

-30V Plastic-Encapsulate MOSFET

MAIN CHARACTERISTICS

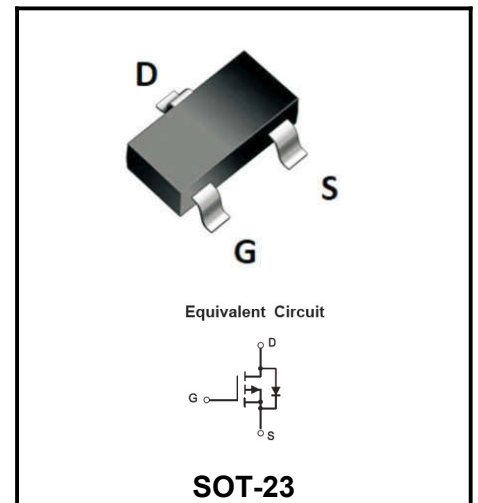
I_D	-1.9A
V_{DSS}	-30V
$R_{DS(on)-typ}(@V_{GS}=-10V)$	< 190mΩ (Type:75 mΩ)

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°C 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	°C
Storage Temperature	T_{stg}	-55-+150	°C
Thermal Resistance From Junction to Ambient	$R_{θJA}$	357	°C/W

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

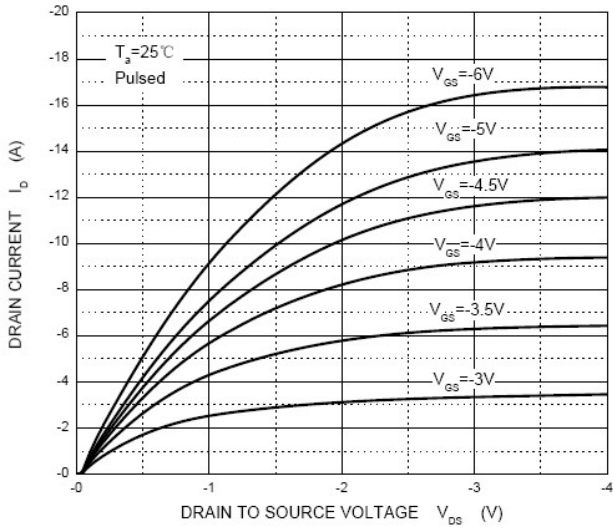
Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate-Threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.6	-3	V
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$			-1	μA
Drain-Source On-Resistance ^(a)	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-1.9A$		75	190	m Ω
		$V_{GS}=-4.5V, I_C=-1.4A$		115	330	
Forward trans conductance ^(a)	g_{fs}	$V_{DS}=-5V, I_D=-1.9A$	1			S
Input capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		155		pF
Output capacitance	C_{oss}			35		
Reverse Transfer capacitance	C_{rss}			25		
Total gate charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-1.9A$		4	8	nC
		$V_{DS}=-15V, V_{GS}=-4.5V, I_D=-1.9A$		2	4	
Gate-source charge	Q_{gs}	$V_{DS}=-15V, V_{GS}=-4.5V, I_D=-1.9A$		0.6		
Gate-drain charge	Q_{gd}			1		
Gate resistance	R_g	F=1MHz	1.7	8.5	17	Ω
Turn-on Time	$t_{d(on)}$	$V_{DD}=-15V, R_L=10\Omega, V_{GEN}=-10V, I_D=-1.5A, R_G=1\Omega$		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	$t_{d(on)}$	$V_{DD}=-15V, R_L=10\Omega, V_{GEN}=-4.5V, I_D=-1.5A, R_G=1\Omega$		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	$T_C=25^\circ C$			-1.75	A
Pulse diode forward current ^(a)	I_{SM}				-10	
Body diode voltage	V_{SD}	$I_S=-1.5A,$		-0.8	-1.2	V

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

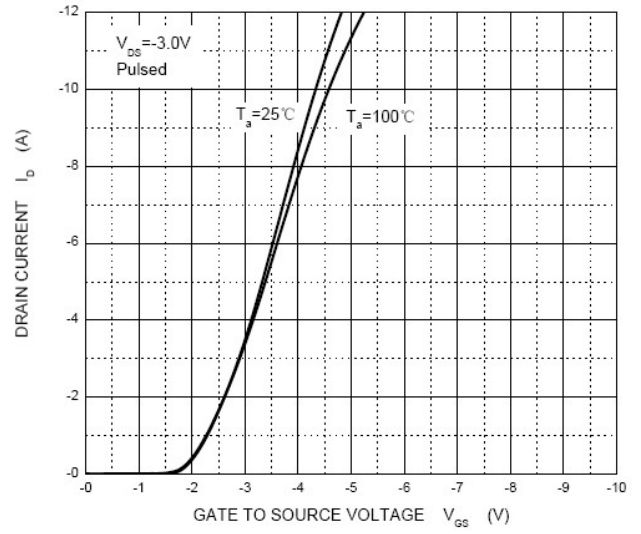
b. Guaranteed by design, not subject to production testing.

