WILLAS

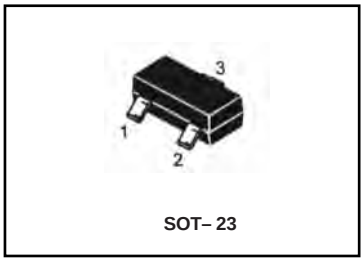
RoHS COMPLIANT

SMG2301B

20V P-Channel Enhancement-Mode MOSFET

FEATURES

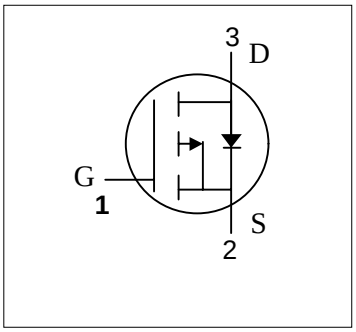
- $R_{DS(ON)}$ ≦110mΩ@V_{GS}=-4.5V
- $R_{DS(ON)}$ ≦150mΩ@V_{GS}=-2.5V
- Super high density cell design for extremely low $R_{DS(ON)}$



SOT– 23

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Load Switch
- DSC



Ordering Information

Device	Marking	Shipping
SMG2301B	01B	3000/Tape& Reel

Parameter		Symbol	Limit		Unit
Drain-Source Voltage		V_{DSS}	-20		V
Gate-Source Voltage		V_{GSS}	±8		V
Continuous Drain Current (Tj=150℃)*	T_A=25℃	I_D	-2.0		A
	T_A=70℃		-1.6		
Pulsed Drain Current		I_{DM}	-10		A
Maximum Power Dissipation	T_A=25℃	P_D	0.7		W
	T_A=70℃		0.45		
Operating Junction Temperature		T_J	-55 to 150		℃
Storage Temperature Range		T_{stg}	-55 to 150		℃
Thermal Resistance-Junction to Ambient*		$R_{\theta JA}$	Typical	Maximum	℃/W
			100	175	

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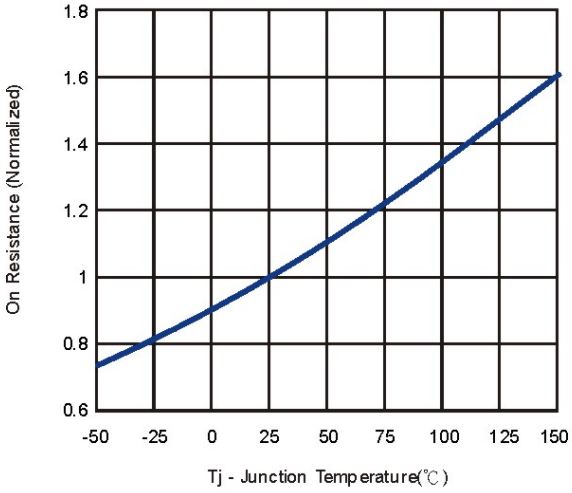
ELECTRICAL CHARACTERISTICS

