

-20V P-Channel Enhancement Mode MOSFET

MAIN CHARACTERISTICS

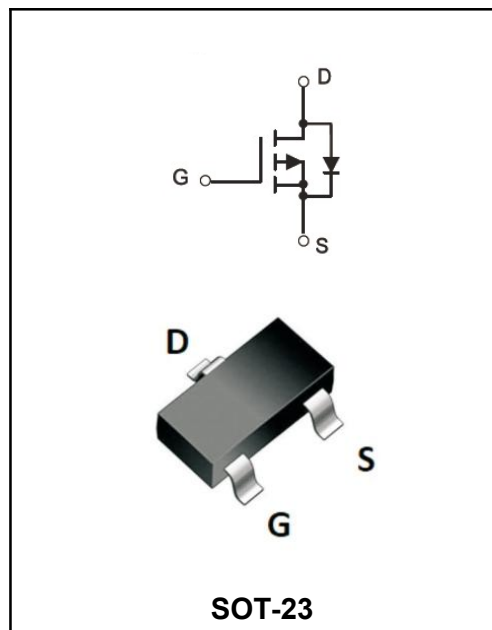
I_D	-8A
V_{DS}	-20V
$R_{DS(on)-typ}(@V_{GS}=-4.5V)$	$<24m\Omega$ (Typ:19m Ω)
$R_{DS(on)-typ}(@V_{GS}=-2.5V)$	$<33m\Omega$ (Typ:26m Ω)

FEATURES

- ◆ Complimentary Paris
- ◆ Low On-Resistance
- ◆ Low Gate Threshold Voltage
- ◆ Fast Switching

Mechanical Data

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



Marking Code

YFW2305A

2305A

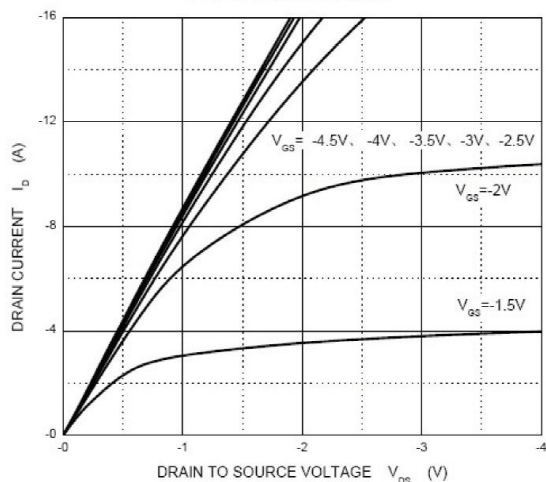
Maximum Ratings-Total Device (Ta=25℃ unless otherwise noted)

Parameter	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	-8	A
Continuous Source-Drain Diode Current	I_S	-1.6	A
Power Dissipation	P_D	350	mW
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-50~+150	℃
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	357	℃/W

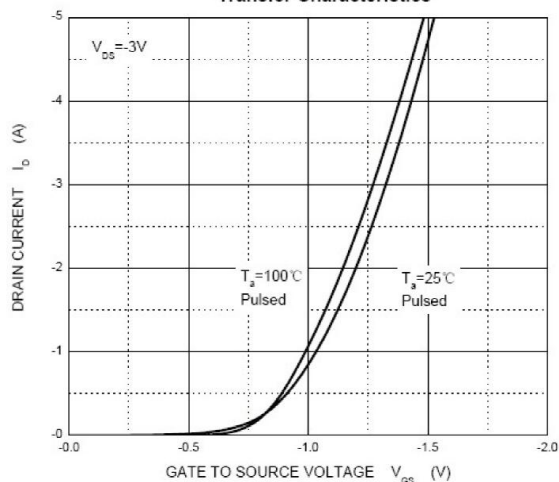
Electrical Characteristics (Ta=25°C, unless otherwise noted)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	BV_{DSS}	-20			V
Gate-Threshold voltage(note2)	$V_{DS}=V_{GS}, I_D=-250\mu A$	$V_{GS(th)}$	-0.4	-0.65	-1.0	V
Gate-body Leakage	$V_{DS}=0V, V_{GS}=\pm 12V$	I_{GSS}			± 100	nA
Zero Gate Voltage Drain current	$V_{DS}=-15V, V_{GS}=0V$	I_{DSS}			-1	μA
Drain-Source On-Resistance (note2)	$V_{GS}=-4.5V, I_D=-4.1A$	$R_{DS(on)}$		19	24	m Ω
	$V_{GS}=-2.5V, I_C=-3.0A$			26	33	
Forward trans conductance	$V_{DS}=-5V, I_D=-4.1A$	g_{fs}	6			S
Input capacitance	$V_{DS}=-4.0V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}		740		pF
Output capacitance		C_{oss}		290		
Reverse Transfer capacitance		C_{rss}		7.8	15	
Turn-on 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 Time		$t_{d(OFF)}$		42	48	
Fall time		t_f		10	20	
Total Gage Charge	$V_{DS}=-4V,$ $V_{GS}=-4.5V,$ $I_D=-4.1A$	Q_g		7.8	15	nC
Gate-Source Charge		Q_{gs}		4.5	9	
Gate-Drain Charge		Q_{gd}		1.2		

