

**-20V P-Channel Plastic-Encapsulate MOSFET**

**MAIN CHARACTERISTICS**

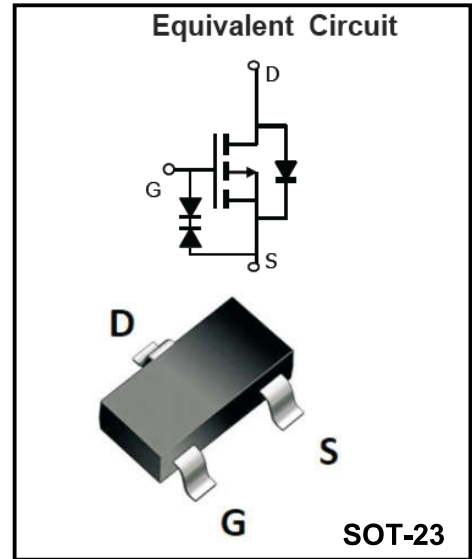
<b>I<sub>D</sub></b>	-4.2A
<b>V<sub>DSS</sub></b>	-20V
<b>R<sub>DS(on)-typ</sub>(@V<sub>GS</sub>-4.5V)</b>	< 50mΩ (Type: 37 mΩ)
<b>R<sub>DS(on)-typ</sub>(@V<sub>GS</sub>-2.5V)</b>	< 60mΩ (Type: 45 mΩ)
<b>R<sub>DS(on)-typ</sub>(@V<sub>GS</sub>-1.8V)</b>	< 73mΩ (Type: 56 mΩ)

**Features**

- ◆ Excellent R<sub>DS(ON)</sub>, low gate charge, low gate voltages
- ◆ Load Switch and in PWM applications.
- ◆ ESD protected

**Mechanical Data**

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



**Product Specification Classification**

Part Number	Package	Marking	Pack
YFW3415A	SOT-23	R15	3000PCS/Tape

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

Parameters	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	-20	V
Gate-Source Voltage	V <sub>GS</sub>	±8	V
Continuous Drain Current	I <sub>D</sub>	-4.2	A
Power Dissipation	P <sub>D</sub>	350	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-50-+150	°C
Thermal Resistance From Junction to Ambient	R <sub>θJA</sub>	357	°C/W

**Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).**

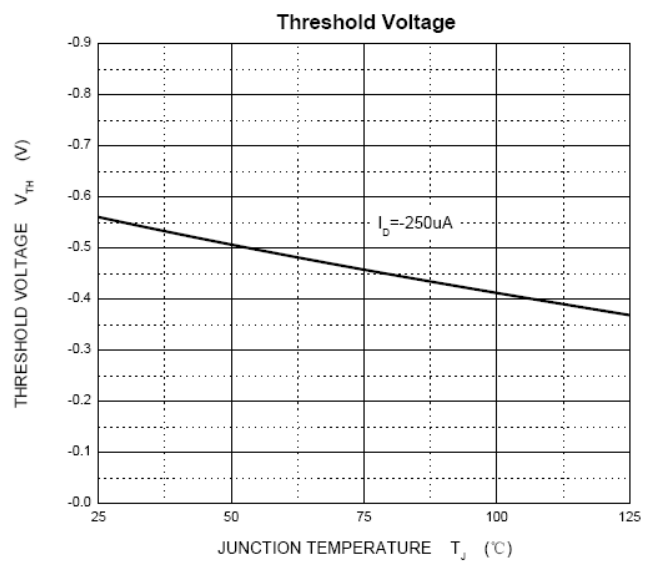
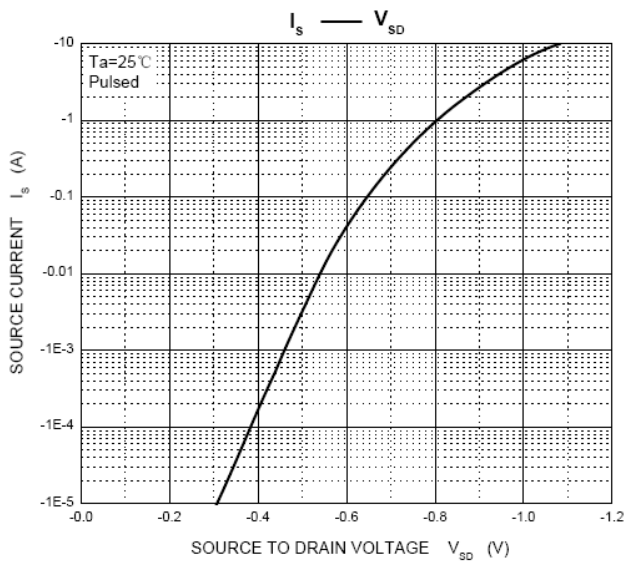
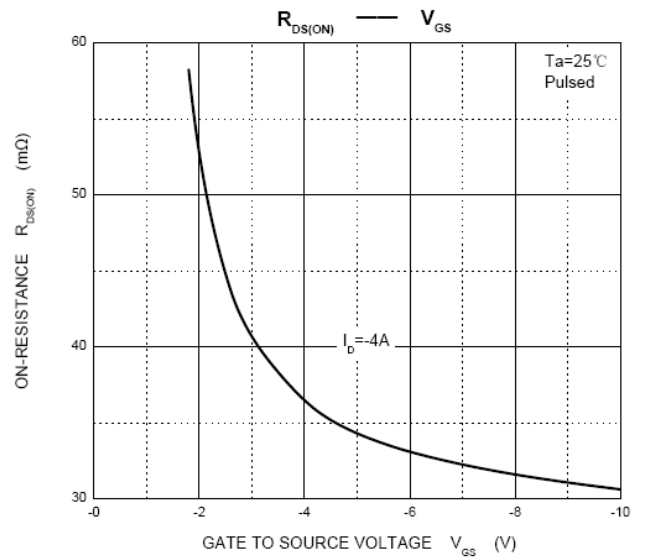
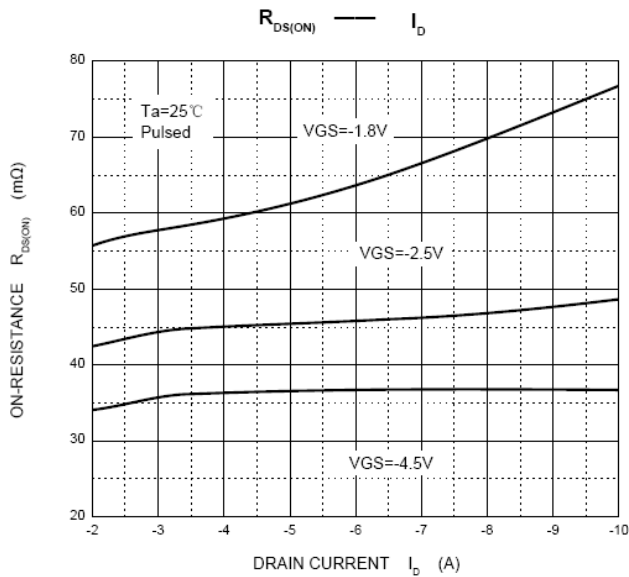
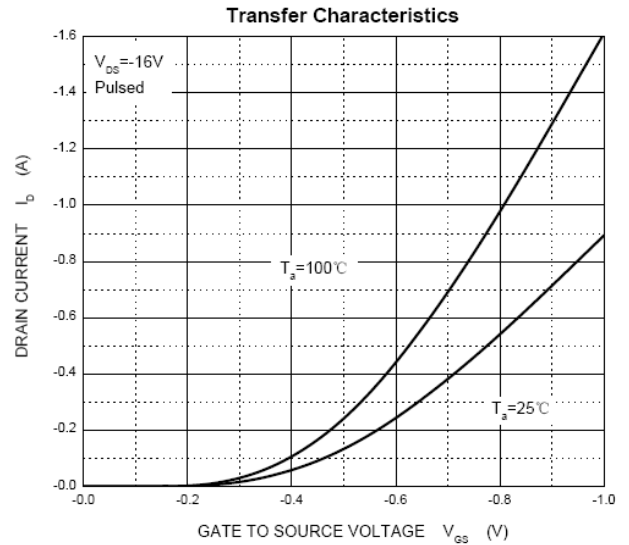
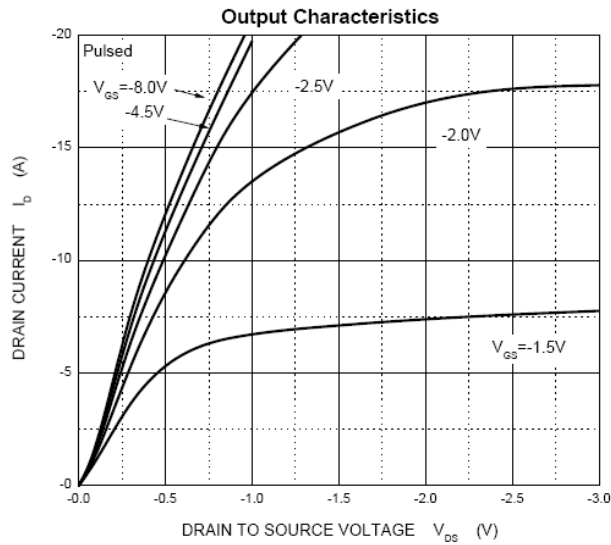
Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate-Threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.3	-0.56	-1.0	V
Gate-body Leakage	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 8V$			$\pm 10$	$\mu A$
		$V_{DS}=0V, V_{GS}=\pm 4.5V$			$\pm 1$	
Zero Gate Voltage Drain current	$I_{DSS}$	$V_{DS}=-16V, V_{GS}=0V$			-1	
Drain-Source On-Resistance <sup>(a)</sup>	$R_{DS(ON)}$	$V_{GS}=-4.5V, I_D=-4A$		37	50	m $\Omega$
		$V_{GS}=-2.5V, I_C=-4A$		45	60	
		$V_{GS}=-1.8V, I_C=-2A$		56	73	
Forward trans conductance <sup>(b)</sup>	$g_{fs}$	$V_{DS}=-5V, I_D=-4A$	8			S
<b>Dynamic<sup>(c)</sup></b>						
Input capacitance	$C_{iss}$	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$		1450		pF
Output capacitance	$C_{oss}$			205		
Reverse Transfer capacitance	$C_{rss}$			160		
Total gate charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-4A$		17.2		nC
Gate-source charge	$Q_{gs}$			1.3		
Gate-drain charge	$Q_{gd}$			4.5		
Gate resistance	$R_g$	$V_{DS}=0V, V_{GS}=0V, f=1MHz$		6.5		$\Omega$
Turn-on Time	$t_{d(on)}$	$V_{DD}=-10V, R_L=2.5\Omega, V_{GEN}=-4.5V, R_{GEN}=3\Omega$		9.5		ns
Rise time	$t_r$			17		
Turn-off Time	$t_{d(off)}$			94		
Fall time	$t_f$			35		
<b>Drain-source body diode characteristics</b>						
Body diode voltage <sup>(b)</sup>	$V_{SD}$	$I_S=-1A, V_{GS}=0V$			-1.0	V