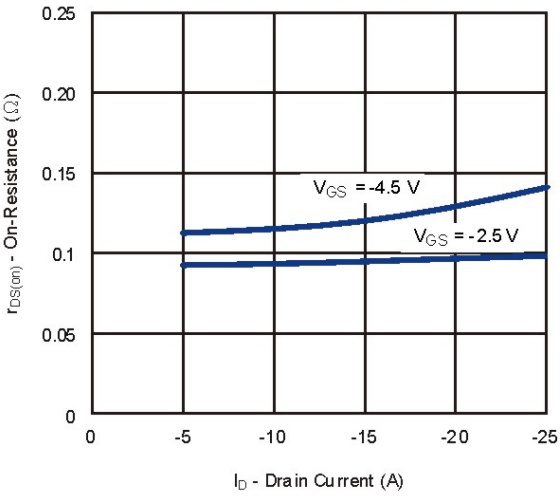
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250μA	-20			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250μA	-0.4	-0.6	-1	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±8V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-20V, V_{GS}=0V			-1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance [a]	V_{GS}=-4.5V, I_D= -2.8A		90	110	mΩ
		V_{GS}=-2.5V, I_D= -2.0A		110	150	
V_{SD}	Diode Forward Voltage	I_S=-1A, V_{GS}=0V		-0.7	-1.4	V
DYNAMIC						
Qg	Total Gate Charge	V_{DS}=-6V, V_{GS}=-4.5V, I_D=-2.8A		7.2		nC
Qgs	Gate-Source Charge			2.2		
Qgd	Gate-Drain Charge			1.2		
Rg	Gate resistance	V_{DS}=0V, V_{GS}=0V, f=1MHz		7.5		Ω
Ciss	Input Capacitance	V_{DS}=-15V, V_{GS}=0V, f=1MHz		480		pF
Coss	Output Capacitance			46		
Crss	Reverse Transfer Capacitance			10		
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=-6V, R_L=6Ω R_{GEN}=6Ω, V_{GS}=-4.5V		50		ns
t_r	Turn-On Rise Time			30		
$t_{d(off)}$	Turn-Off Delay Time			40		
t_f	Turn-Off Fall time			11		

