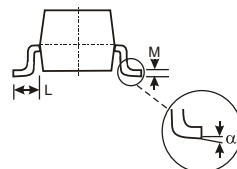
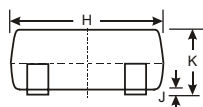
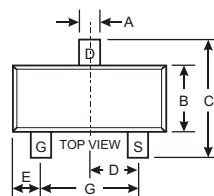


### Features

- Super high density cell design for extremely low  $R_{DS(ON)}$ .
- Exceptional on-resistance and maximum DC current capability.
- We declare that the material of product compliance with RoHS requirements.



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
$\alpha$	0°	8°
All Dimensions in mm		

### APPLICATIONS

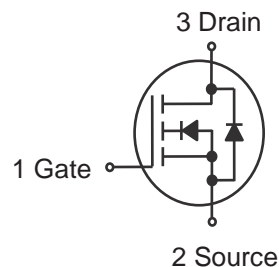
- Power Management in Notebook.
- Portable equipment.
- Battery powered system.
- Load switch.
- Marking Code:A09T.

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current	$I_D$	5.8	A
Peak Drain Current <sup>1)</sup>	$I_{DM}$	30	A
Power Dissipation	$P_{tot}$	0.35	W
Thermal Resistance from Junction to Ambient (PCB mounted) <sup>2)</sup>	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> Repetitive Rating: Pulse width limited by the Maximum junction temperature.

<sup>2)</sup> 1 in<sup>2</sup> 2oz Cu PCB board.



### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

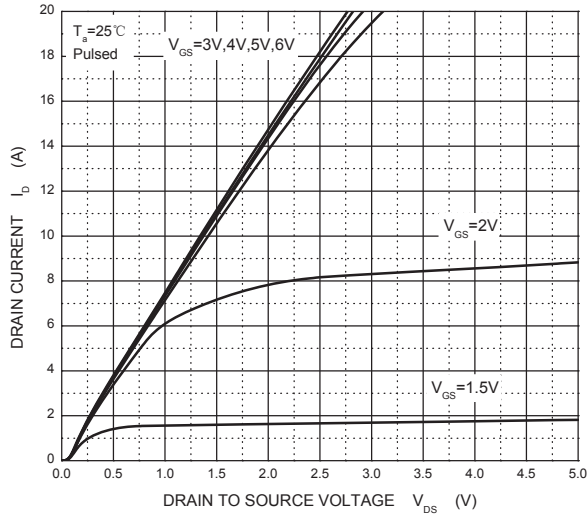
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$			1	$\mu A$
Gate-source leakage current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 100$	nA
On characteristics (note 3)						
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5.8A$		29	32	m $\Omega$
		$V_{GS} = 4.5V, I_D = 5A$		32	38	m $\Omega$
		$V_{GS} = 2.5V, I_D = 4A$		40	45	m $\Omega$
Forward tranconductance	$g_{FS}$	$V_{DS} = 5V, I_D = 5A$	8			S
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.7		1.4	V
Dynamic Characteristics (note 4,5)						
Input capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$			1155	pF
Output capacitance	$C_{oss}$			108		pF
Reverse transfer capacitance	$C_{rss}$			84		pF
Gate resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$			3.6	$\Omega$
Switching Characteristics (note 4,5)						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V,$ $R_L = 2.7\Omega, R_{GEN} = 3\Omega$			5	ns
Turn-on rise time	$t_r$				7	ns
Turn-off delay time	$t_{d(off)}$				40	ns
Turn-off fall time	$t_f$				6	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 3)	$V_{SD}$	$I_S = 1A, V_{GS} = 0V$			1	V

