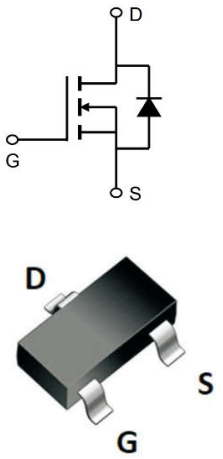
30V N-Channel Enhancement Mode Field Effect Transistor

MAIN CHARACTERISTICS

I_D	5.8A
V_{DSS}	30V
R_{DSON}-typ(@V_{GS}=10V)	＜30mΩ(Typ:23mΩ)



1.Gate 2.Source 3.Drain

SOT-23

Features

- High dense cell design for extremely low RDS(on).
- Exceptional on-resistance and maximum DC current capability.
- Load/Power Switching.
- Interfacing Switching

Mechanical Data

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

Marking Code	
YFW3404B	3404B

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	5.8	A
Drain Current-Pulsed(note 1)	I_{DM}	30	A
Operating and Storage Temperature Range	T_J ,T_{STG}	-50 to +150	°C
Thermal Resistance From Junction to Ambient (note 2)	$R_{\theta JA}$	357	°C/W

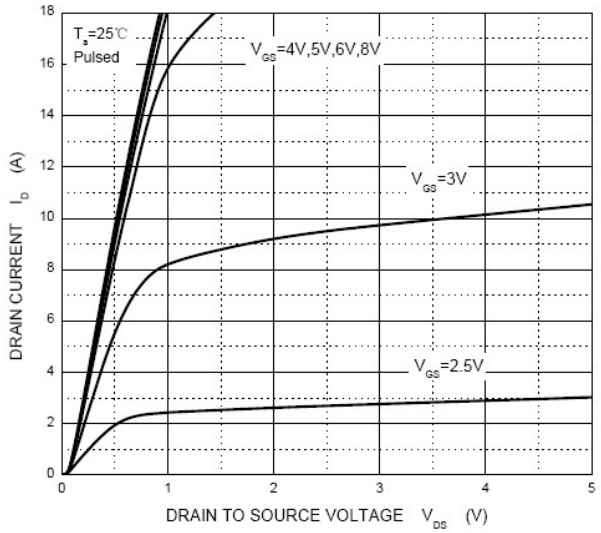
Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	**V(BR)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}=±20V, V_{DS}=0V	**I_{GSS}**	-	-	±100	**nA**
Gate -Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	**$V_{GS(th)}$**	1.0	1.4	3.0	**V**
Static Drain-Source on-Resistance (note3)	V_{GS}=10V, I_D=5.8A	**$R_{DS(ON)}$**	-	23	30	**mΩ**
	V_{GS}=4.5V, I_D=4.8A		-	31	42	
Forward trans conductance	VDS=5V, ID=5.8A	**gfs**	5	-	-	**S**
Input Capacitance	V_{DS}=15V V_{GS}=0V f=1.0MHz	**C_{iss}**	-	-	820	**pF**
Output Capacitance		**C_{oss}**	-	118	-	
Reverse Transfer Capacitance		**C_{rss}**	-	85	-	
Gate resistance	VDS=0V, VGS=0V,f=1MHz	**Rg**	-	-	1.5	**Ω**
Turn-on Time	VGS=10V RL=2.6Ω VDS=15V RGEN=3Ω	**$t_{d(on)}$**	-	-	6.5	**ns**
Rise time		**T_r**	-	3.1	-	
Turn-off Time		**$t_{d(OFF)}$**	-	15.1	-	
Fall time		**t_f**	-	2.7	-	
Diode forward voltage	V_{GS}=0V, I_S=1A	**V_{SD}**	-	-	1.0	**V**

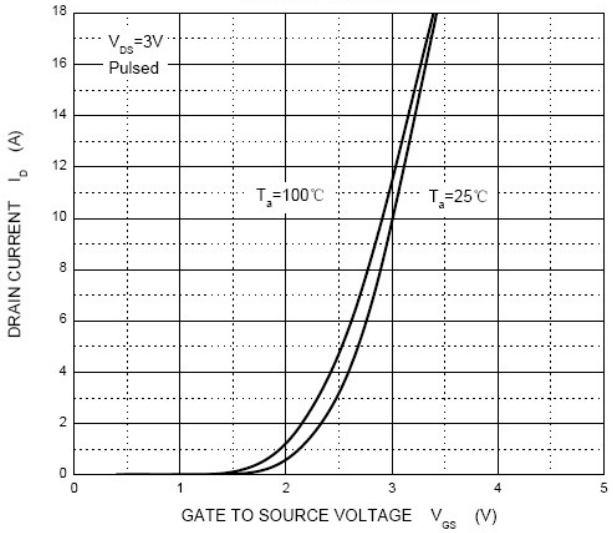
Notes:
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t<5 sec.
3. Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
4. Guaranteed by design, not subject to production testing.