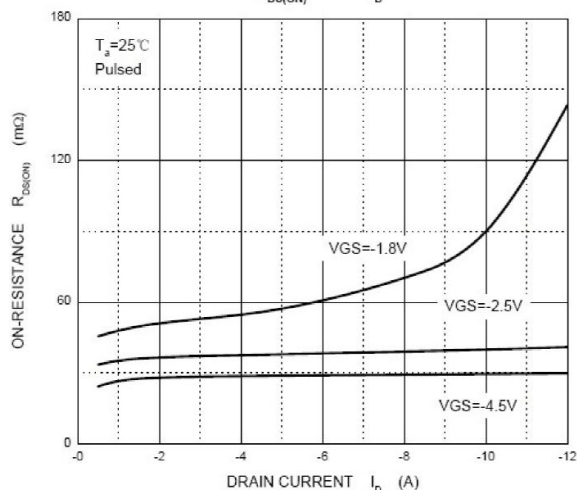
Output Characteristics



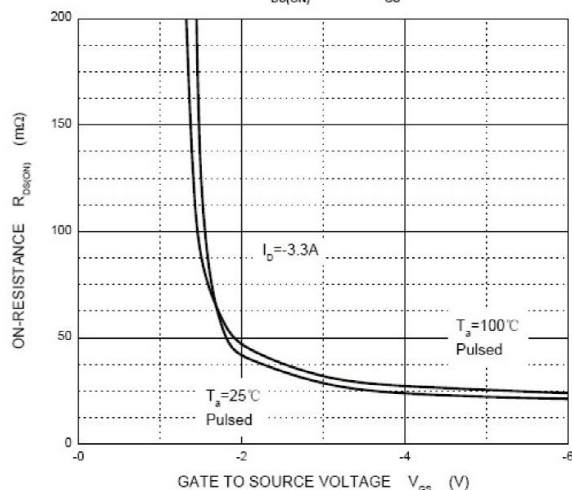
Transfer Characteristics



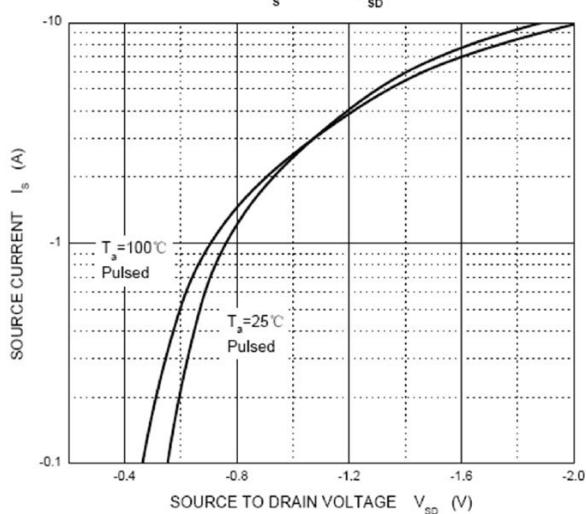
$R_{DS(ON)}$ — I_D



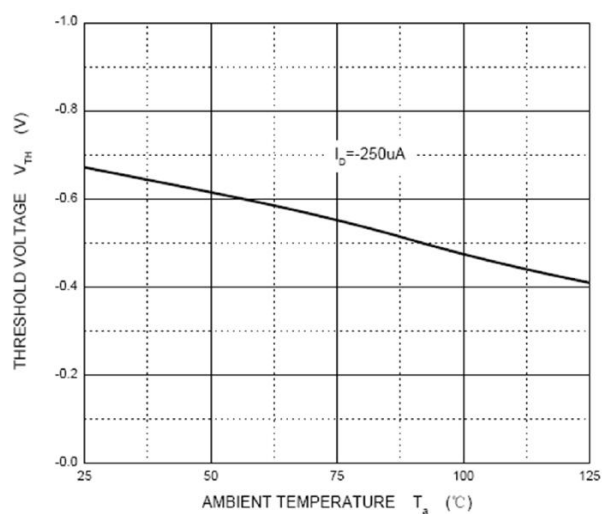
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage



Ordering information

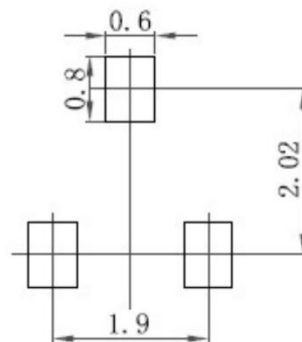
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

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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