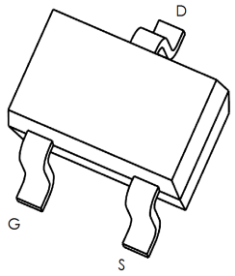
GP2101A

20V P-Channel MOSFET

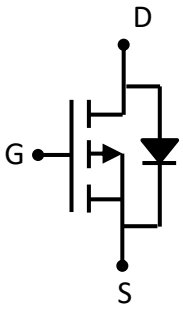
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	50mΩ@-4.5V	-1.4A
	70mΩ@-2.5V	
	115mΩ@-1.8V	

SOT-323



Schematic diagram



Feature

- Leading Trench Technology for Low $R_{DS(on)}$
- Extending Battery Life

Application

- High Side Load Switch
- Charging Circuit
- Single Cell Battery Applications

MARKING:

ABSOLUTE MAXIMUM RATINGS (T_a = 25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8.0	V
Continuous Drain Current[1,2]	I_D	-1.4	A
Pulsed Drain Current	I_{DM}	-5.6	A
Power Dissipation	P_D	0.57	W
Thermal Resistance from Junction to Ambient[1,2]	$R_{\theta JA}$	220	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a = 25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -16V, V_{GS} = 0V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS} = ±8V, V_{DS} = 0V			±100	nA
On Characteristics[3]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-0.4	-0.7	-1.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =- 4.5V, I_D = -1.0A		50	75	mΩ
		V_{GS} = -2.5V, I_D = -0.5A		70	105	
		V_{GS} = -1.8V, I_D = -0.3A		115	156	
Forward Tranconductance	g_{FS}	V_{DS} = -5V, I_D = -1.4A	8			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = -10V, V_{GS} = 0V, f = 1MHz		350		pF
Output Capacitance	C_{oss}			75		
Reverse Transfer Capacitance	C_{rss}			67		
Switchig Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{GS} = -4.5V, V_{DD} = -10V,I_D = -1.4A, R_G =3Ω		7.0		ns
Turn-On Rise Time	t_r			32		
Turn-Off Delay Time	$t_{d(off)}$			49		
Turn-Off Fall Time	t_f			55		
Total Gate Charge	Q_g	V_{DS} = -10V, V_{GS} = -4.5V, I_D = -1.4A		8.2		nC
Gate-Source Charge	Q_{gs}			1.1		
Gate-Drain Charge	Q_{gd}			2.0		
Diode Characteristics						
Diode Forward voltage[3]	V_{DS}	V_{GS} = 0V, I_S = -0.3A			-1.2	V

Notes :

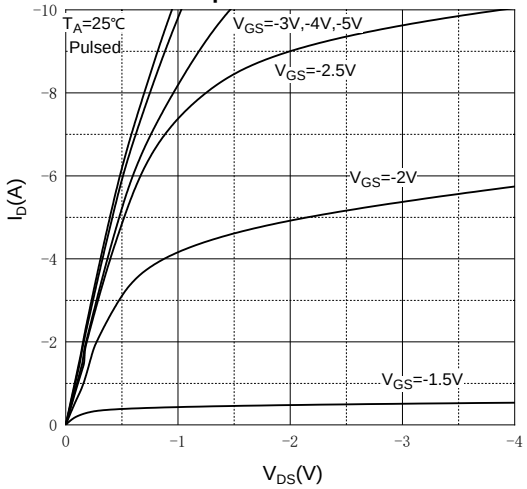
1.$R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR4 board with 1oz. single side copper, in a still air environment with T_A = 25°C.

2.$R_{\theta JA}$ is measured in the steady state

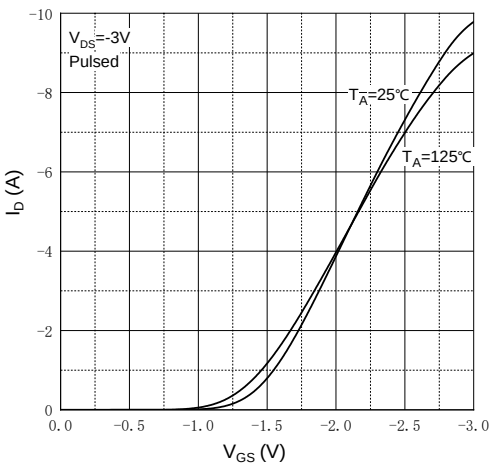
3.Pulse test : Pulse width ≤ 380μs, duty cycle ≤ 2%.

