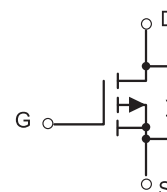




MT2101 P-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-20V	100 mΩ @ -4.5V	-1.4A
	140mΩ @ -2.5V	
	210 mΩ @ -1.8V	

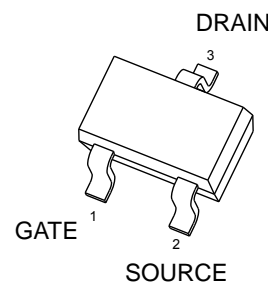


FEATURE

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

APPLICATION

- High Side Load Switch
- Charging Circuit
- Single Cell Battery Applications such as
Cell Phones, Digital Cameras ,PDAs, etc



SOT-323

MARKING TS1

Maximum ratings ($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	- 20	V
Gate-Source Voltage	V_{GS}	± 8.0	
Continuous Drain Current	I_D	-1.4	A
Pulsed Drain Current ($t_p=10\mu s$)	I_{DM}	-3.0	
Power Dissipation	P_D	0.29	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	431	$^{\circ}C/W$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 ~+150	$^{\circ}C$



MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

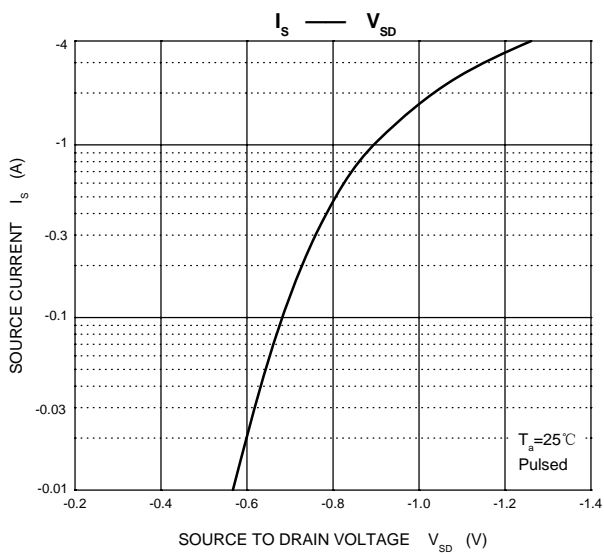
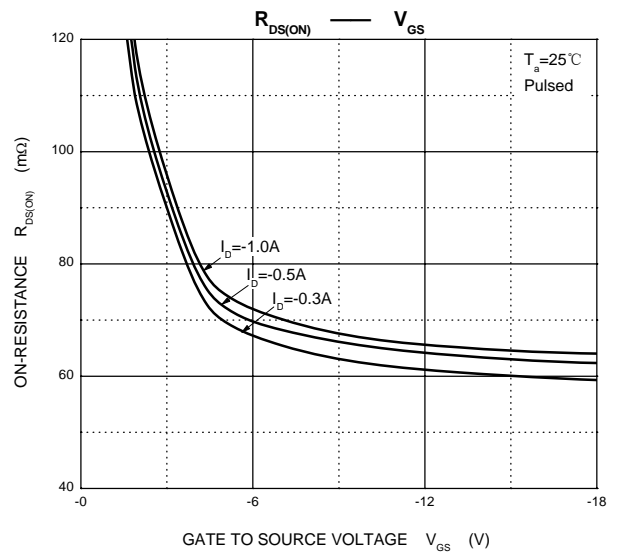
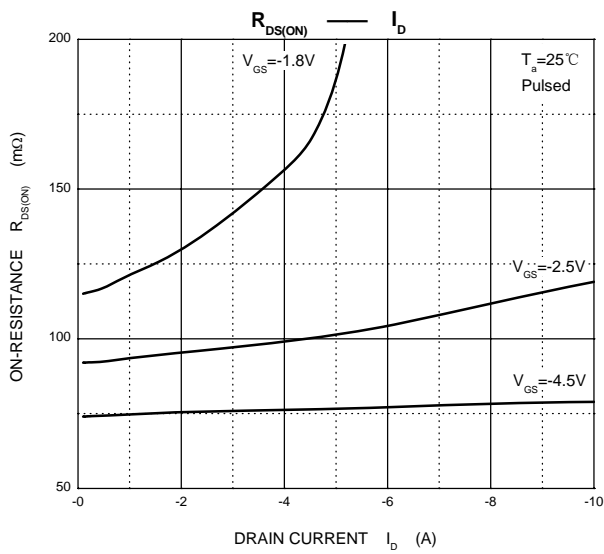
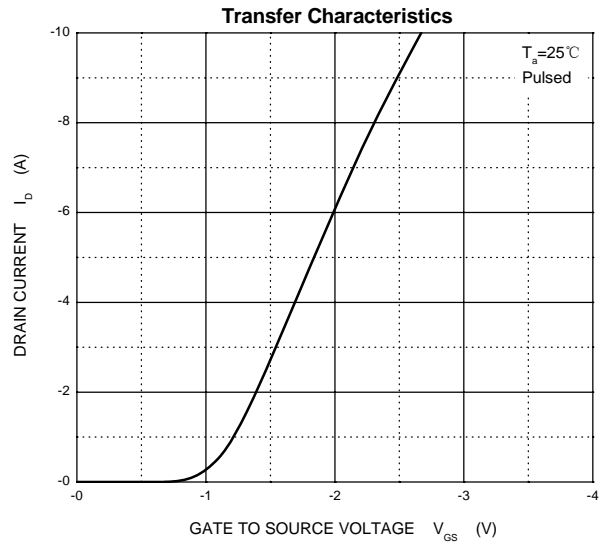
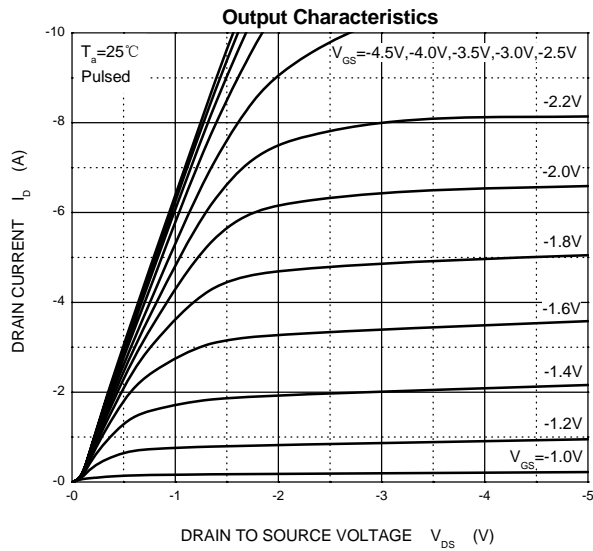
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
OFF CHARACTERISSTICS						
Drain-Source Breakdown Voltage	V_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-Source Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			-1.0	μA
OFF CHARACTERISSTICS (note 1)						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.45	-0.7		V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -1.0A$		82	100	m Ω
		$V_{GS} = -2.5V, I_D = -0.5A$		102	140	
		$V_{GS} = -1.8V, I_D = -0.3A$		143	210	
CHARGES AND CAPACITANCES (note 3)						
Input Capacitance	C_{iss}	$V_{DS} = -8.0V, V_{GS} = 0V, f = 1MHz$		640		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			82		
SWITCHING CHARACTERISSTICS (note 2,3)						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = -4.5V, V_{DD} = -4.0V, I_D = -1.0A, R_G = 6.2\Omega$		6.2		ns
Rise Time	t_r			15		
Turn-Off Delay Time	$t_{d(off)}$			26		
Fall Time	t_f			18		
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -3.0A$		5.5	10	nC
				3.3	6	
Gate-Source Charge	Q_{gs}	$V_{DS} = -10V, V_{GS} = -2.5V, I_D = -3.0A$		0.7		
Gate-Drain Charge	Q_{gd}			1.3		
Drain-source Body diode characteristics						
Forward Diode Voltage	V_{SD}	$V_{GS} = 0V, I_S = -0.3A$		-0.62	-1.2	V

