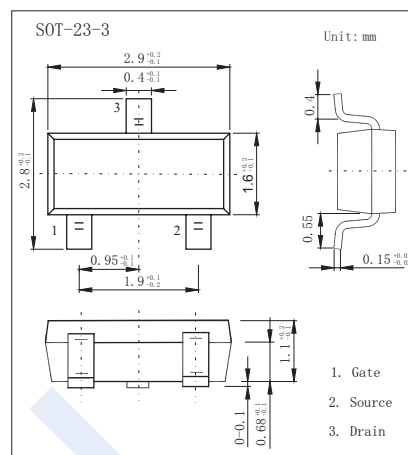
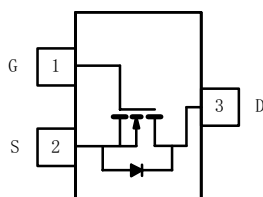


N-Channel MOSFET

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■ Features

- $V_{DS} (V) = 18V$
- $I_D = 6.0 A$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 22m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 27m\Omega$ ($V_{GS} = 2.5V$)
- $R_{DS(ON)} < 34m\Omega$ ($V_{GS} = 1.8V$)



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter		Symbol	5 sec	Steady State	Unit
Drain-Source Voltage		V _{DS}	18		V
Gate-Source Voltage		V _{GS}	±8		
Continuous Drain Current T _J =150℃*1	Ta=25℃	I _D	6.0	4.67	A
	Ta=70℃		4.8	3.7	
Pulsed Drain Current *2		I _{DM}	18		
Avalanche Current *2	L=0.1mH	I _{AS}	18		
Single Avalanche Energy		E _{AS}	11.25		mJ
Power Dissipation *1	Ta=25℃	P _D	1.25	0.75	W
	Ta=70℃		0.8	0.48	
Thermal Resistance.Junction- to-Ambient *1 t≤5 sec Steady State		R _{thJA}	100		℃/W
			166		
Thermal Resistance.Junction-to-Foot		R _{thJF}	50		℃
Junction Temperature		T _J	150		
Storage Temperature Range		T _{stg}	-55 to 150		

*1 Surface Mounted on 1" x 1" FR4 Board.

*2 Pulse width limited by maximum junction temperature

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\mu A$, $V_{GS}=0V$	18			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=18V$, $V_{GS}=0V$			1	μA
		$V_{DS}=18V$, $V_{GS}=0V$, $T_a=70^\circ C$			75	
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 8V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	0.45		0.85	V
On-State Drain Current *1	$I_{D(on)}$	$V_{DS} \geq 10V$, $V_{GS} = 4.5V$	15			A
Static Drain-Source On-Resistance *1	$R_{DS(on)}$	$V_{GS}=4.5V$, $I_D=5.0A$			22	m Ω
		$V_{GS}=2.5V$, $I_D=4.5A$			27	
		$V_{GS}=1.8V$, $I_D=4.0A$			34	
Forward Transconductance *1	g_{FS}	$V_{DS}=15V$, $I_D=5.0A$		40		S
Total Gate Charge	Q_g	$V_{GS}=4.5V$, $V_{DS}=10V$, $I_D=5.0A$		11.2	14	nC
Gate Source Charge	Q_{gs}			1.4		
Gate Drain Charge	Q_{gd}			2.2		
Turn-On DelayTime	$t_{d(on)}$	$I_D=1.0A$, $V_{DS}=10V$, $V_{GEN}=4.5V$ $R_L=10\Omega$, $R_G=6\Omega$		15	25	ns
Turn-On Rise Time	t_r			40	60	
Turn-Off DelayTime	$t_{d(off)}$			48	70	
Turn-Off Fall Time	t_f			31	45	
Body Diode Reverse Recovery Time	t_{rr}	$I_F=1.0A$, $dI/dt=100A/\mu s$		13	25	
Maximum Body-Diode Continuous Current	I_S				1.0	A
Diode Forward Voltage	V_{SD}	$I_S=1.0A$, $V_{GS}=0V$			1.2	V

*1 Pulse test: $PW \leq 300\mu s$ duty cycle $\leq 2\%$.

