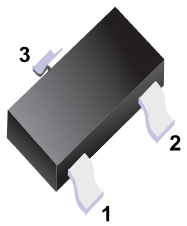
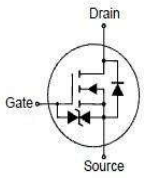
20V N-Channel MOSFET

MAIN CHARACTERISTICS

I_D	0.75A
V_{DSS}	20V
R_{DSON}-typ(@V_{GS}=4.5V)	＜380mΩ(Typ:270mΩ)
R_{DSON}-typ(@V_{GS}=2.5V)	＜450mΩ(Typ:320mΩ)
R_{DSON}-typ(@V_{GS}=1.8V)	＜800mΩ(Typ:390mΩ)





1. GATE
2. SOURCE
3. DRAIN

SOT-523

Marking Code	
YFW3134KT	34K

FEATURES

- High-Side Switching
- Low On-Resistance
- Low Threshold
- Fast Switching Speed

MECHANICAL DATA

- Case: SOT-523
- Epoxy UL: 94V-0
- Mounting Position: Any

Maximum Ratings & Thermal Characteristics

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

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	0.75	A
Pulsed Drain Current (note1)	I_{DM}	3	A
Power Dissipation(note2)	P_D	150	mW
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-50-+150	℃
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	625	℃/W

Electrical Characteristics

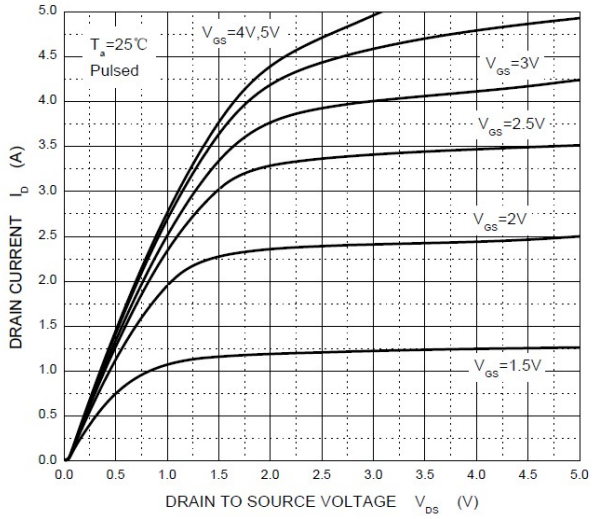
(Ratings at 25℃ ambient temperature unless otherwise specified).

Parameter	Test Condition	Symbols	Limits			Unit
			Min	Typ	Max	
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	BV_{DSS}	20			V
Gate-Threshold voltage(note3)	V_{DS}=VGS, I_D=250uA	$V_{GS(th)}$	0.35	0.54	1.1	V
Gate-body Leakage	V_{DS}=0V, V_{GS}=±10V	I_{GSS}			±20	uA
Zero Gate Voltage Drain current	V_{DS}=20V, V_{GS}=0V	I_{DSS}			1	uA
Drain-Source On-Resistance (note3)	V_{GS}=4.5V, I_D=0.65A	$R_{DS(ON)}$		270	380	mΩ
	V_{GS}=2.5V, I_C=0.55A			320	450	
	V_{GS}=1.8V, I_C=0.45A			390	800	
Forward trans conductance	V_{DS}=10V, I_D=0.8A	g_{FS}	1			S
Input capacitance	V_{DS}=16V, V_{GS}=0V, f=1MHz	C_{iss}			120	pF
Output capacitance		C_{oss}			20	
Reverse Transfer capacitance		C_{rss}			15	
Turn-on Delay Time	V_{DD}=10V R_{GEN}=10Ω V_{GS}=4.5V I_D=0.5A	$t_{d(on)}$		6.7		ns
Rise time		T_r		4.8		
Turn-off Delay Time		$t_{d(OFF)}$		17.3		
Fall time		t_f		7.4		
Diode forward voltage(note3)	I_S=0.15A, V_{GS}=0V	V_{SD}			1.2	V

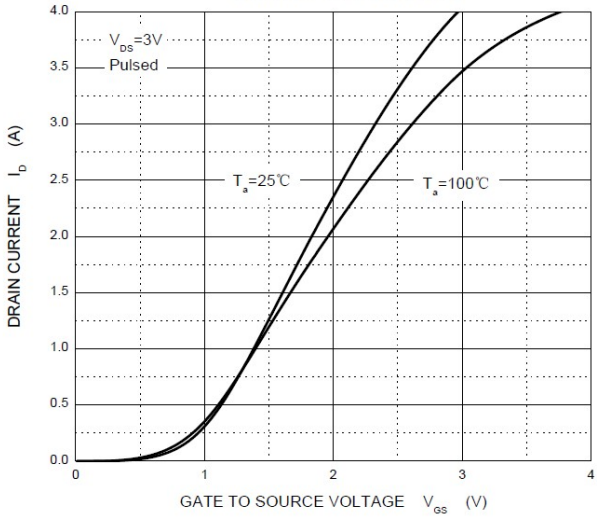
Notes:
1.Repetitive Rating: Pulse width limited by maximum junction temperature.
2.This test is performed with on heat sink at Ta=25℃
3.Pulse Test: Pulse Width ≤300us, Duty Cycle≤0.5%.
4.These parameters have no way to verify.