Notes :

1. Pulse Test : pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Switching characteristics are independent of operating junction temperatures.
3. These parameters have no way to verify.

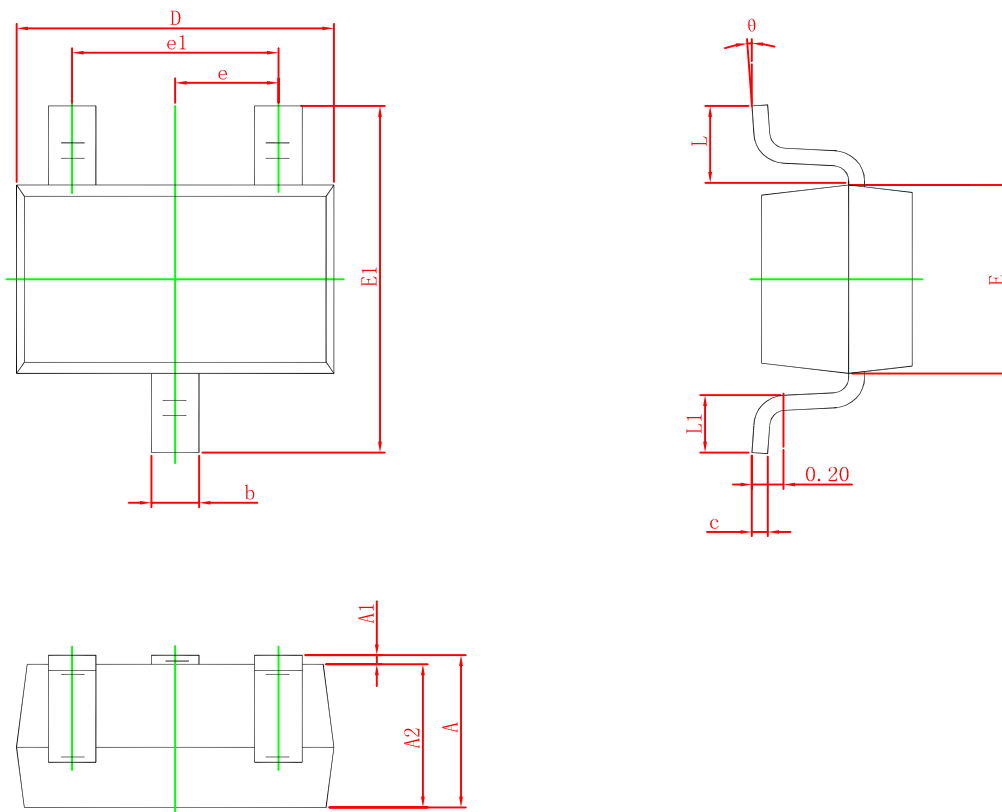


Typical Characteristics





SOT-323 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°