

N-Channel Enhancement Mode MOSFET

Feature

30V/5.8, $R_{DS(ON)} = 50m\Omega(MAX)$ @ $V_{GS} = 10V$.

$R_{DS(ON)} = 60m\Omega(MAX)$ @ $V_{GS} = 4.5V$.

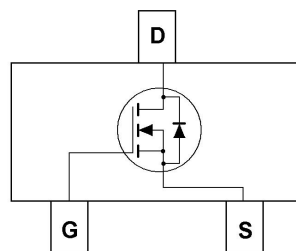
Super High dense cell design for extremely low $R_{DS(ON)}$.

Reliable and Rugged.

SOT-23 for Surface Mount Package.



SOT-23-3



MARKING:A09T

Applications

- Power Management
- Portable Equipment and Battery Powered Systems.

Absolute Maximum Ratings

$T_A = 25^\circ C$ Unless Otherwise noted

Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	5.8	A

Electrical Characteristics

$T_A = 25^\circ C$ Unless Otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ.	Max	Units
Off Characteristics						
Drain to Source Breakdown Voltage	BVDSS	VGS=0V, ID=250μA	30	-	-	V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0V	-	-	1	μA
Gate Body Leakage Current, Forward	IGSSF	VGS=12V, VDS=0V	-	-	100	nA
Gate Body Leakage Current, Reverse	IGSSR	VGS=-12V, VDS=0V	-	-	-100	nA
On Characteristics						
Gate Threshold Voltage	VGS(th)	VGS= VDS, ID=250μA	0.6	-	1.5	V
Static Drain-source On-Resistance	RDS(ON)	VGS =10V, ID =4A	-	48	50	mΩ
		VGS =4.5V, ID =3A	-	55	60	mΩ
		VGS =2.5V, ID =2A	-	60	65	mΩ
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	VSD	VGS =0V, IS=1.25A			1.2	V

Dynamic						
Q_g	Total Gate Charge	$V_{DS}=15V, V_{GS}=10V, I_D=2A$		8.5	12	nC
Q_{gs}	Gate-Source Charge			1.1		
Q_{gd}	Gate-Drain Charge			1.8		
t_{on}	Turn-on Time	$V_{DD}=15V, I_D=2A, V_{GS}=10V, R_G=6\Omega$			40	ns
$t_{d(ON)}$	Turn-on Delay time			11		
t_r	Turn-on Rise Time			17		
$T_{d(off)}$	Turn-off Delay Time			37		
t_f	Turn-off Fall Time			20		
t_{off}	Turn-off Time				60	

