



SOT-23 Plastic-Encapsulate MOSFETS

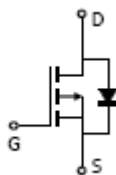
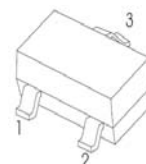
P-Channel 20-V(D-S) MOSFET

APPLICATIONS

- PA Switch
- Load Switch
- **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: S21

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}	± 12	
Continuous Drain Current	I_D	-2.9	A
Pulsed Drain Current	I_{DM}	-12	
Continuous Source-Drain Diode Current	I_S	-0.59	
Maximum Power Dissipation	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	



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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 =-10μA	-20			V
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Zero Gate voltage drain current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1.0	μA
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4		-0.9	V
Drain-source on-state resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-3.3A			0.057	Ω
		V _{GS} =-2.5V, I _D =-2.8A			0.076	
		V _{GS} =-1.8V, I _D =-2.3A			0.110	
Forward tranconductance	g _{fS}	V _{DS} =-5V, I _D =-3.3A	3			S
Forward diode voltage	V _{SD}	V _{GS} =0V,I _S =-1.6A			-1.2	V
Dynamic						
Input capacitance ^{a,b}	C _{iSS}	V _{DS} =-6V,V _{GS} =0V,f =1MHz		715		pF
Output capacitance ^{a,b}	C _{oSS}			170		
Reverse transfer capacitance ^{a,b}	C _{rSS}			120		
Total Gate charge ^a	Q _g	V _{DS} =-6V,V _{GS} =-4.5V,I _D =-3.3A			13	nc
Gate-Source charge ^a	Q _{gs}			1.2		nc
Gate-Drain charge ^a	Q _{gd}			2.2		nc
Switching ^{a,b}						
Turn-on delay Time	t _{d(on)}	V _{GEN} =-4.5V,V _{DD} =-6V, I _D =-1.0A,R _G =6Ω, R _L =6Ω			25	ns
Rise time	t _r				55	
Turn-off delay time	t _{d(off)}				90	
Fall time	t _f				60	