Typical Characteristics

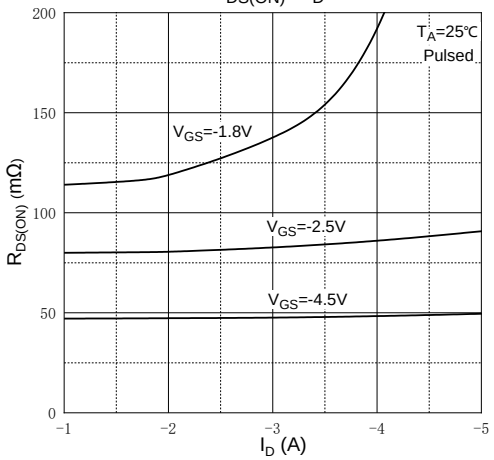
Output Characteristics



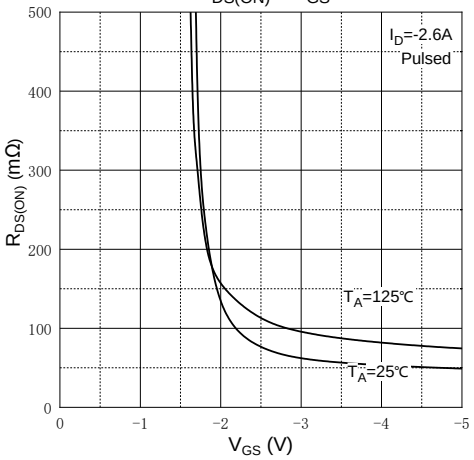
Transfer Characteristics



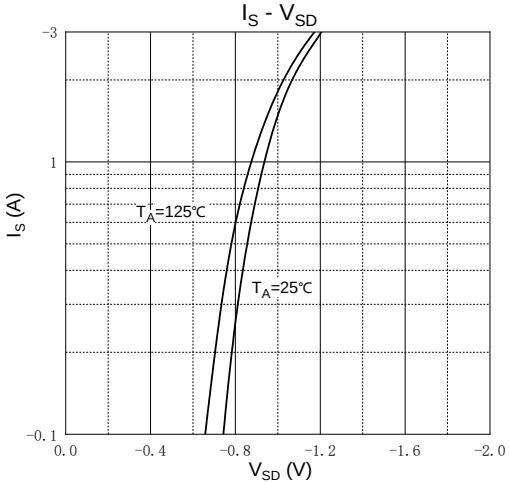
$R_{DS(ON)}$ - I_D



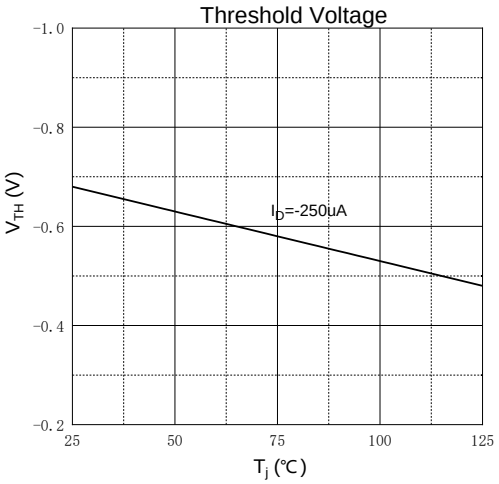
$R_{DS(ON)}$ - V_{GS}



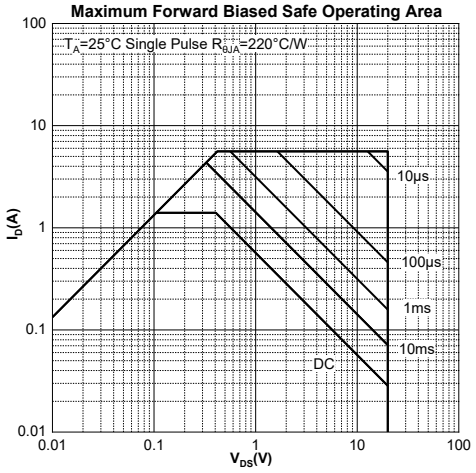
I_S - V_{SD}



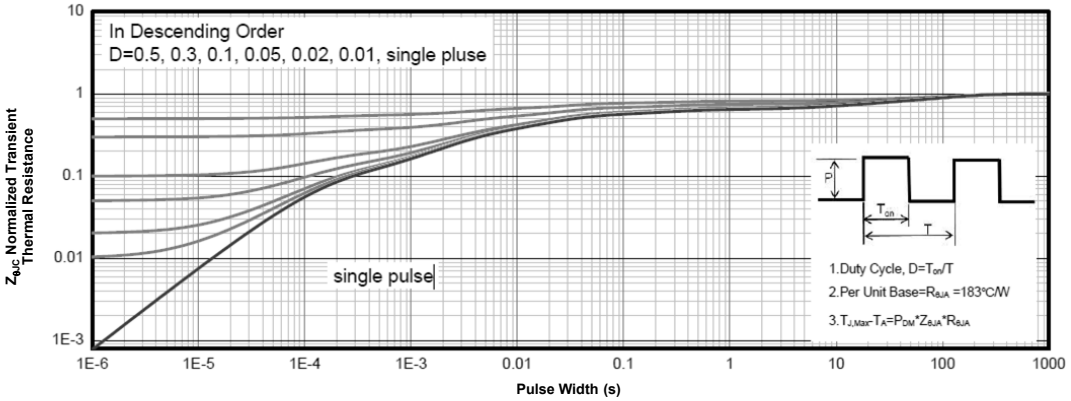
Threshold Voltage



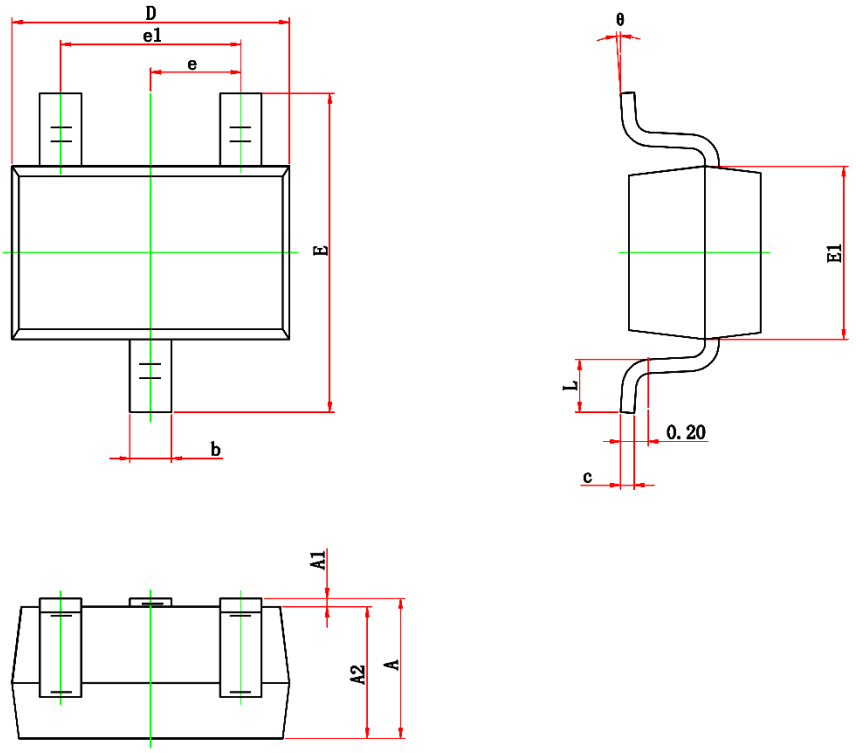
Maximum Forward Biased Safe Operating Area



Normalized Maximum Transient Thermal Impedance



SOT-323 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.800	1.100	0.031	0.043
A1	0.000	0.100	0.000	0.004
A2	0.800	1.100	0.031	0.043
b	0.200	0.400	0.008	0.016
c	0.050	0.150	0.002	0.006
D	1.900	2.200	0.075	0.087
E	2.000	2.450	0.079	0.096
E1	1.150	1.350	0.045	0.053
e	0.650TYP.		0.026TYP.	
e1	1.200	1.400	0.047	0.055
L	0.200	0.460	0.008	0.018
θ	0°	8°	0°	8°

Attention：

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