Typical Characteristics

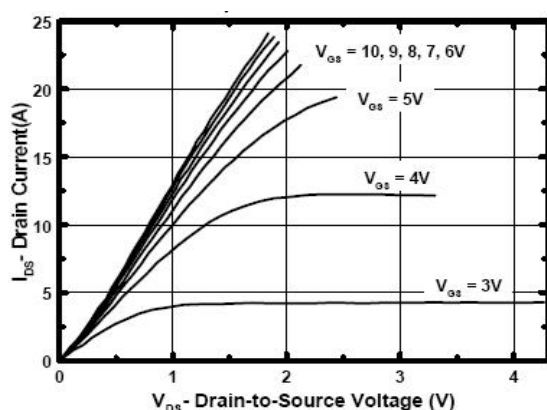


Figure 1 . Output Characteristics

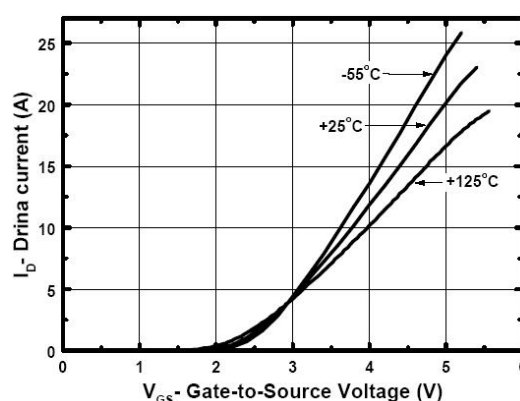


Figure 2 . Transfer Characteristics

Typical Characteristics

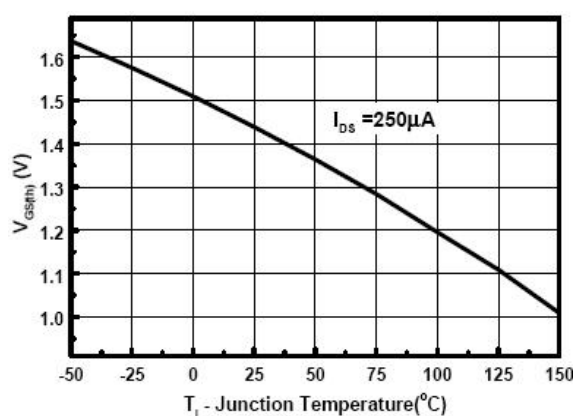


Figure 3 . Gate Threshold Variation with Temperature

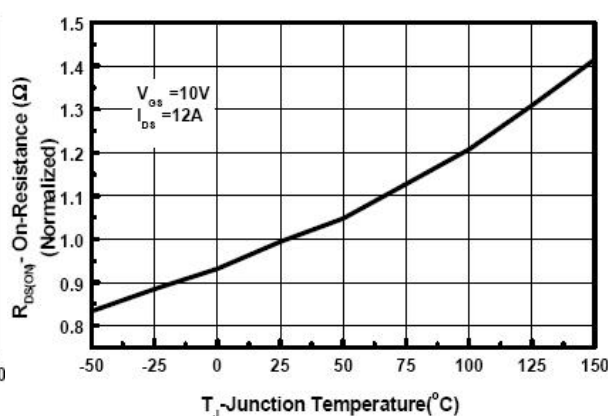


Figure 4 . On-Resistance Variation with Temperature

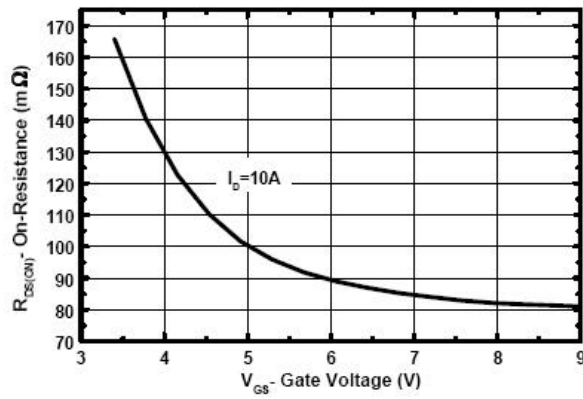


Figure 5 . On-Resistance vs. Gate-to-Source Voltage

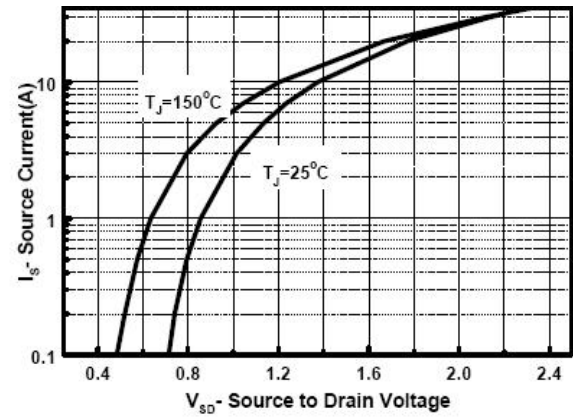
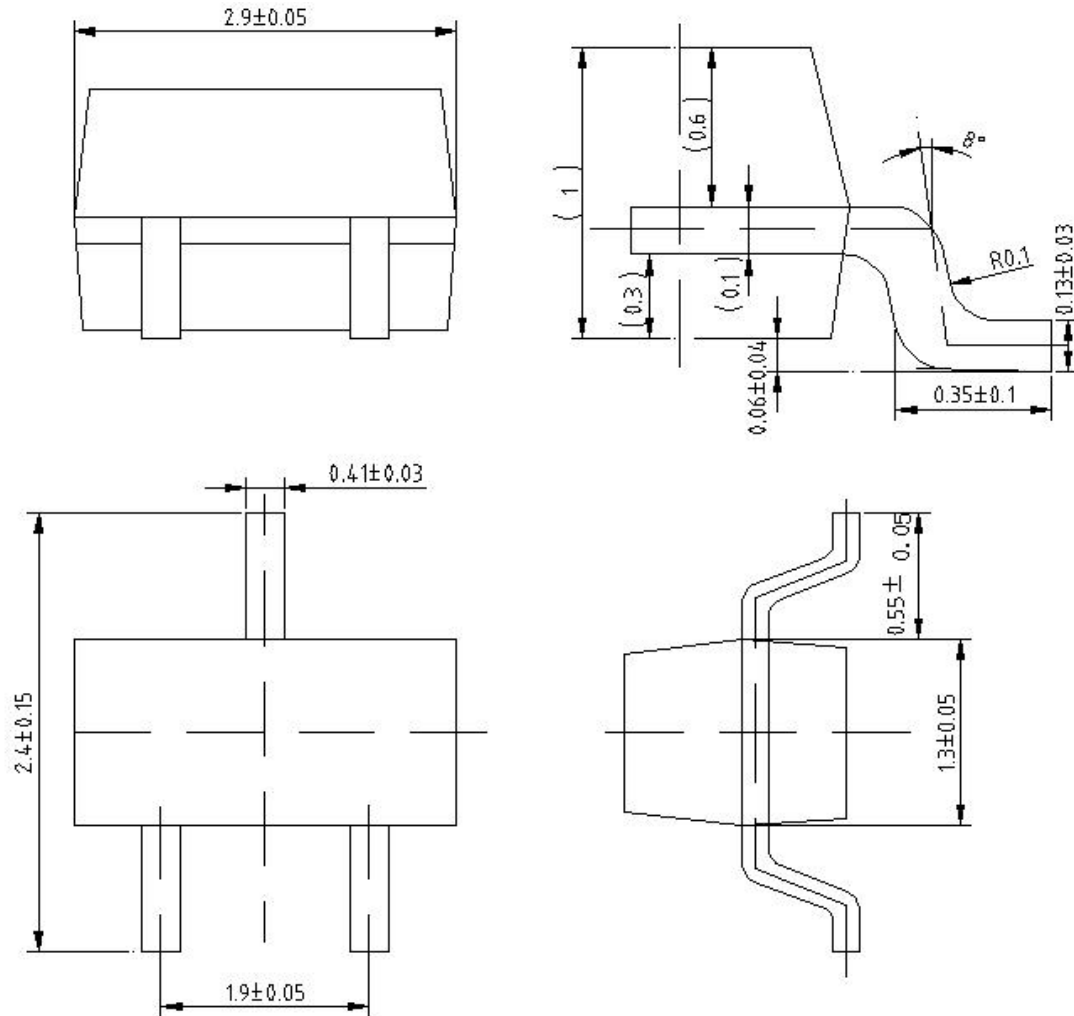