20V P-Channel Enhancement-Mode MOSFET

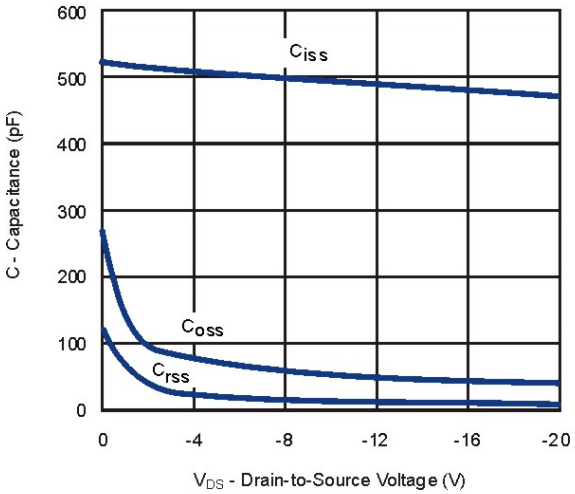
On Resistance vs. Junction Temperature



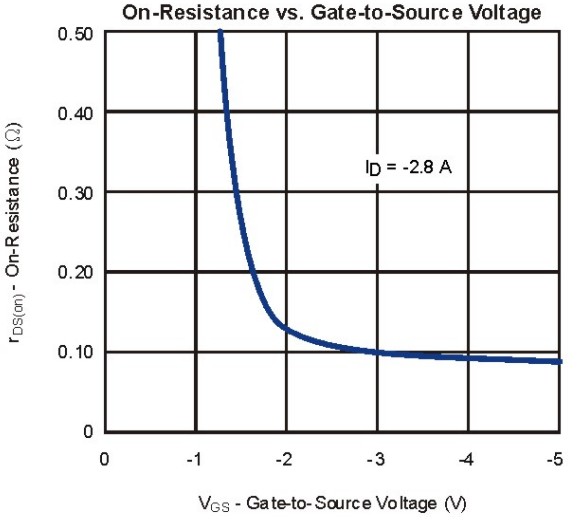
On-Resistance vs. Drain Current



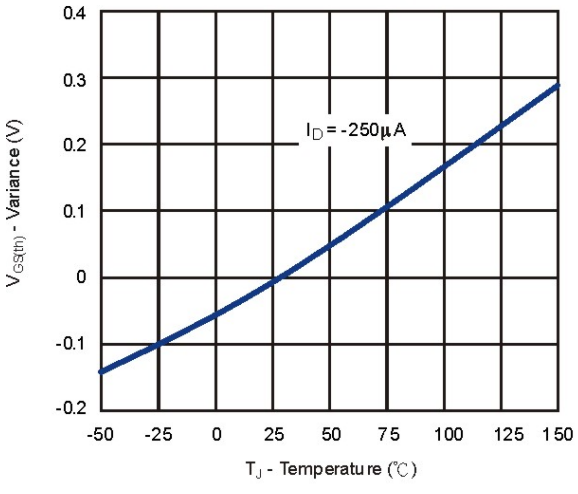
Capacitance



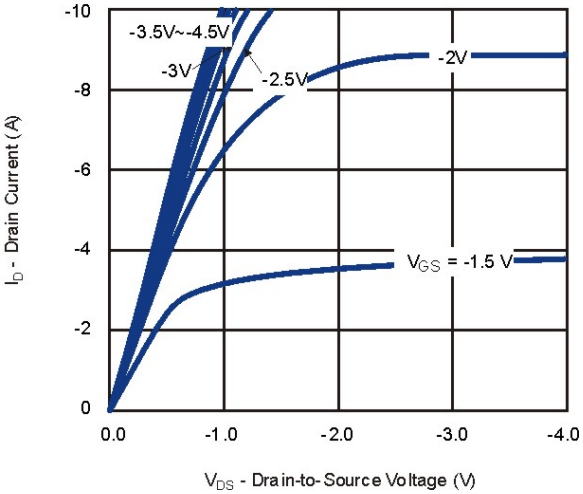
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



On-Region Characteristics



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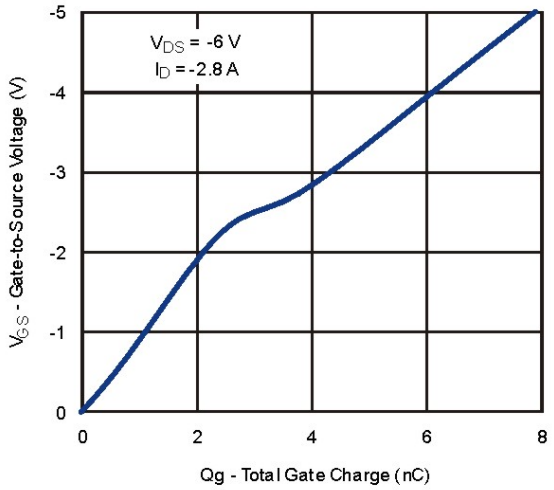
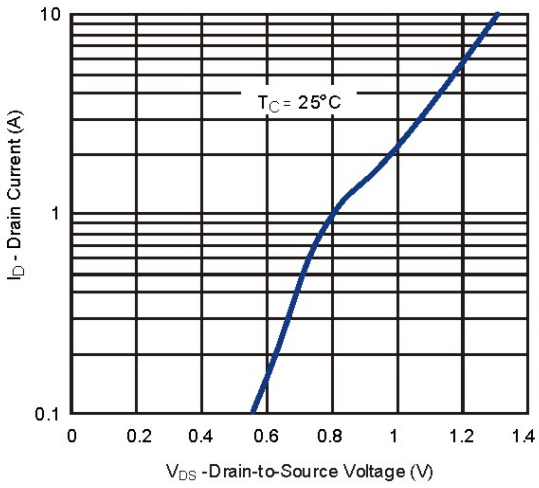
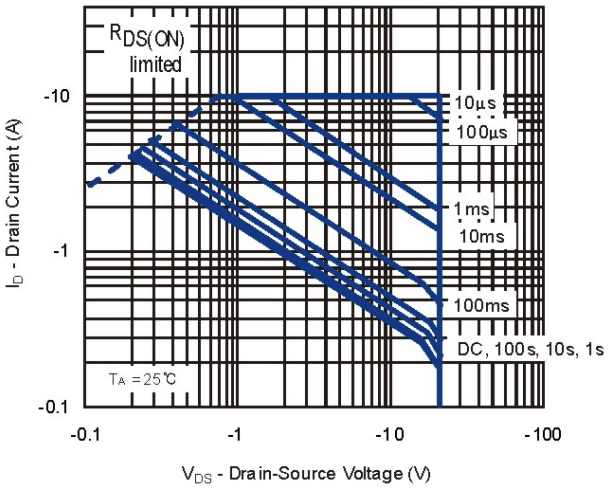
Gate Charge