Notes: a. Repetitive rating, pulse width limited by junction temperature.

B. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycles  $\leq 2\%$ .

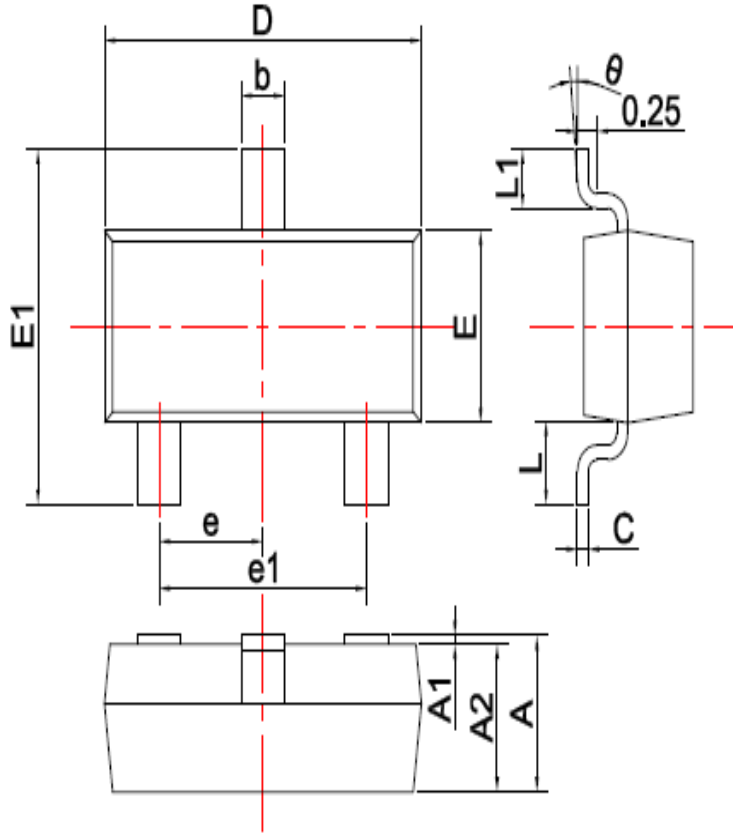
b. These parameters have no way to verify.

Typical characteristics



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°