



SOT-23 Plastic-Encapsulate MOSFETS

N-Channel 20-V(D-S) MOSFET

APPLICATIONS

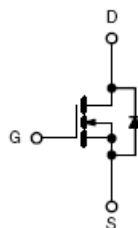
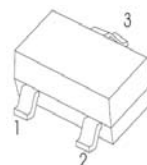
- DC/DC Converters
- Load Switching for Portable Applications
- **Pb-Free package is available**

RoHS product for packing code suffix "G"

Halogen free product for packing code suffix "H"

SOT-23

1. GATE
2. SOURCE
3. DRAIN



MARKING: S12 or 2300

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}	± 8.0	
Continuous Drain Current $t=5s$	I_D	5	A
Pulsed Drain Current	I_{DM}	20	
Continuous Source-Drain Diode Current	I_S	1.04	
Maximum Power Dissipation $t=5s$	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-50 ~+150	

**SOT-23 Plastic-Encapsulate MOSFETS****Electrical characteristics (T_a=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA	20			V
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1.0	μA
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45		1.0	V
Drain-source on-state resistance ^a	R _{DS(on)}	V _{GS} =4.5V, I _D =5.0A			0.0318	Ω
		V _{GS} =2.5V, I _D =4.7A			0.0356	
		V _{GS} =1.8V, I _D =4.3A			0.0414	
Forward tranconductance ^a	g _{fS}	V _{DS} =10V, I _D =5.0A	6			S
Dynamic ^b						
Input capacitance	C _{iSS}	V _{DS} =10V,V _{GS} =0V,f =1MHz		865		pF
Output capacitance	C _{oSS}			105		
Reverse transfer capacitance	C _{rSS}			55		
Gate resistance	R _g	f =1MHz	0.5		4.8	Ω
Turn-on delay Time	t _{d(on)}	V _{GEN} =5V,V _{DD} =10V, I _D =4A,R _G =1Ω, R _L =2.2Ω			10	ns
Rise time	t _r				20	
Turn-off Delay time	t _{d(off)}				32	
Fall yime	t _f				12	
Drain-source body diode characteristics						
Forward diode voltage	V _{SD}	V _{GS} =0V,I _S =4A		0.75	1.2	V

