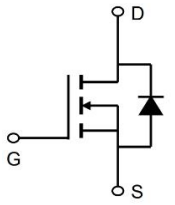
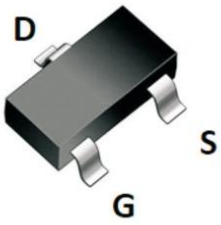
30V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	3.16A
V_{DSS}	30V
R_{DSON}-typ(@V_{GS}=10V)	＜47mΩ(Typ:38 mΩ)
R_{DSON}-typ(@V_{GS}=4.5V)	＜65mΩ(Typ:52 mΩ)





SOT-23

Features

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

Mechanical Data

- Case: SOT-23
- Epoxy UL: 94V-0.
- Mounting Position: Any.

Marking Code	
YFW2306	S6

Maximum Ratings & Thermal Characteristics

(Ratings at 25℃ ambient temperature unless otherwise specified.)

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	3.16	A
Pulsed Drain Current	I_{DM}	20	
Continuous Source-Drain Diode Current	I_S	0.62	
Power Dissipation	P_D	750	mW
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-50-+150	℃
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	100	℃/W

Electrical Characteristics

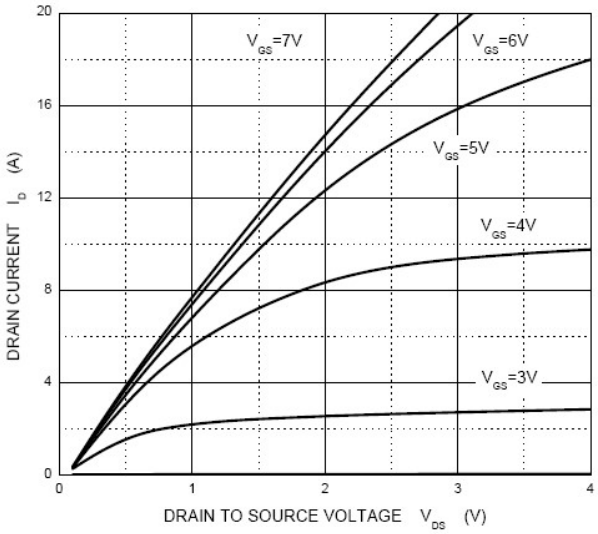
(Ratings at 25℃ ambient temperature unless otherwise specified).

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	BV_{DSS}	30			V
Gate-Threshold voltage*	V_{DS}=VGS, I_D=250uA	$V_{GS(th)}$	1		3.0	V
Gate-body Leakage	V_{DS}=0V, V_{GS}=±20V	I_{GSS}			±100	nA
Zero Gate Voltage Drain current	V_{DS}=30V, V_{GS}=0V	I_{DSS}			0.5	uA
Drain-Source On-Resistance (a)	V_{GS}=10V, I_D=3.5A	$R_{DS(ON)}$		38	47	mΩ
	V_{GS}=4.5V, I_C=2.8A			52	65	
Forward trans conductance (a)	V_{DS}=4.5V, I_D=2.5A	gfs		70		S
Diode forward voltage	I_S=1.25A, V_{GS}=0V	V_{SD}		0.8	1.2	V
Input capacitance(b)	V_{DS}=15V, V_{GS}=0V,f=1MHz	C_{iss}		305		pF
Output capacitance(b)		C_{oss}		65		
Reverse Transfer capacitance(b)		C_{rss}		29		
Gate Charge	V_{DS}=15V, V_{GS}=5V,I_D=2.5A	Qg		3.0	4.5	nC
Total gate charge	V_{DS}=15V, V_{GS}=10V,I_D=2.5A	Qgt		6	9	
Gate-source charge		Qgs		1.6		
Gate-drain charge		Qgd		0.6		
Gate resistance	f=1.0MHz	Rg	2.5	5	7.5	Ω
Turn-on Time	V_{DD}=15V, R_L=15Ω, VGEN=10V, I_D≈1A, R_G=6Ω	$t_{d(on)}$		7	11	ns
Rise time		T_r		12	18	
Turn-off Time		$t_{d(OFF)}$		14	25	
Fall time		t_f		6	10	