Typical characteristics

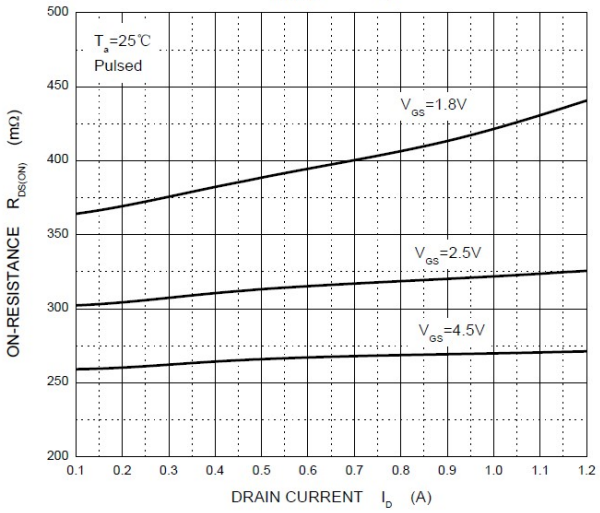
Output Characteristics



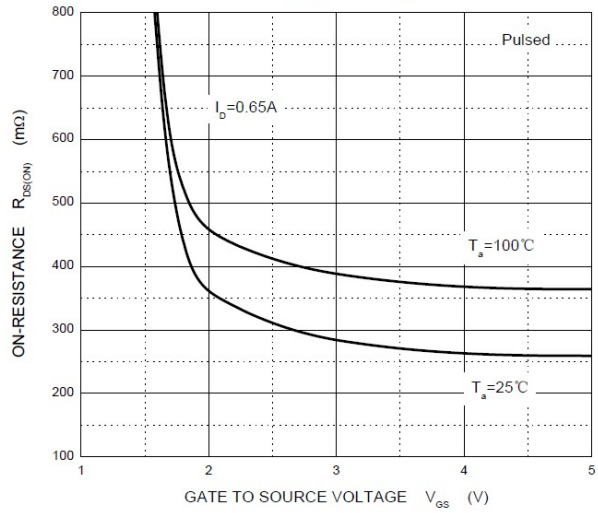
Transfer Characteristics



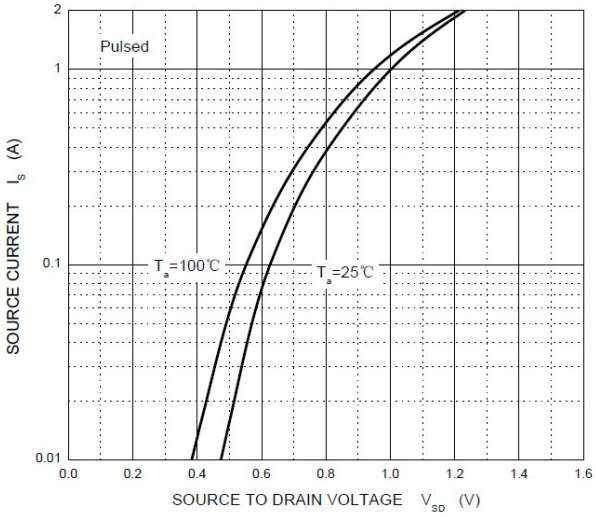
$R_{DS(ON)}$ —— I_D



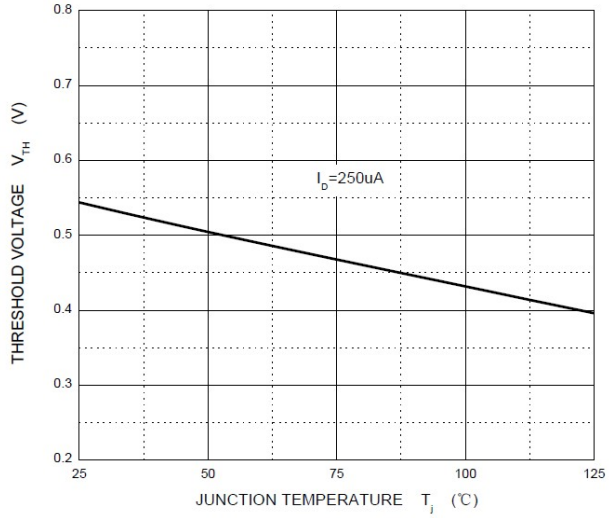
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage

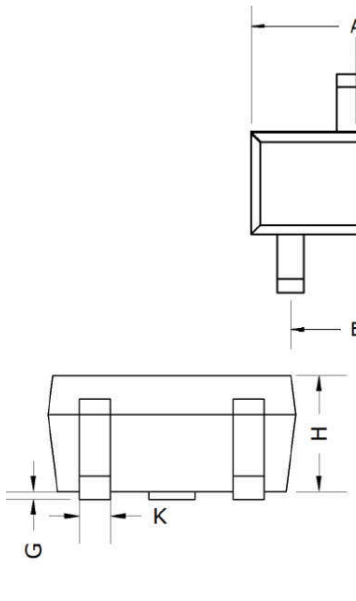


Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-523	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

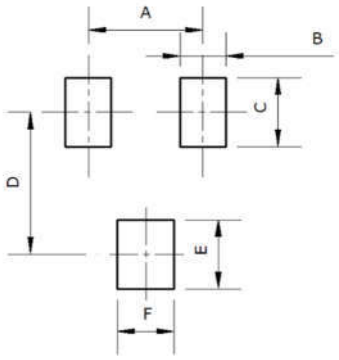
Package Dimensions

SOT-523



Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.50	1.70	59	67
B	0.75	0.85	30	33
C	1.45	1.75	57	69
D	0.50TYP		0.020TYP	
E	0.90	1.10	35	43
G	0.00	0.10	0	4
H	0.60	0.80	24	31
J	0.10	0.20	4	8
K	0.15	0.35	6	14
L	0.26	0.46	10	18

The recommended mounting pad size



Millimeter (mm)	
Dim.	TYP
A	1.00
B	0.40
C	0.60
D	1.24
E	0.60
F	0.50

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