-23

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.

Product Specification Classification

Part Number	Package	Marking	Pack
YFW2303	SOT-23	S3	3000PCS/Tape

Maximum Ratings & Thermal Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameters	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-1.9	A
Continuous Source-Drain Diode Current	I_S	-0.83	A
Pulsed Drain Current	P_D	350	mW
Junction Temperature	T_j	150	℃
Storage Temperature	Tstg	-55-+150	℃
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	357	℃/W

Electrical Characteristics

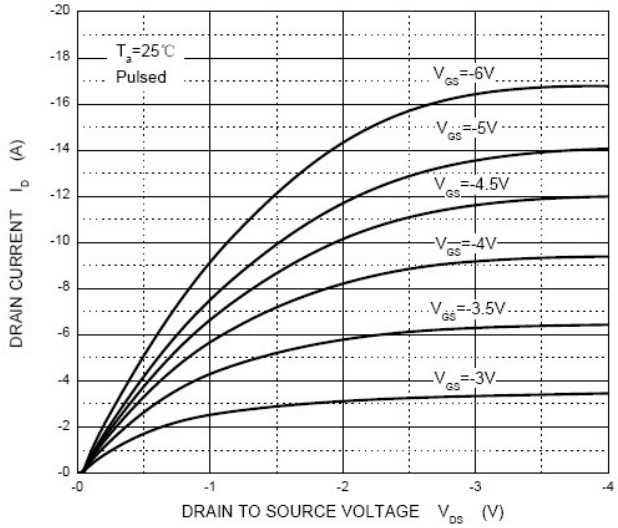
Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250uA	-30			V
Gate-Threshold voltage	$V_{GS\ (th)}$	V_{DS}=VGS, I_D=-250uA	-1	-1.6	-3	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V			-1	uA
Drain-Source On-Resistance(a)	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-1.9A		75	190	mΩ
		V_{GS}=-4.5V, I_C=-1.4A		115	330	
Forward trans conductance(a)	g_{fs}	V_{DS}=-5V, I_D=-1.9A	1			S
Input capacitance	C_{iss}	VDS=-15V, VGS=0V,f=1MHz		155		pF
Output capacitance	C_{oss}			35		
Reverse Transfer capacitance	C_{rss}			25		
Total gate charge	Q_g	V_{DS}=-15V, V_{GS}=-10V,ID=-1.9A		4	8	nC
		VDS=-15V, VGS=-4.5V,ID=-1.9A		2	4	
Gate-source charge	Q_{gs}			0.6		
Gate-drain charge	Q_{gd}			1		
Gate resistance	R_g	F=1MHz	1.7	8.5	17	Ω
Turn-on Time	$t_{d(on)}$	V_{DD}=-15V, R_L=10Ω, V_{GEN}=-10V, I_D=-1.5A, RG=1Ω		4	8	ns
Rise time	t_r			11	18	
Turn-off Time	$t_{d(off)}$			11	18	
Fall time	t_f			8	16	
Turn-on Time	$t_{d(on)}$	V_{DD}=-15V, R_L=10Ω, V_{GEN}=-4.5V, I_D=-1.5A, RG=1Ω		36	44	ns
Rise time	t_r			37	45	
Turn-off Time	$t_{d(off)}$			12	18	
Fall time	t_f			9	14	
Continuous source-drain diode current	I_S	Tc=25℃			-1.75	A
Pulse diode forward current (a)	I_{SM}				-10	
Body diode voltage	V_{SD}	IS=-1.5A,		-0.8	-1.2	V

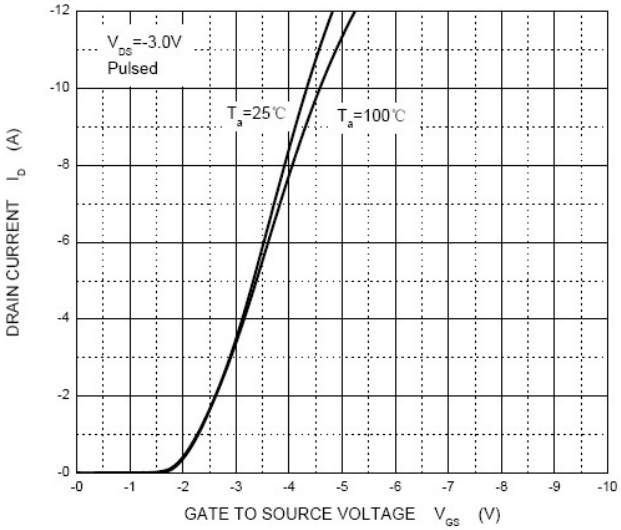
Notes: a. Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
b. Guaranteed by design, not subject to production testing.