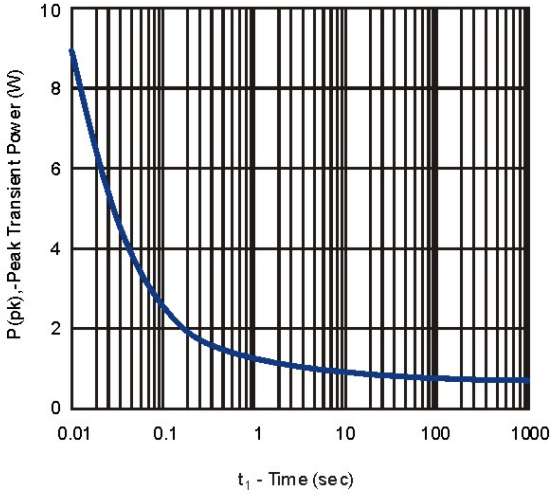
On-Resistance vs. Drain Current



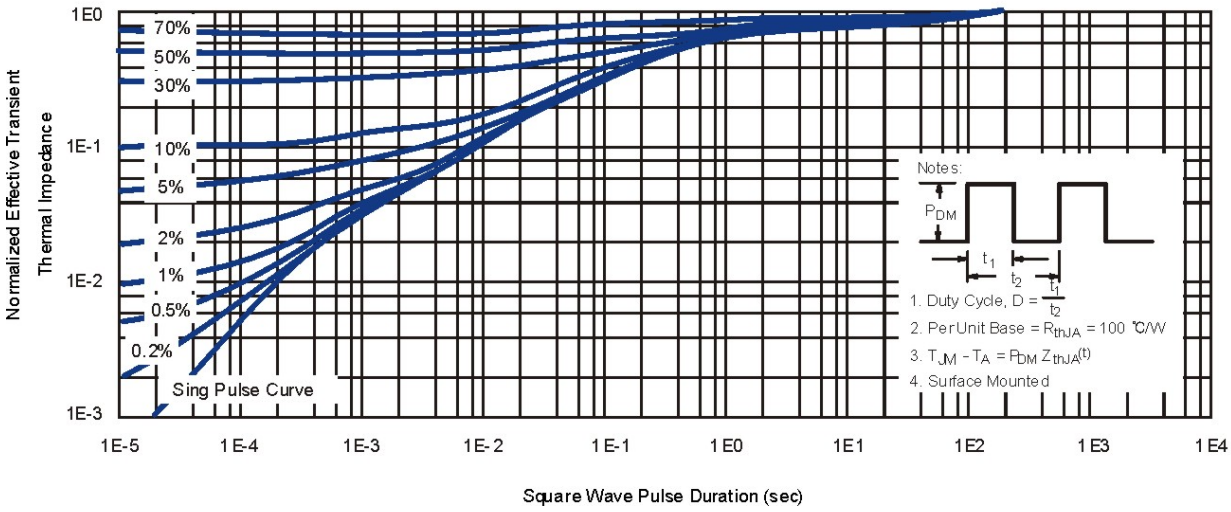
Maximum Forward Biased Safe Operating Area



