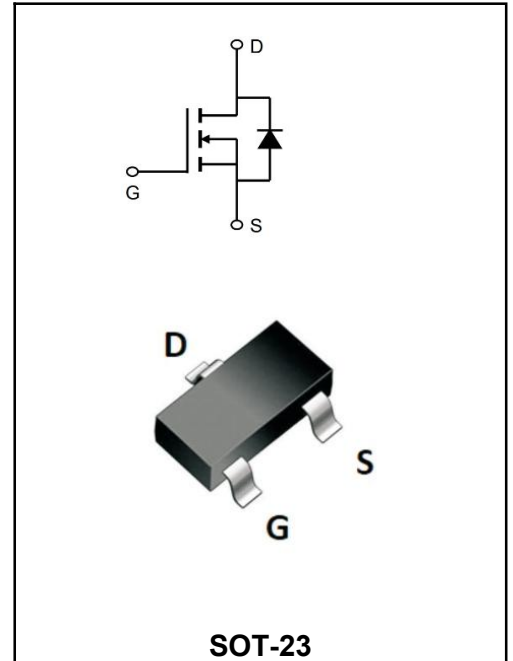


30V N-Channel Enhancement Mode Field Effect Transistor

MAIN CHARACTERISTICS

I_D	2A
V_{DS}	30V
R_{DS(on)-typ(@V_{GS}=10V)}	< 90mΩ (Typ:77mΩ)



Marking Code	
YFW3402C	3402C

FEATURES

- ◆Lead free product is acquired
- ◆Surface mount package

MECHANICAL DATA

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

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	30	V
Gate - Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	2	A
Power Dissipation	P_D	350	mW
Operating and Storage Temperature Range	T_J , T_{STG}	-50 to +150	°C
Thermal Resistance From Junction to Ambient (note 2)	R_{θJA}	357	°C/W

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

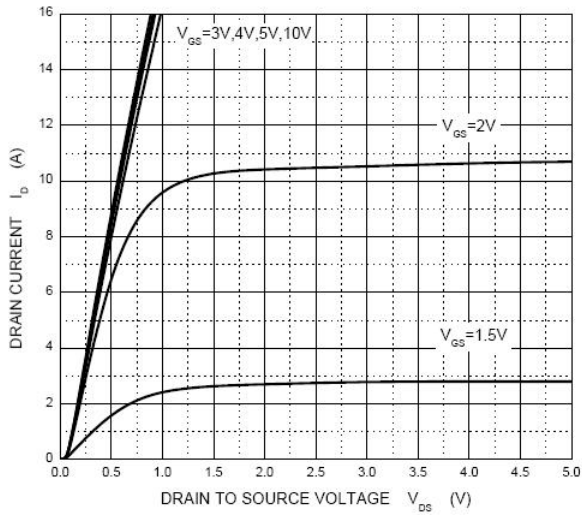
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	30	-	-	V
Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V$	I_{DSS}	-	-	1.0	μA
Gate to Body Leakage Current	$V_{GS}=\pm 12V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	0.6	0.9	1.5	V
Static Drain-Source on-Resistance (note3)	$V_{GS}=10V, I_D=3.6A$	$R_{DS(ON)}$	-	77	90	m Ω
	$V_{GS}=4.5V, I_D=2A$		-	84	95	
	$V_{GS}=2.5V, I_D=1A$		-	108	140	
Forward trans conductance	$V_{DS}=15V, I_D=4A$	g_{fs}	-	8	-	S
Input Capacitance	$V_{DS}=15V$ $V_{GS}=0V$ $f=1.0MHz$	C_{iss}	-	390	-	μF
Output Capacitance		C_{oss}	-	54.5	-	
Reverse Transfer Capacitance		C_{rss}	-	41	-	
Gate resistance	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	R_g	-	3	-	Ω
Turn-on Time	$V_{GS}=10V$ $RL=3.75\Omega$ $V_{DS}=15V$ $R_{GEN}=6\Omega$	$t_{d(on)}$	-	3.3	-	ns
Rise time		T_r	-	1.0	-	
Turn-off Time		$t_{d(OFF)}$	-	21.7	-	
Fall time		t_f	-	2.1	-	
Total Gate Charge	$V_{DS}=15V$ $V_{GS}=4.5V$ $I_D=4A$	Q_g	-	4.34	-	nC
Gate to Source Charge		Q_{gs}	-	0.6	-	
Gate to Drain Charge		Q_{gd}	-	1.38	-	
Diode forward voltage	$V_{GS}=0V, I_S=1A$	V_{SD}	-	-	1.0	V

Notes:

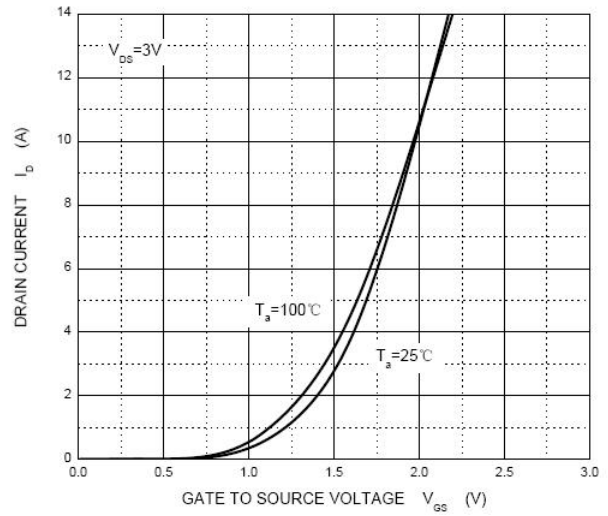
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t < 5$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

