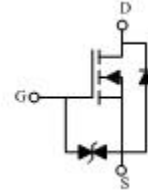


## Feature

- 20V,0.75A  
 $R_{DS(ON)} < 110m\ \Omega @ V_{GS}=4.5V$  TYP:90m  $\Omega$   
 $R_{DS(ON)} < 150m\ \Omega @ V_{GS}=2.5V$  TYP:115m  $\Omega$   
 $R_{DS(ON)} < 165m\ \Omega @ V_{GS}=1.8V$  TYP:165 m  $\Omega$
- Advanced Trench Technology
- Lead free product is acquired
- ESD Protected

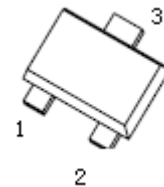


Equivalent Circuit

## Application

- Interfacing Switching
- Load Switching
- Logic Level shift

### SOT-523



1. GATE
2. SOURCE
3. DRAIN

## Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
KF	AP3134N5	SOT-523	7 inch	-	3000

## ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current ( $T_c = 25^\circ\text{C}$ )	$I_D$	1.2	A
Continuous Drain Current ( $T_c = 70^\circ\text{C}$ )	$I_D$	0.7	A
Pulsed Drain Current	$I_{DM}$	1.8	A
Power Dissipation	$P_D$	0.15	W
Thermal Resistance from Junction to Ambient <sup>(4)</sup>	$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

**MOSFET ELECTRICAL CHARACTERISTICS**( $T_a=25^{\circ}\text{C}$  unless otherwise noted)

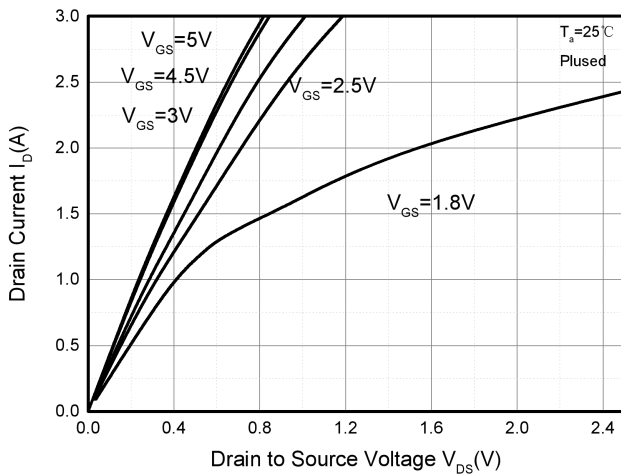
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20	-	-	V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$	-	-	1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$	-	-	$\pm 10$	$\mu A$
Gate threshold voltage <sup>(3)</sup>	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.3	0.65	1.0	V
Drain-source on-resistance <sup>(3)</sup>	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 1.2A$	-	90	110	m $\Omega$
		$V_{GS} = 2.5V, I_D = 0.8A$	-	115	150	
		$V_{GS} = 1.8V, I_D = 0.3A$		165	215	
<b>Dynamic characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 16V, V_{GS} = 0V, f = 1MHz$	-	79	-	pF
Output Capacitance	$C_{oss}$		-	13	-	
Reverse Transfer Capacitance	$C_{rss}$		-	9	-	
<b>Switching characteristics</b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V, I_D = 0.5A,$ $V_{GS} = 4.5V, R_G = 10\Omega$	-	6.7	-	ns
Turn-on rise time	$t_r$		-	4.8	-	
Turn-off delay time	$t_{d(off)}$		-	17.3	-	
Turn-off fall time	$t_f$		-	7.4	-	
Total Gate Charge	$Q_g$	$V_{DS} = 15V, I_D = 1A,$ $V_{GS} = 4.5V$	-	1.6	-	nC
Gate-Source Charge	$Q_{gs}$		-	0.2	-	
Gate-Drain Charge	$Q_{gd}$		-	0.2	-	
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage <sup>(3)</sup>	$V_{DS}$	$V_{GS} = 0V, I_S = 0.5A$	-	-	1.3	V
Diode Forward current <sup>(4)</sup>	$I_S$		-	-	1.2	A