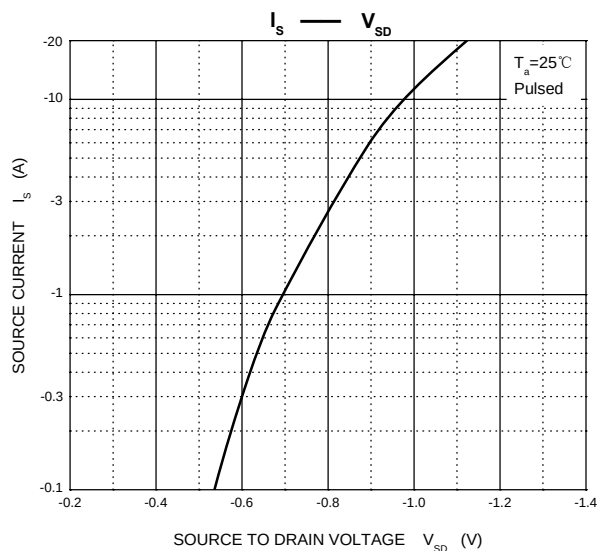
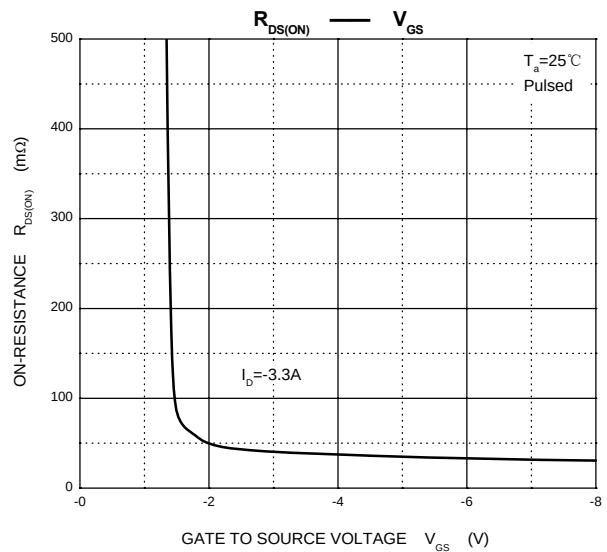
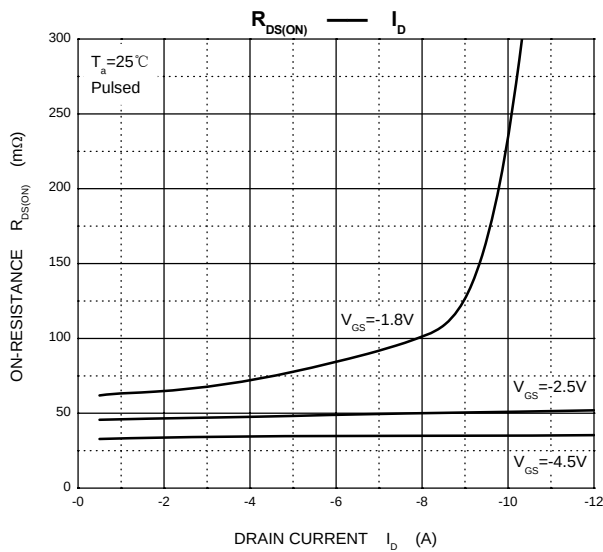
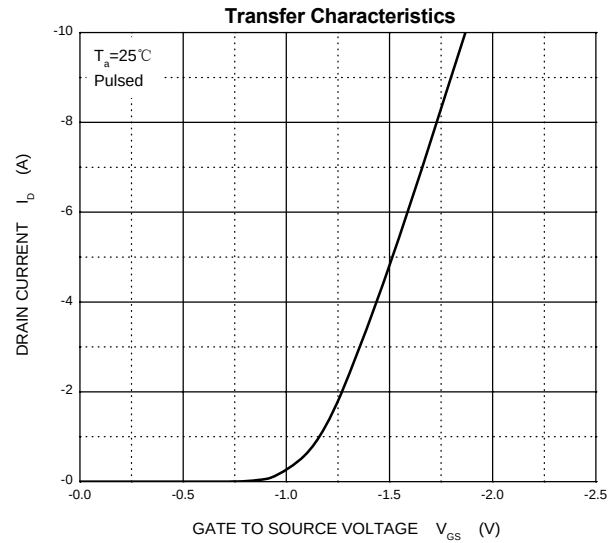
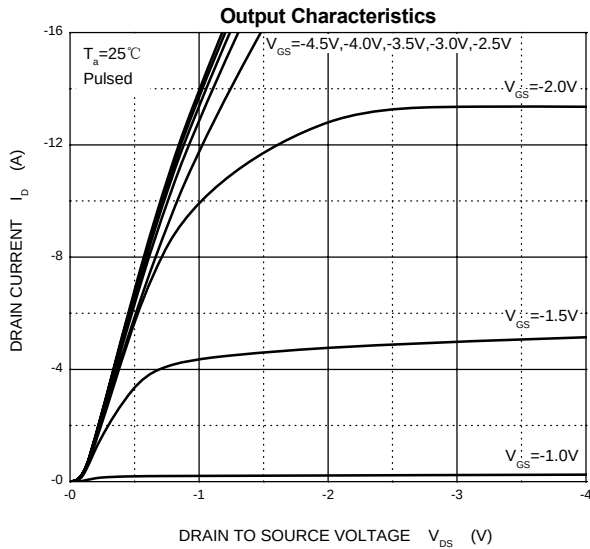
Notes :

a. Pulse Test : pulse width ≤300μs, duty cycle ≤2%.