Single Pulse Maximum Power Dissipation



Normalized Thermal Transient Impedance, Junction-to-Ambient



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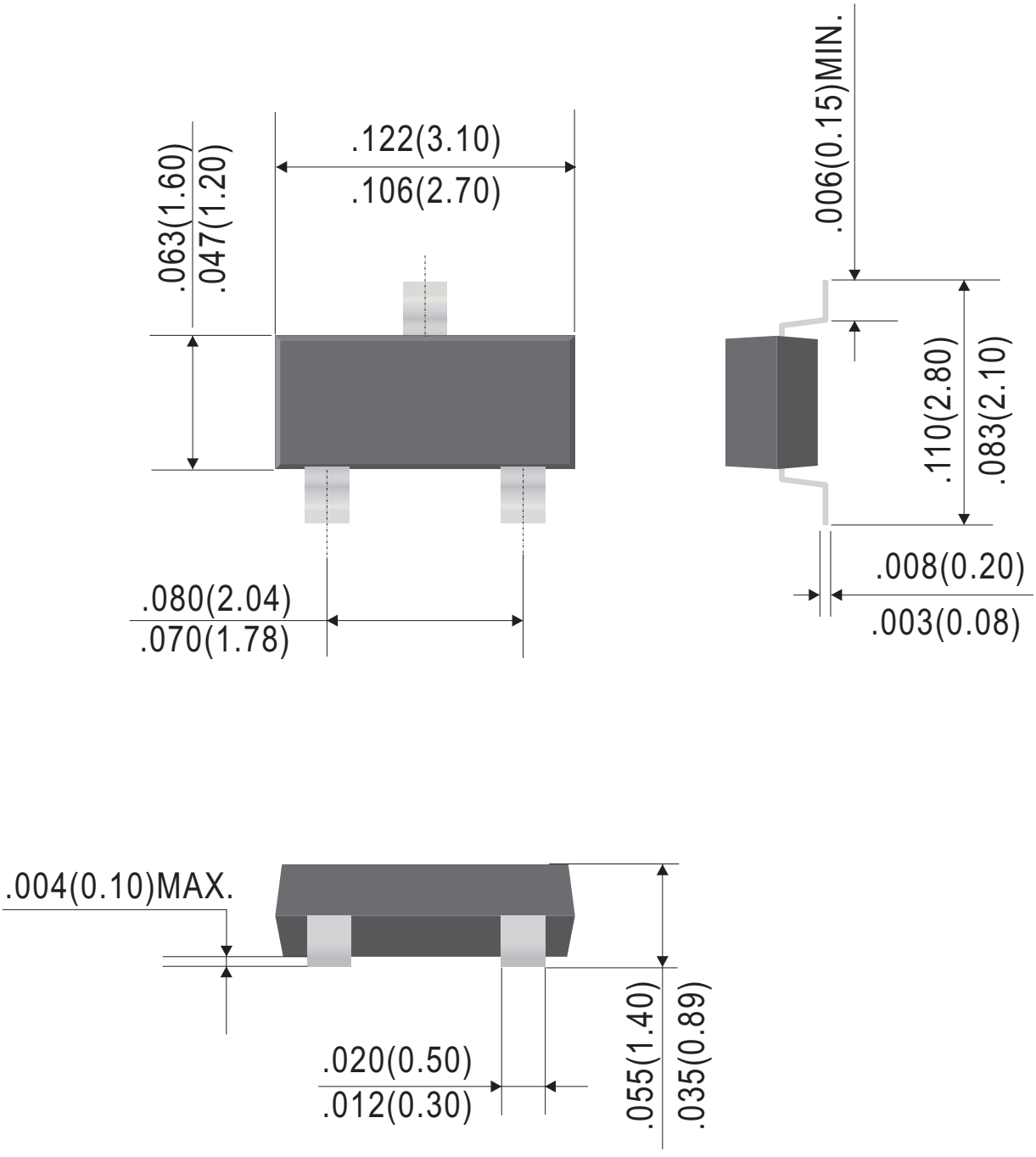
Outline Drawing

SOT-23



Dimensions in inches and (millimeters)

Rev.D

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SMG2301B

Ordering Information:

Device PN	Packing
SMG2301 . -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”

*****Disclaimer*****

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