**Note :**

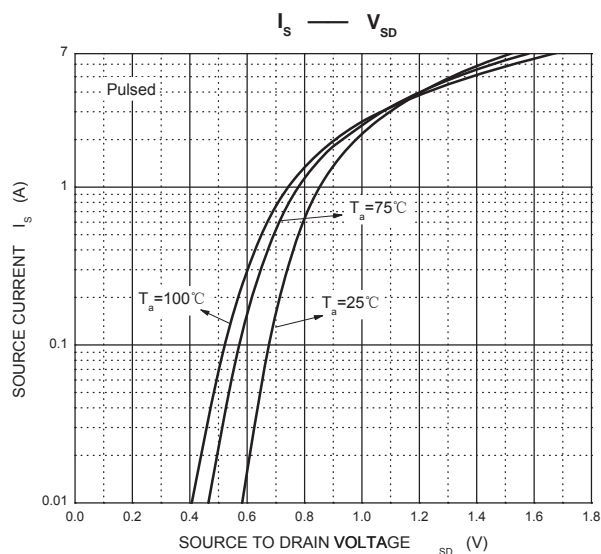
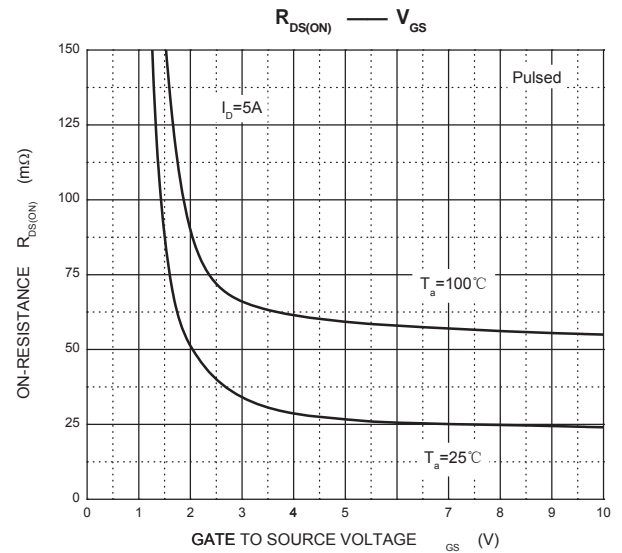
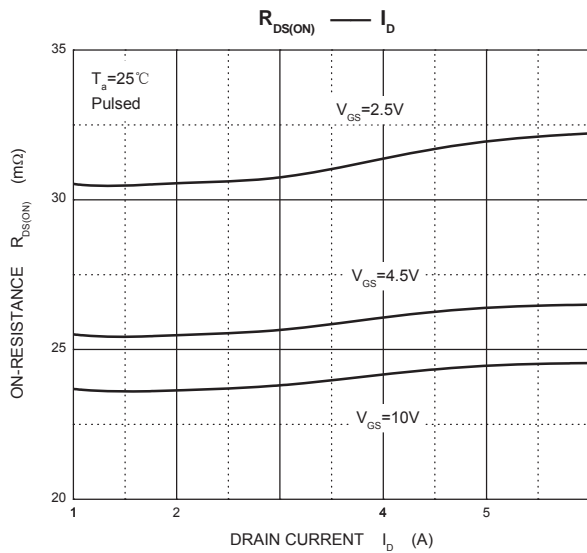
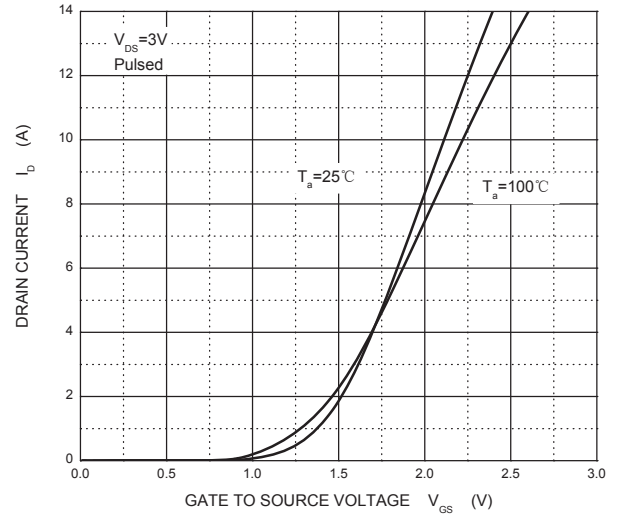
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t < 5$  sec.
3. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

### TYPICAL TRANSIENT CHARACTERISTICS

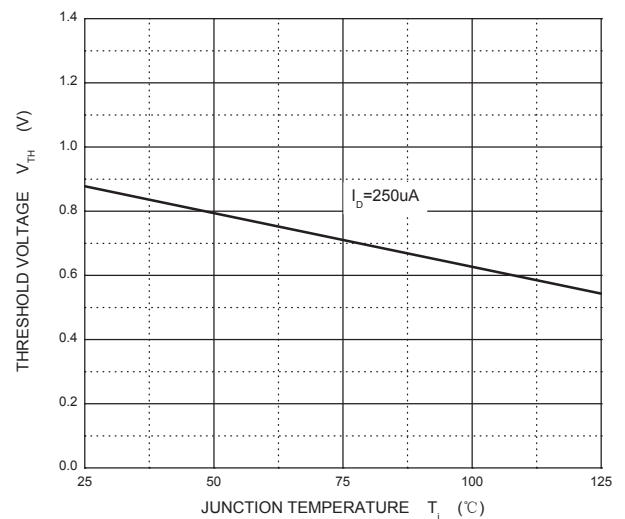
Output Characteristics



Transfer Characteristics



Threshold Voltage



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### IMPORTANT NOTICE

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