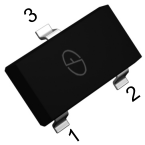
P-Channel -20V (D-S) Power MOSFET

Features

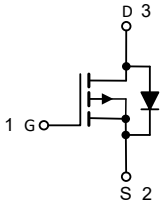
- 100% Avalanche Tested
- RoHS Compliant, Halogen Free, Pb-Free
- Fast switching and reverse body recovery
- Ultra low on-resistance with low gate charge



SOT-23

Applications

- Load Switch
- PWM Application
- Power Management



Absolute Maximum Ratings (T_A=25°C unless otherwise noted)				
Parameter		**Symbol**	**Value**	**Unit**
Drain Source Voltage		V_{DS}	-20	V
Gate Source Voltage		V_{GS}	±12	V
Drain Current, Continuous V_{GS}=-10V	T_C=25°C	I_D	-4	A
Drain Current, Pulsed *(Note 1)*		I_{DM}	-20	A
Power Dissipation	T_C=25°C	P_D	1.6	W
Operating Junction/ Storage Temperature Range		T_J/ T_{STG}	-55 to +150	°C

Note 1: Single pulse; t_p ≤ 1us.

Thermal Characteristics			
Parameter	**Symbol**	**Max**	**Unit**
Thermal Resistance Junction to Case	R_{thJC}	78	°C/W

Electrical Characteristics (T_A =25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V	--	--	-1	uA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_{DS}=-250uA	-0.5	--	-1	V
Gate Leakage Current	I_{GSS}	V_{GS}=±12V, V_{DS}=0V	--	--	±100	nA
Drain-Source On-state Resistance *(Note 2)*	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-4A	--	39	65	mΩ
		V_{GS}=-2.5V, I_D=-3A	--	55	80	
Total Gate Charge	Q_g	$V_{GS(off)}$=0V, $V_{GS(on)}$=-4.5V, V_{DD}=-10V, I_D=-4A	--	9.6	--	nC
Gate-Source Charge	Q_{gs}		--	1.5	--	
Gate-Drain Charge	Q_{gd}		--	2.4	--	
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=-4.5V, V_{DD}=-10V, R_G=6Ω, I_D=-1A	--	27	--	ns
Turn-on Rise Time	t_r		--	60	--	
Turn-off Delay Time	$t_{d(off)}$		--	30	--	
Turn-off Fall Time	t_f		--	10	--	
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-10V, f=1MHz	--	640	--	pF
Output Capacitance	C_{oss}		--	180	--	
Reverse Transfer Capacitance	C_{rss}		--	100	--	

Reverse Diode Characteristics (T_A =25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Forward Current, Continuous	I_{SD}	T_C=25°C	--	--	-4	A
Diode Forward Voltage *(Note 2)*	V_{SD}	I_F=-1A, V_{GS}=0V	--	--	-1.2	V

Note 2: Pulse test; pulse width ≤ 380μs, duty cycle ≤ 1%.

Typical Characteristics Curves (TA = 25℃ unless otherwise noted)