**Notes:**

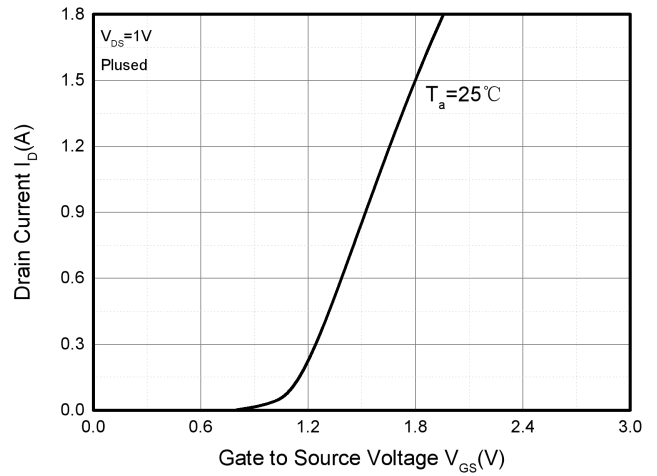
1. Repetitive Rating: pulse width limited by maximum junction temperature
2. Pulse Test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$
3. Surface Mounted on FR4 Board,  $t \leq 10$  sec

**Typical Characteristics**

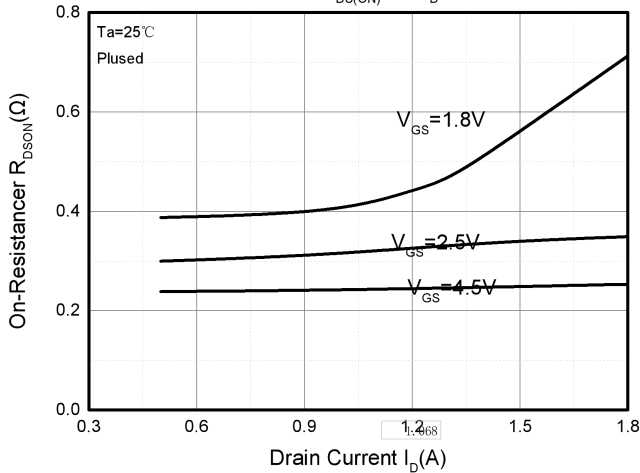
Output Characteristics



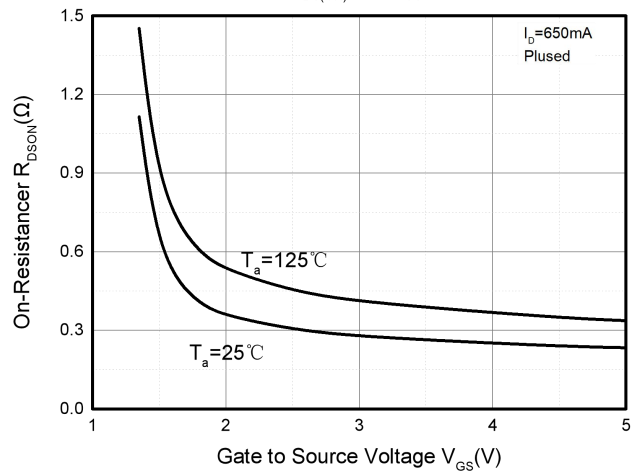
Transfer Characteristics



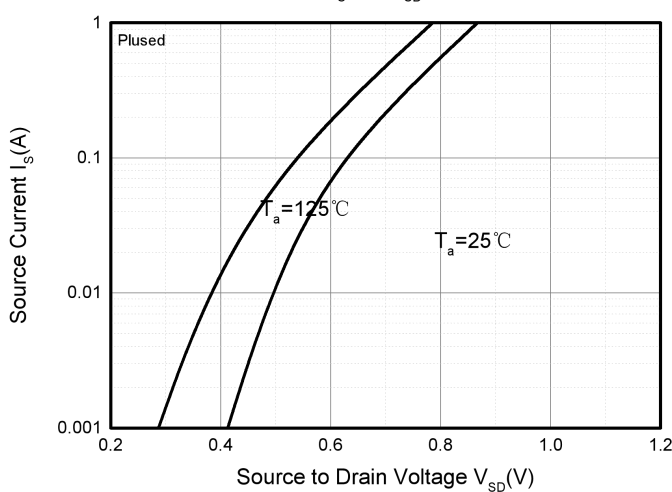