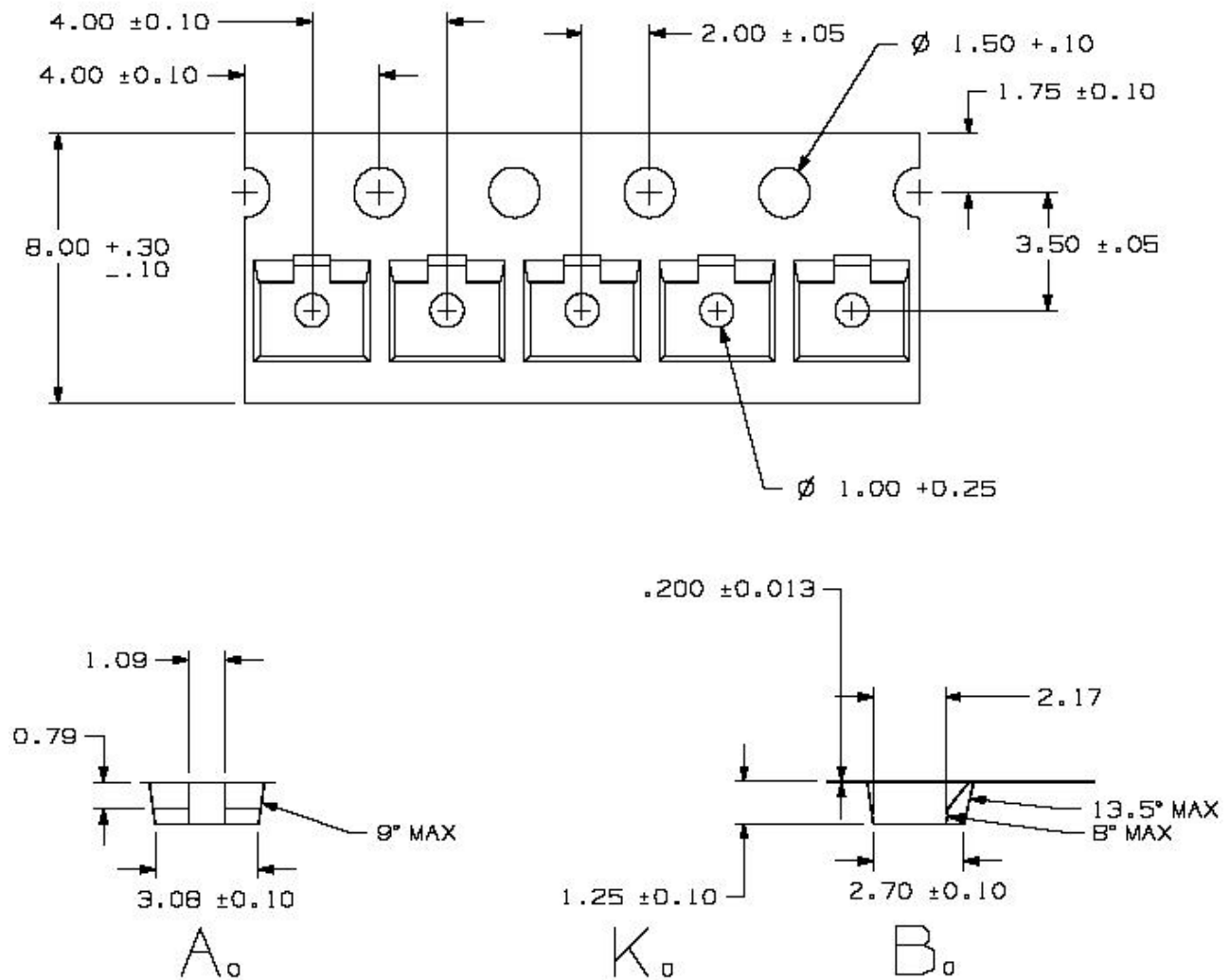
Figure 6 . Source-Drain Diode Forward Voltage

Package Outline Dimensions (UNIT: mm)

SOT-23



SOT-23 Carrier Tape





RoHS
COMPLIANT



Pb
Pb-Free

SOT-23 Carrier Reel