Typical characteristics

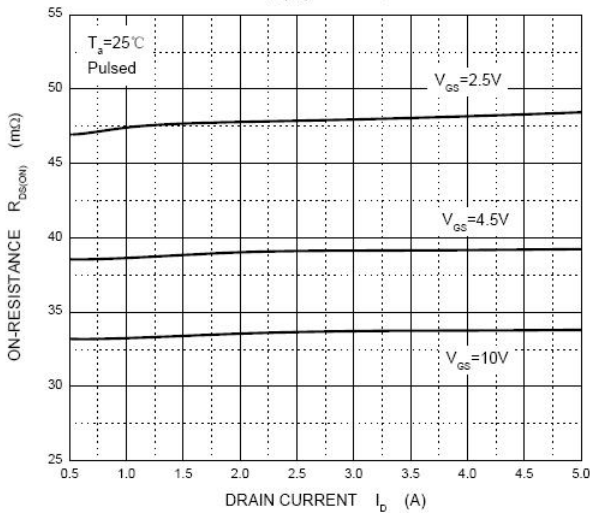
Output Characteristics



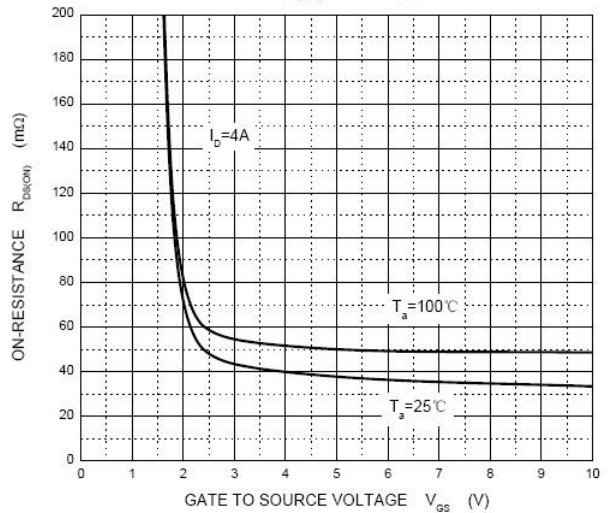
Transfer Characteristics



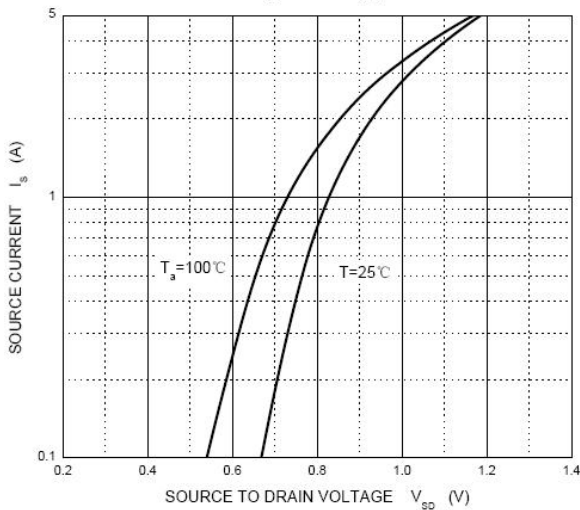
$R_{DS(ON)}$ — I_D



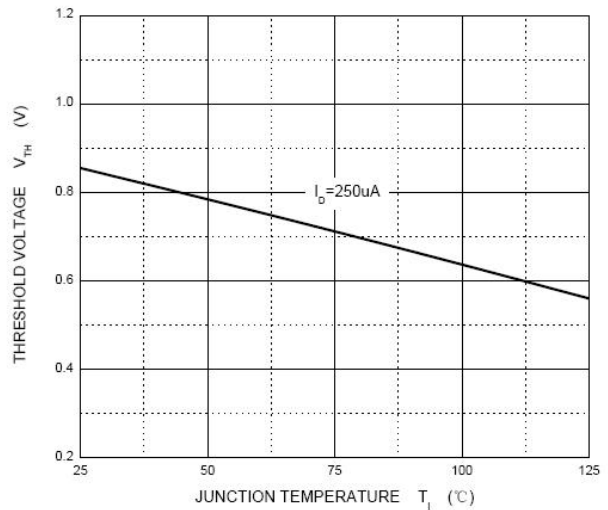
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage



Ordering information

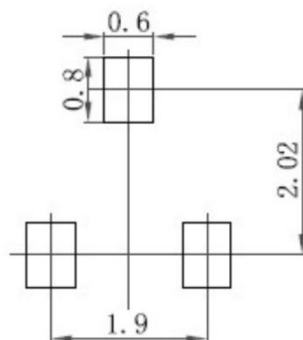
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

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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