$R_{DS(ON)} - I_D$



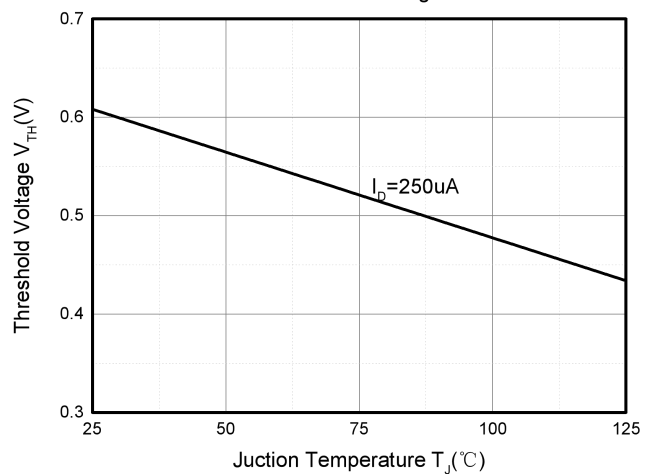
$R_{DS(ON)} - V_{GS}$



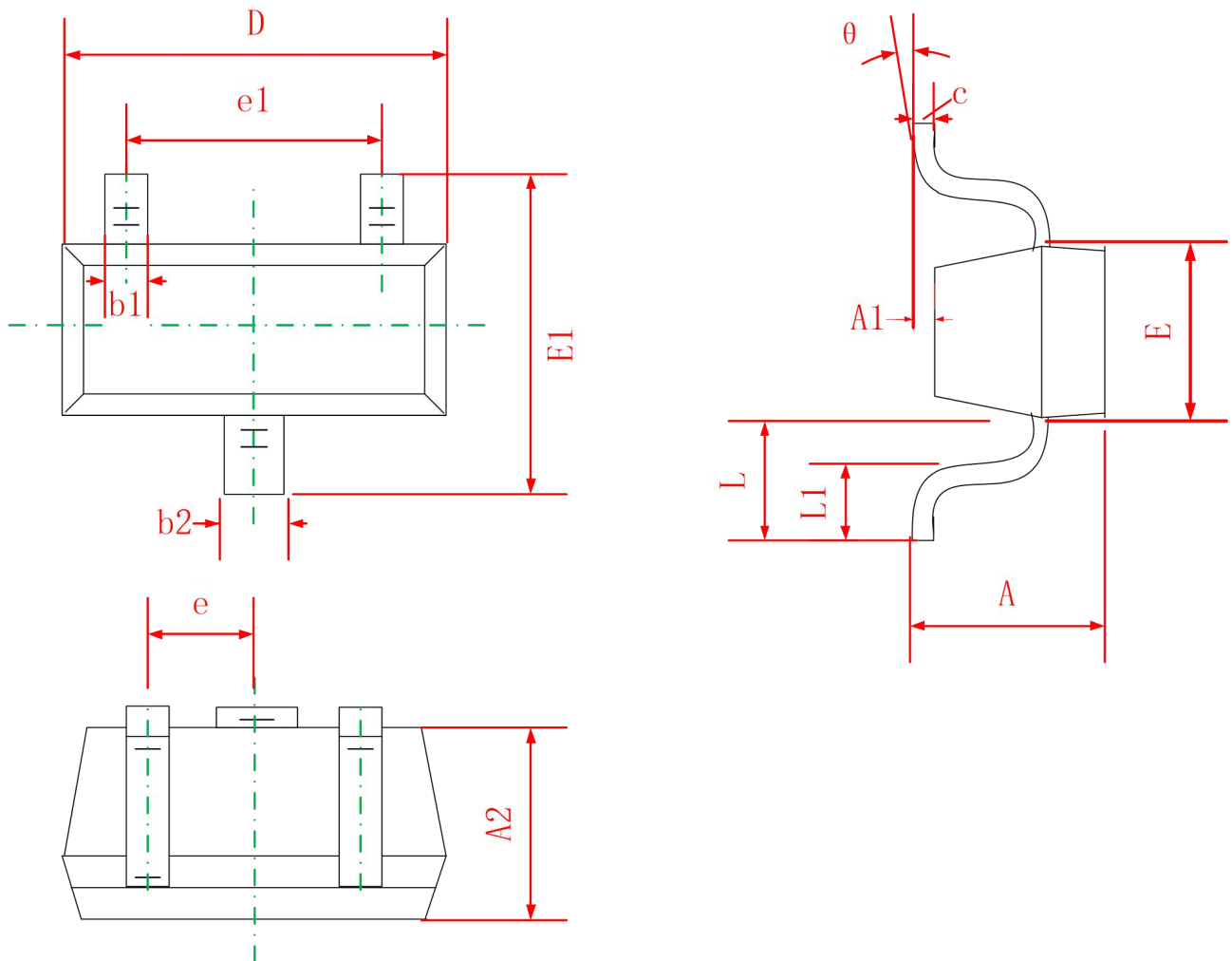
$I_S - V_{SD}$



Threshold Voltage



**SOT-523 Package Information**



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
C	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500 TYP	
e1	0.900	1.100
L	0.400 REF	
L1	0.260	0.460
θ	0°	8°

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