Typical characteristics

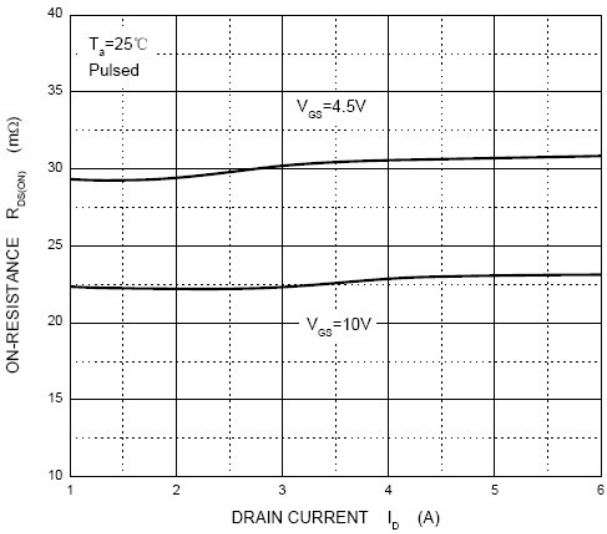
Output Characteristics



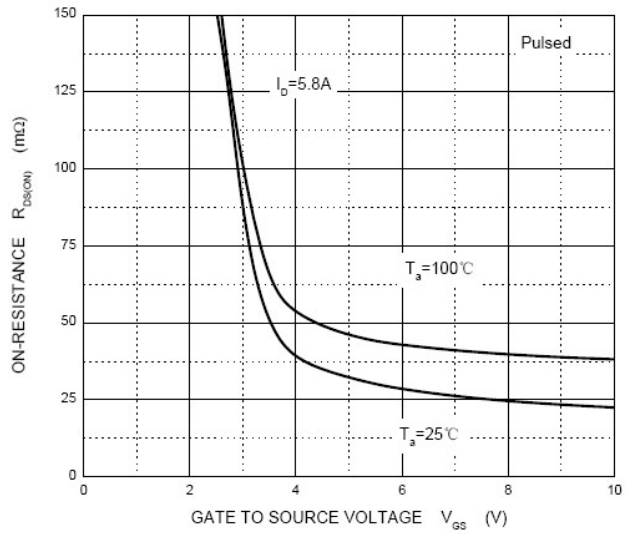
Transfer Characteristics



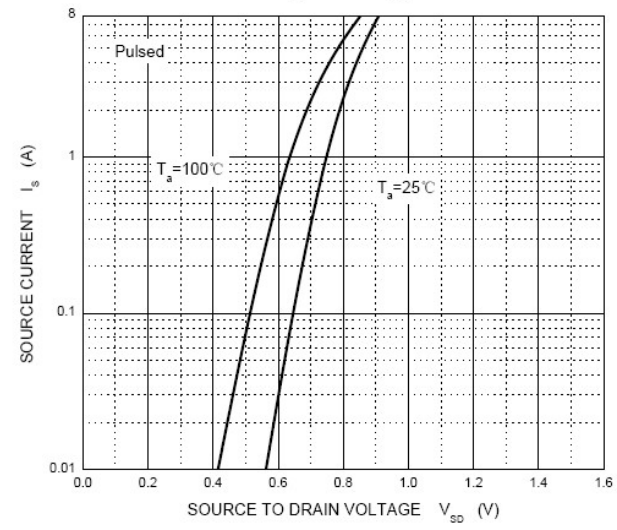
$R_{DS(ON)}$ —— I_D



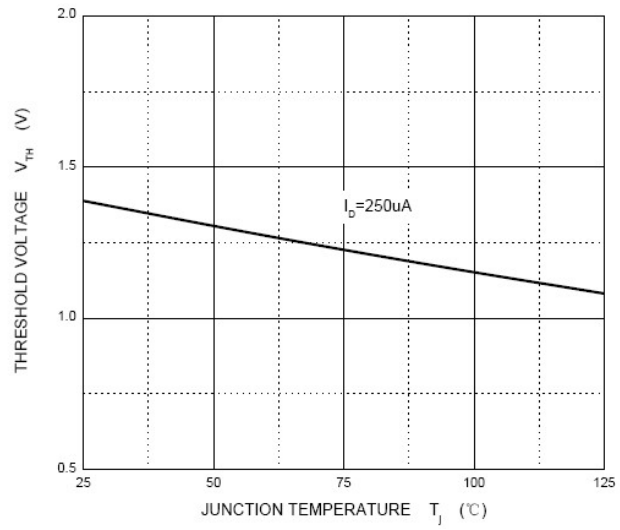
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage

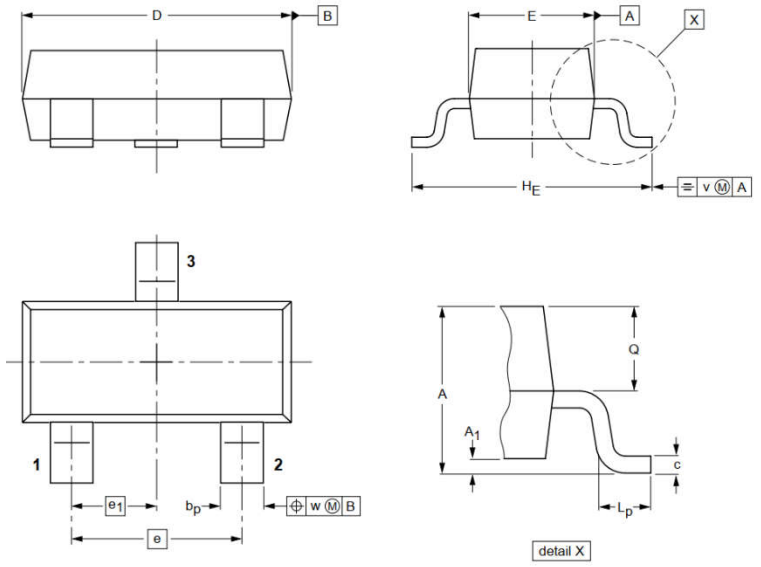


Ordering information

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

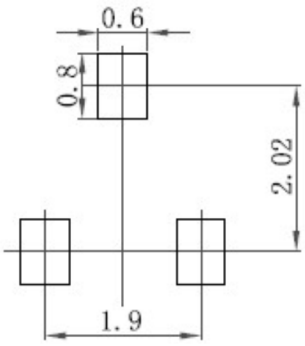
Package Dimensions

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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