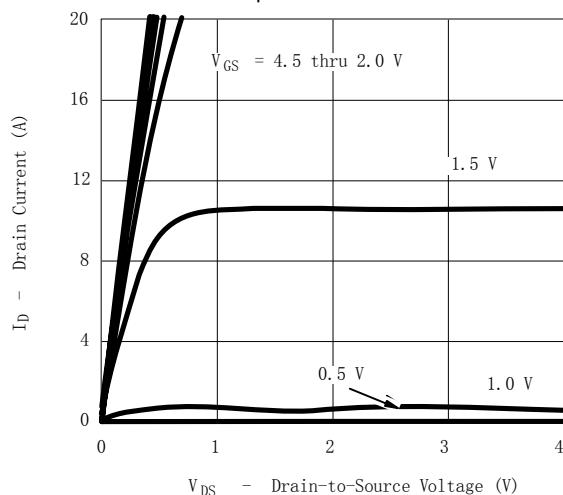
■ Marking

Marking	<u>AE9T</u>
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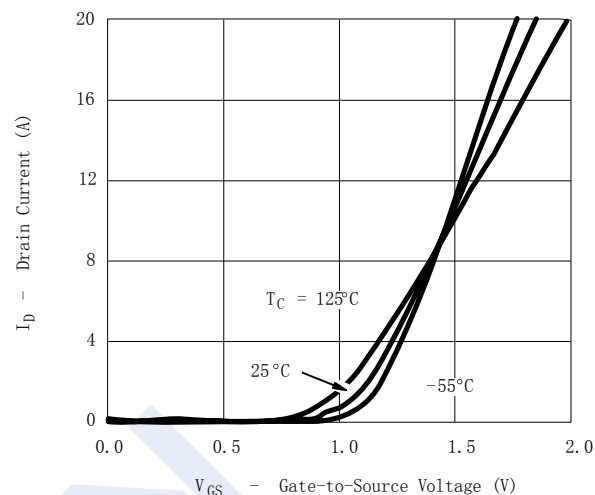
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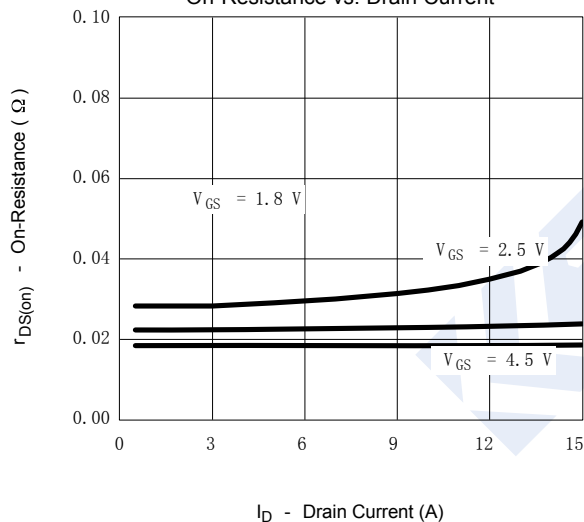
■ Typical Characteristics
Output Characteristics



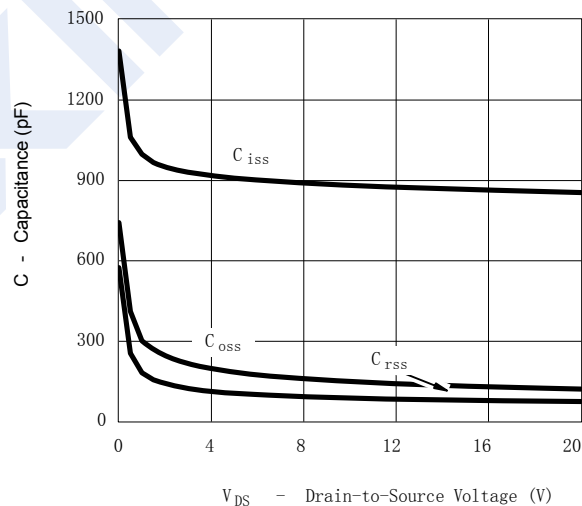
Transfer Characteristics



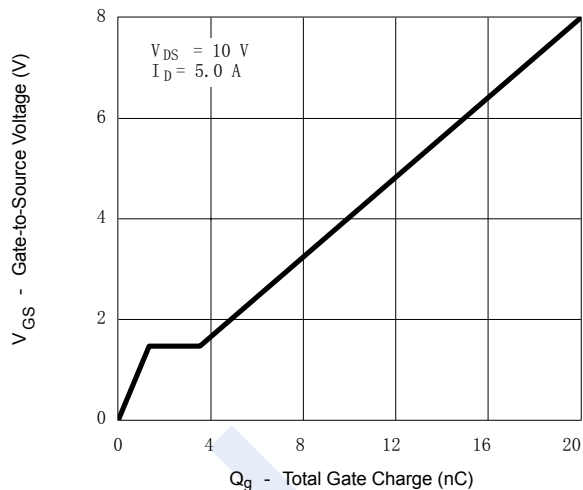
On-Resistance vs. Drain Current



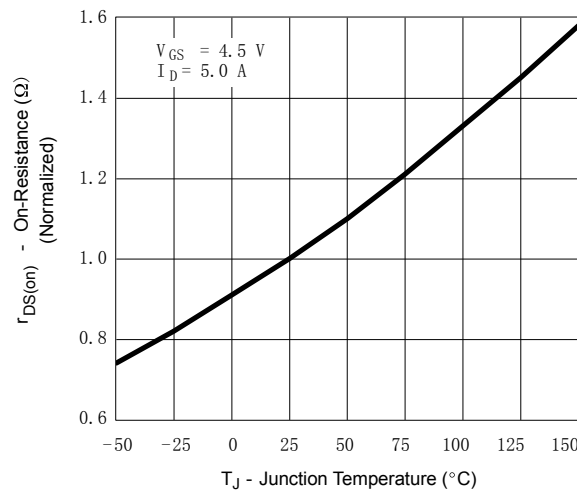
Capacitance



Gate Charge



On-Resistance vs. Junction Temperature



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■ Typical Characteristics