Typical characteristics

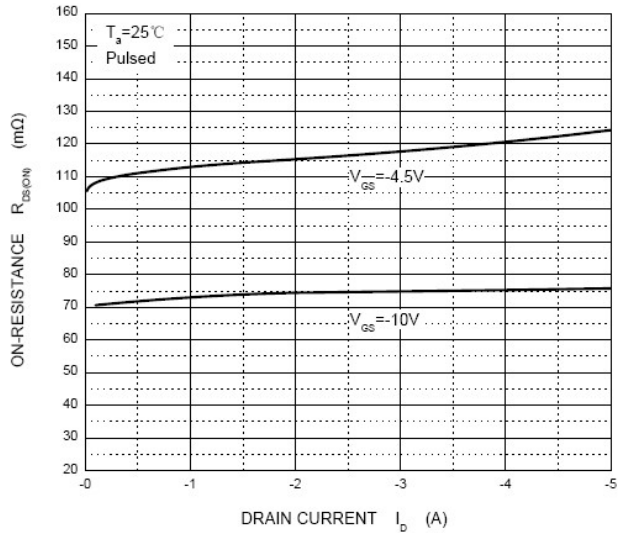
Output Characteristics



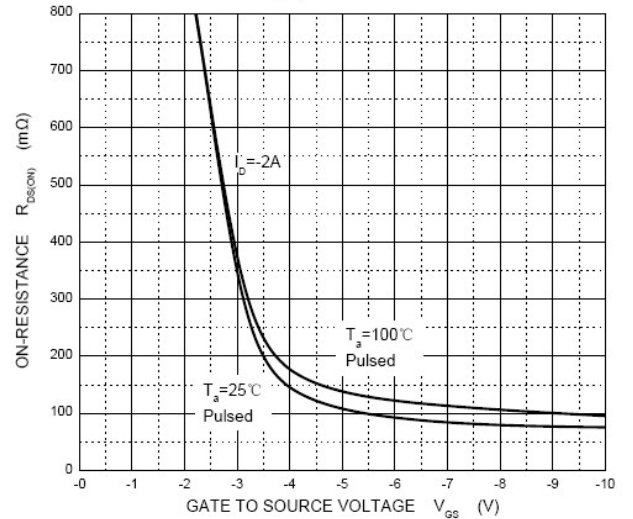
Transfer Characteristics



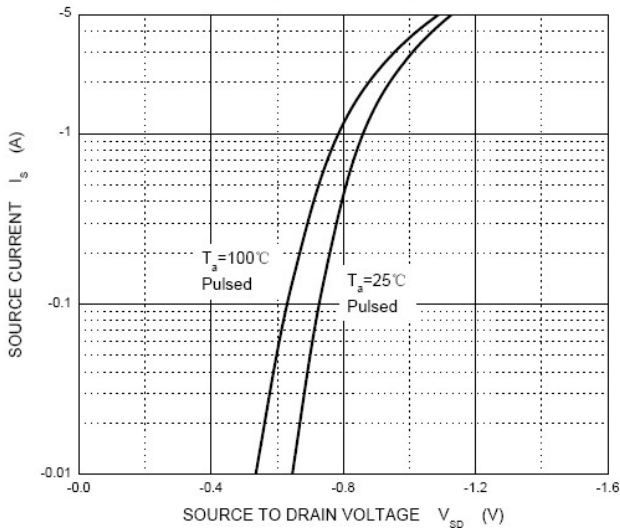
$R_{DS(ON)}$ — I_D



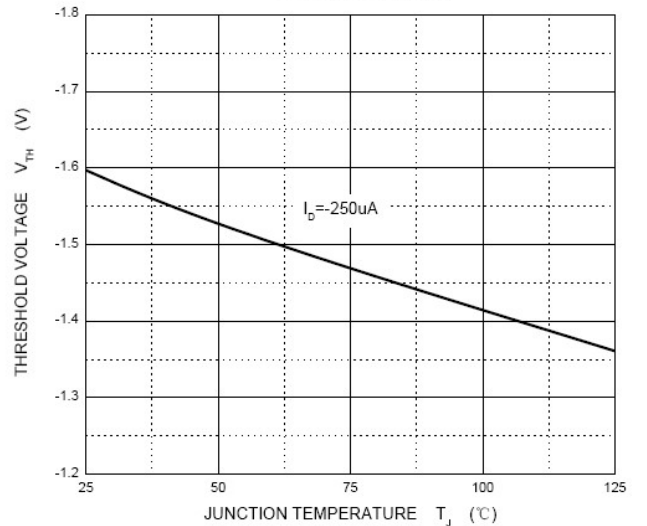
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

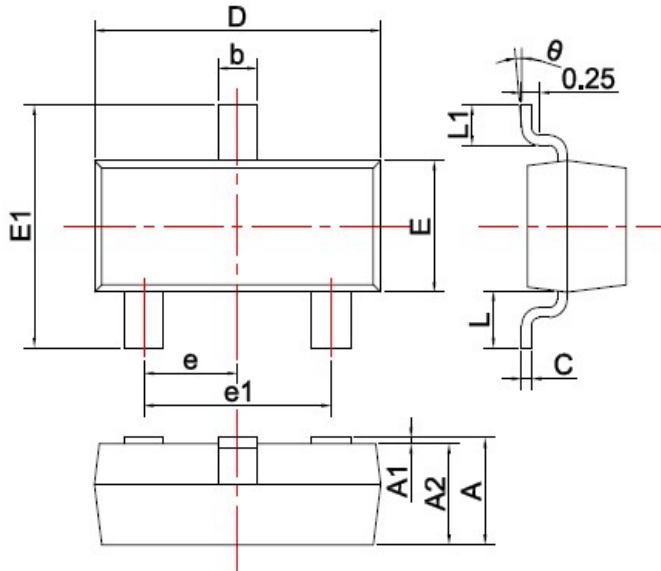


Threshold Voltage



Package Outline

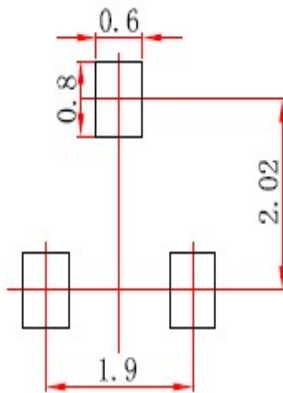
SOT-23



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.

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