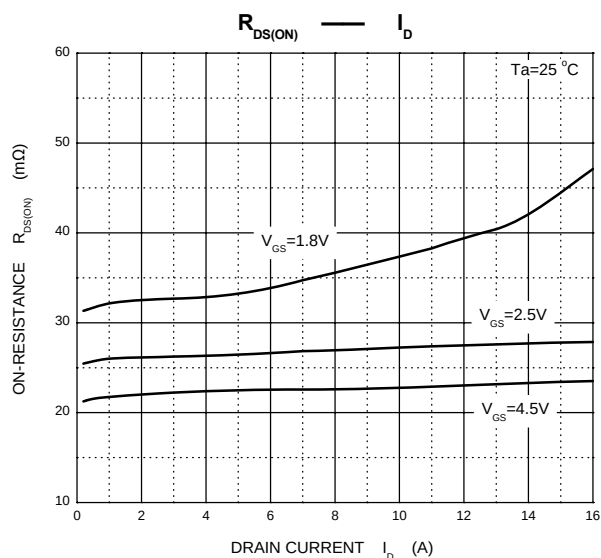
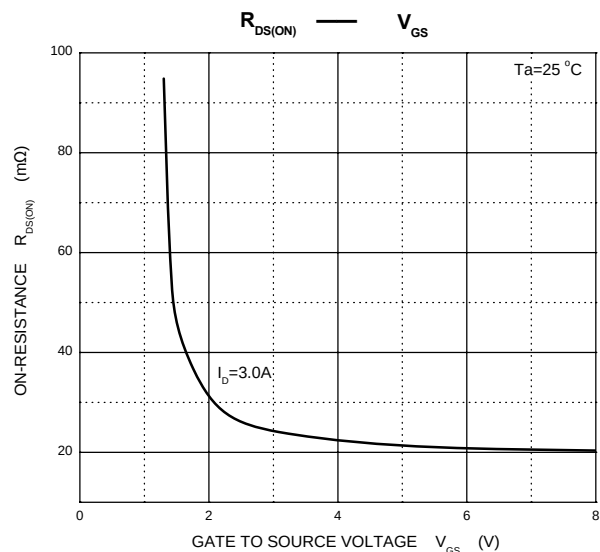
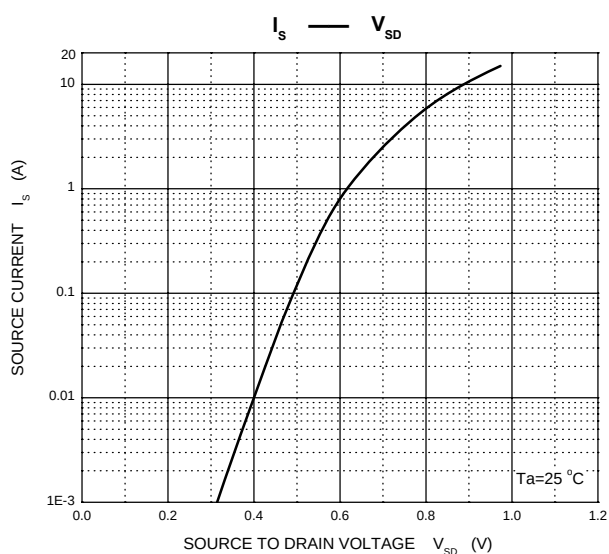
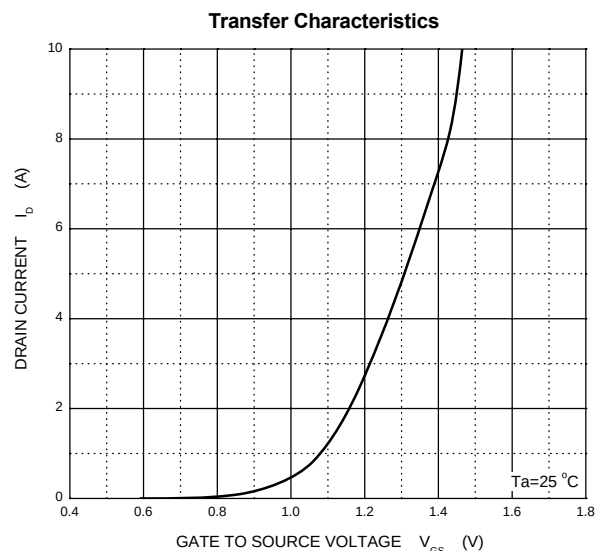
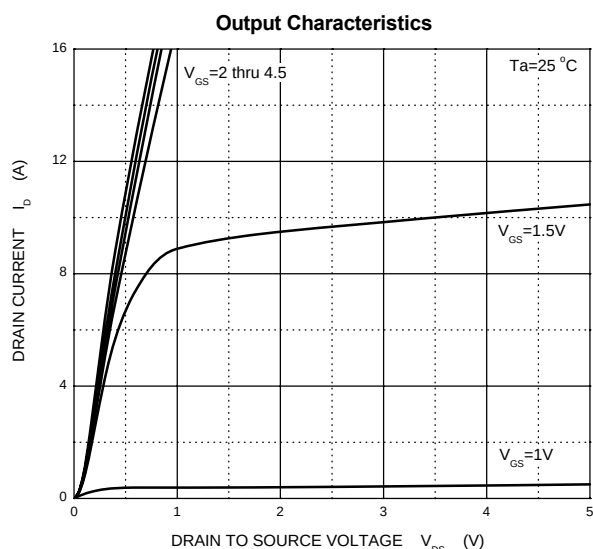
Notes :

- a. Pulse Test : pulse width ≤ 300μs, duty cycle ≤ 2%.
- b. These parameters have no way to verify.