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Typical Characteristics





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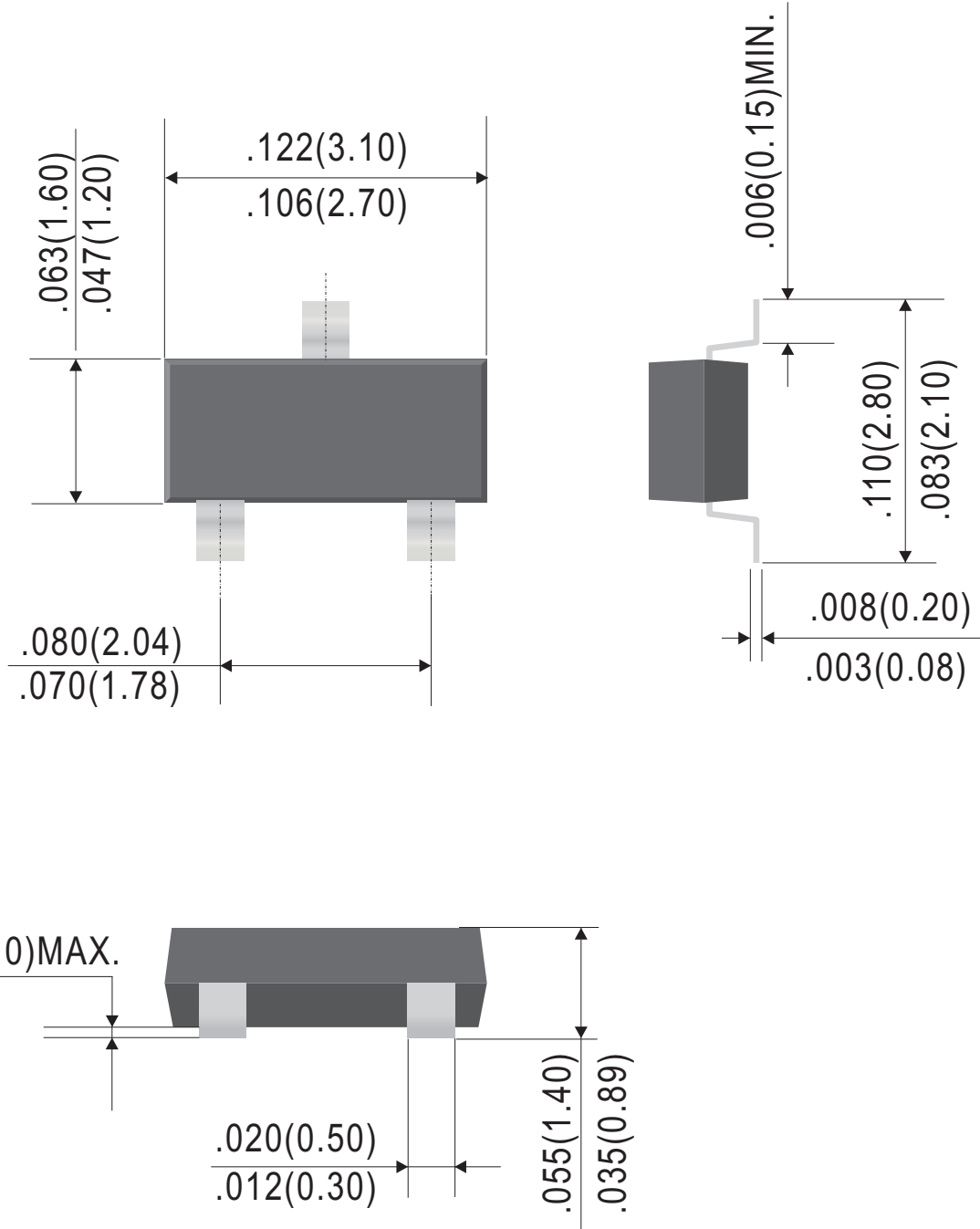


SE2321

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Outline Drawing

SOT-23



Dimensions in inches and (millimeters)

Rev.D



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Ordering Information:

Device PN	Packing
SE2321-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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