Typical characteristics

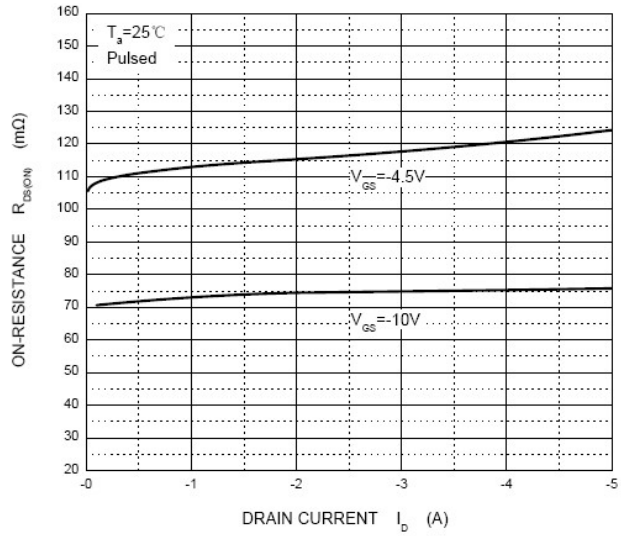
Output Characteristics



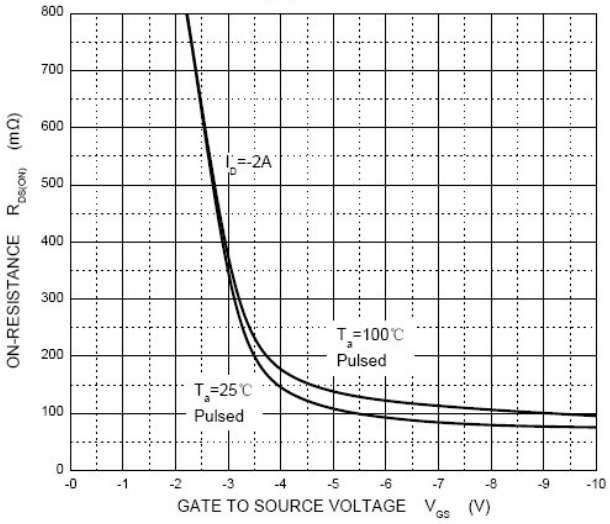
Transfer Characteristics



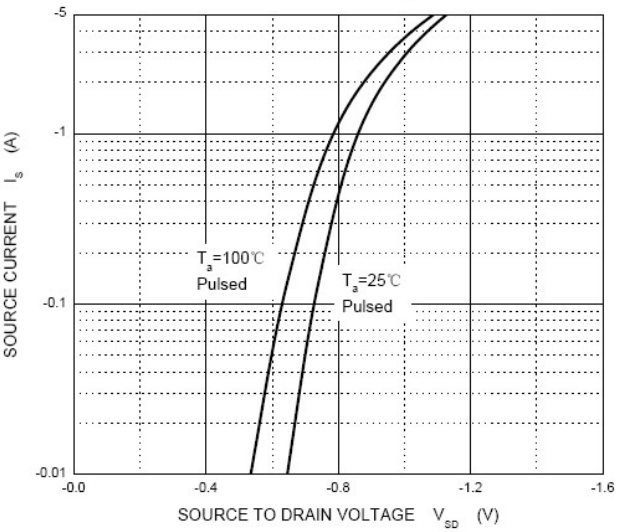
RDS(ON) —— ID



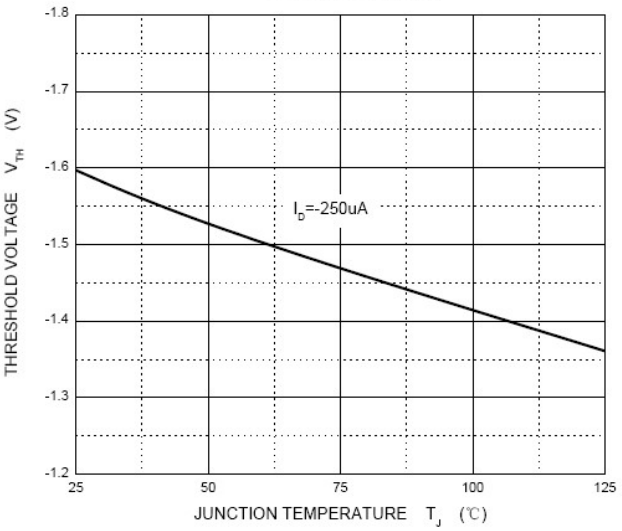
RDS(ON) —— VGS



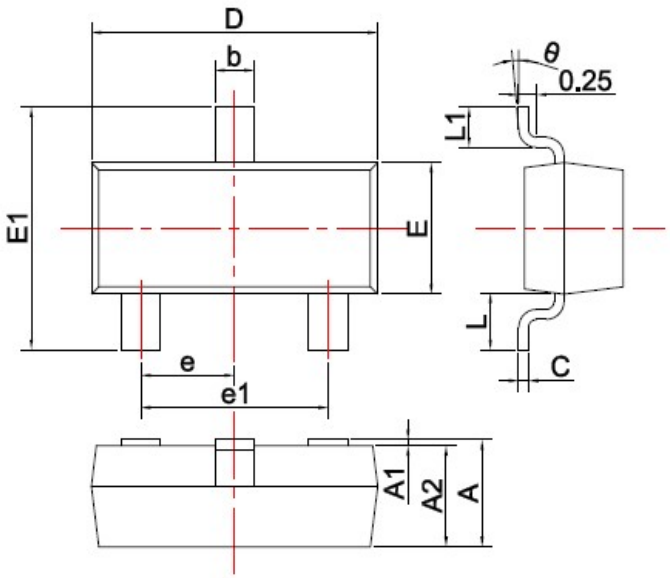
IS —— VSD



Threshold Voltage



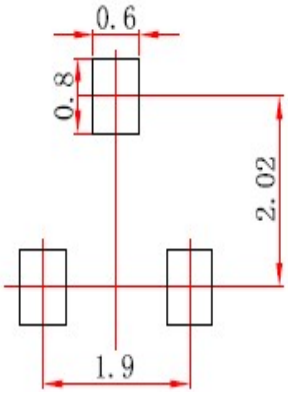
Package Outline SOT-23



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Unit: mm

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



Note:
1.Controlling dimension:In millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.