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Typical Characteristics

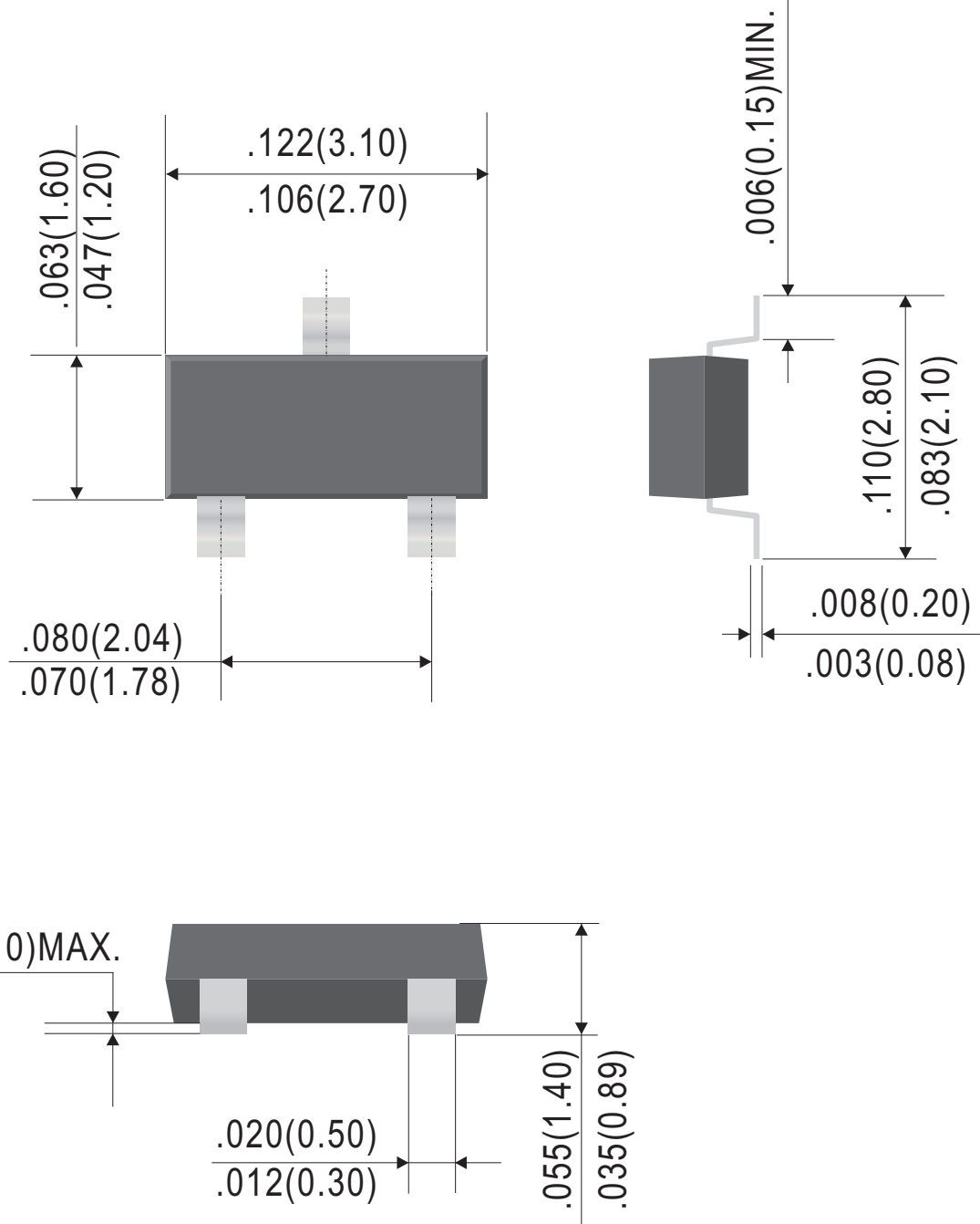




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Outline Drawing

SOT-23



Dimensions in inches and (millimeters)

Rev.D



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Ordering Information:

Device PN	Packing
SE2312-T ⁽¹⁾ G ⁽²⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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