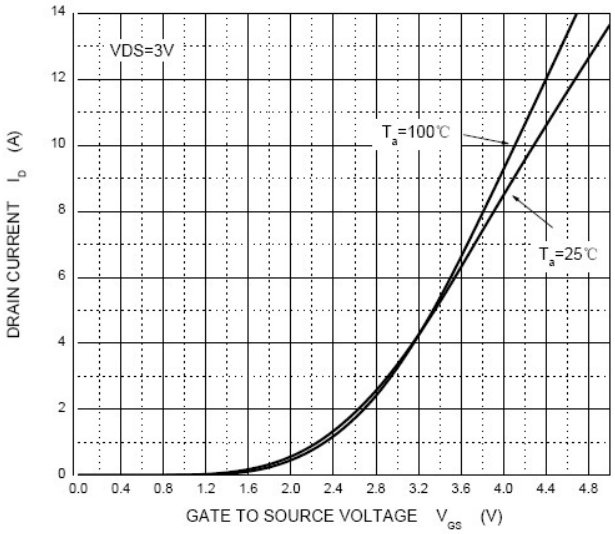
Notes: a. Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
b. These parameters have no way to verify.

Typical characteristics

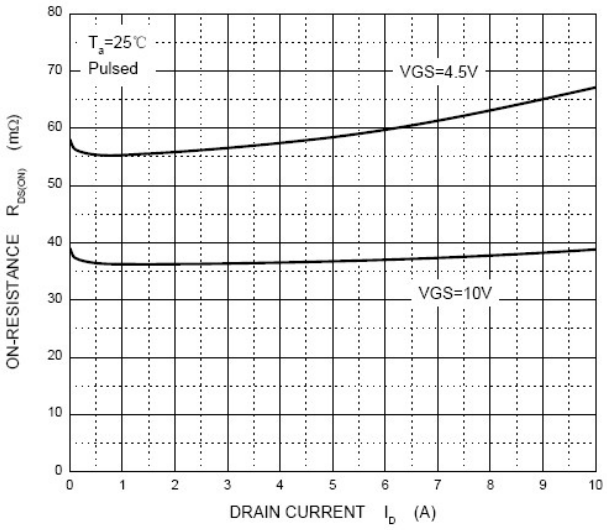
Output Characteristics



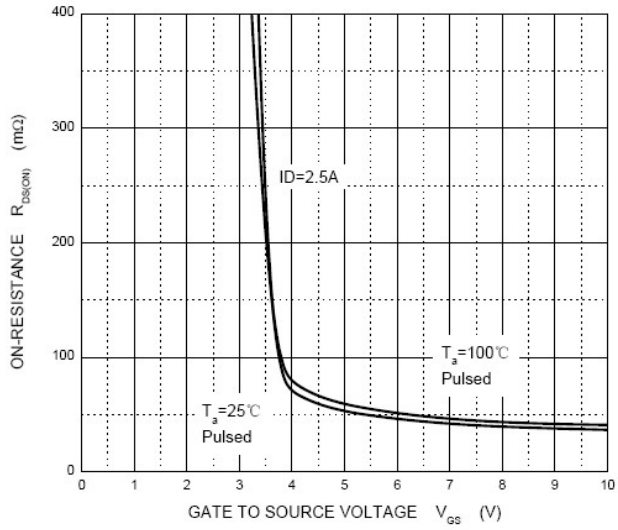
Transfer Characteristics



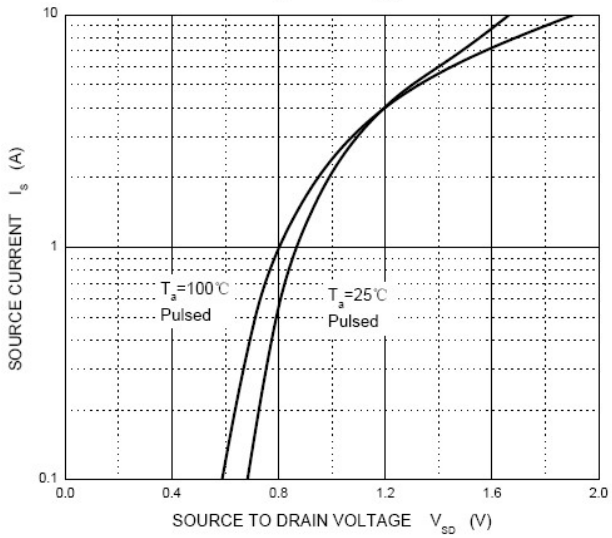
$R_{DS(ON)}$ — I_D