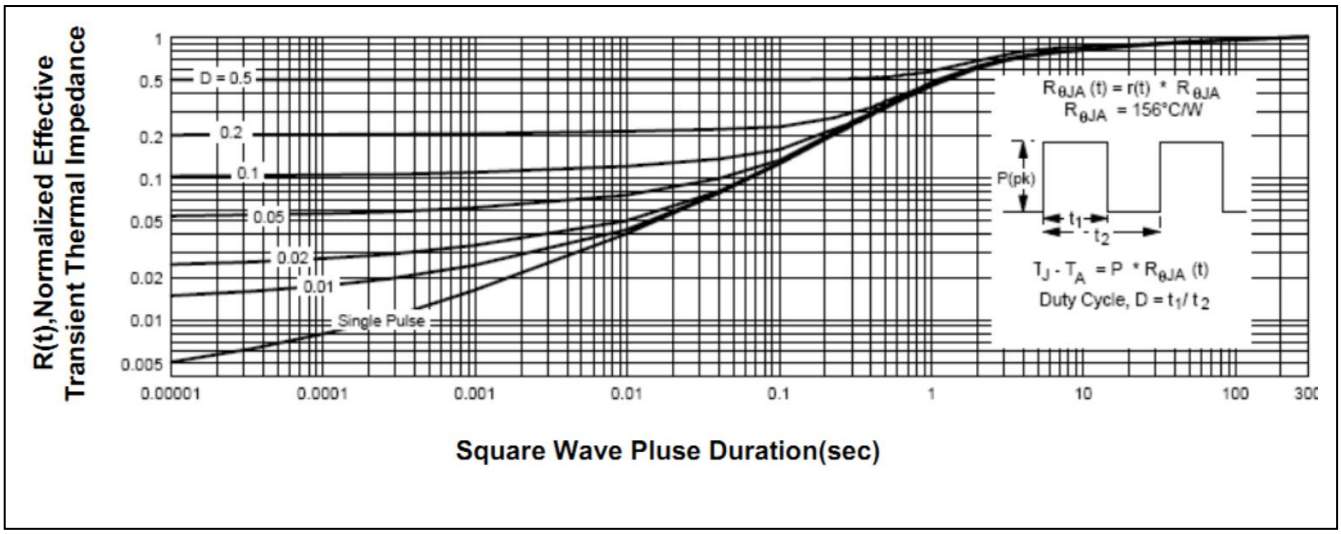
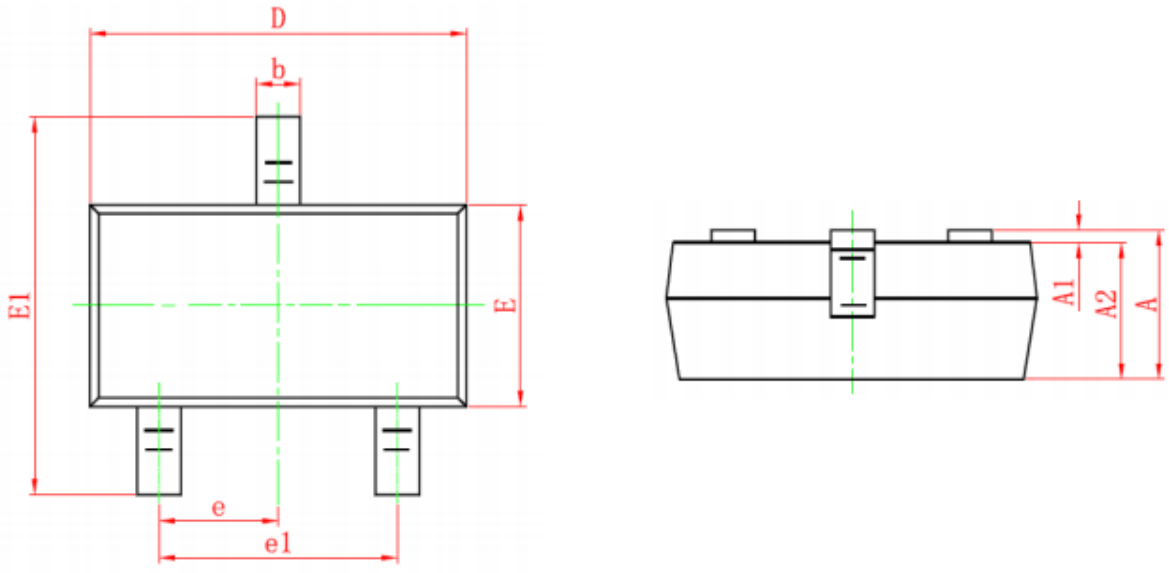
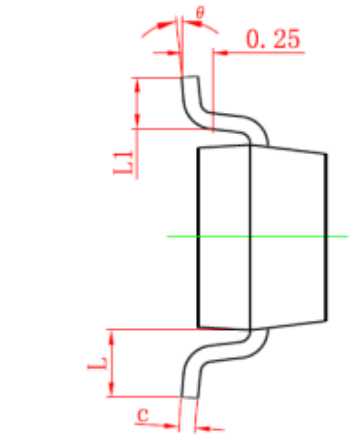


Figure1. Normalized Maximum Transient Thermal Impedance

Package Outline Dimensions (Unit: millimeters)

SOT-23



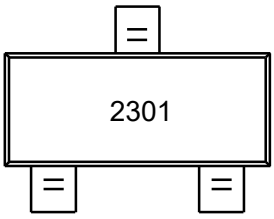


Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

NOTES

1. All dimensions are in millimeters.
2. Tolerance ±0.10mm (4 mil) unless otherwise specified
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.
4. Dimension L is measured in gauge plane.
5. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.

Marking Outline



Part Name: SSF2301A

1. P/N Mark: 2301

Revision History

Version	Date	Major Changes
Rev.A	2026.04.09	Official Release

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