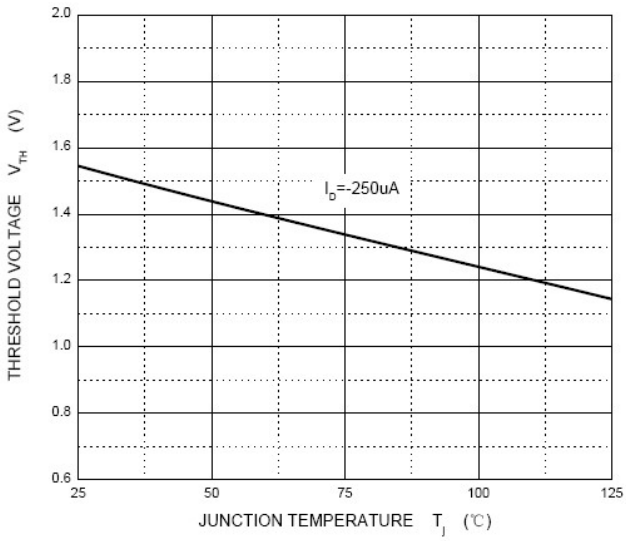
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

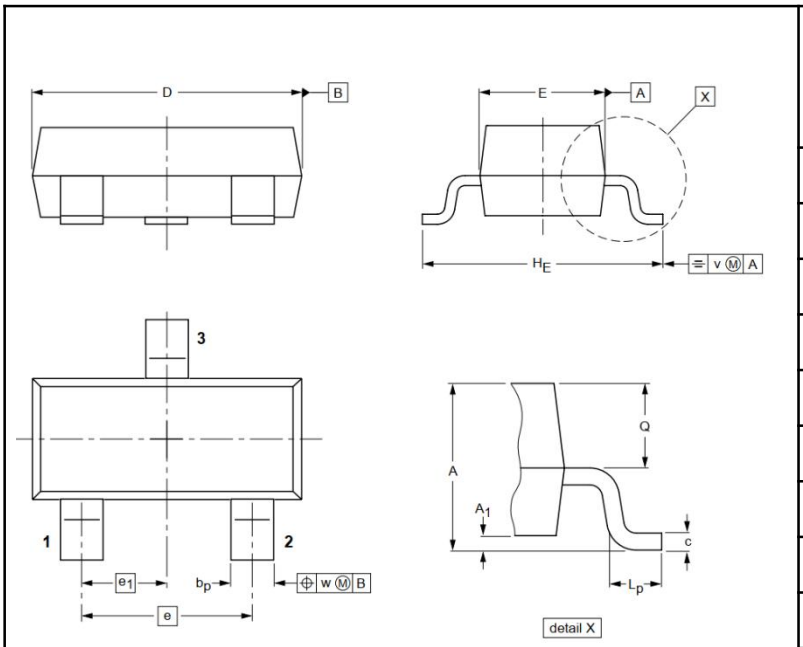


Ordering information

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

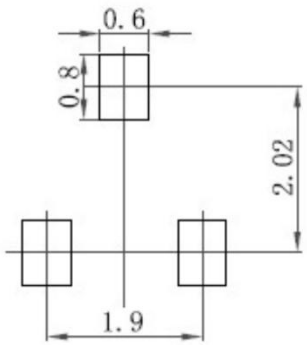
Package Dimensions

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



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