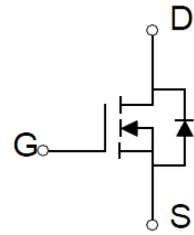


N Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100V	6Ω@10V	0.17A
	10Ω@4.5V	



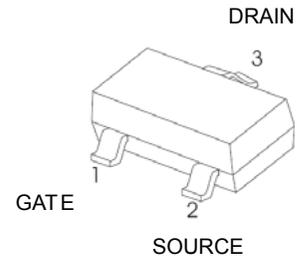
FEATURE

- Surface Mount Package
- High Density Cell Design for Extremely Low $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- Rugged and Reliable

APPLICATION

- Small Servo Motor Controls
- Power MOSFET Gate Drivers
- Switching Application

MARKING : SA



SOT-323

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
N-MOSFET			
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (note 1)	I_D	0.17	A
Pulsed Drain Current ($t_p=10\mu\text{s}$)	I_{DM}	0.68	A
Continous Source-Drain Diode Current	I_S	0.17	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	$^\circ\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS

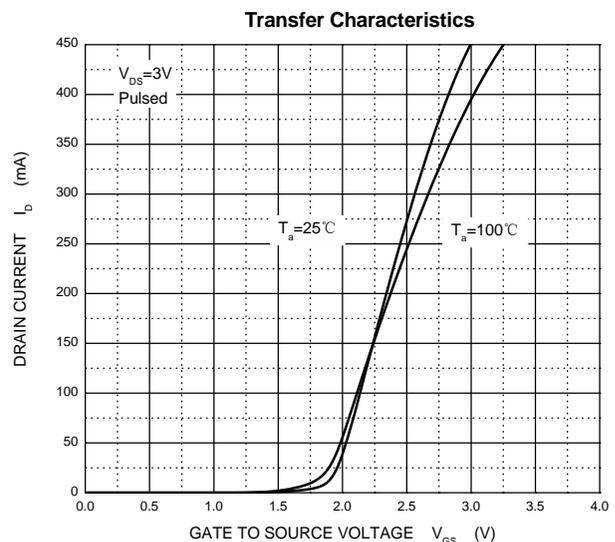
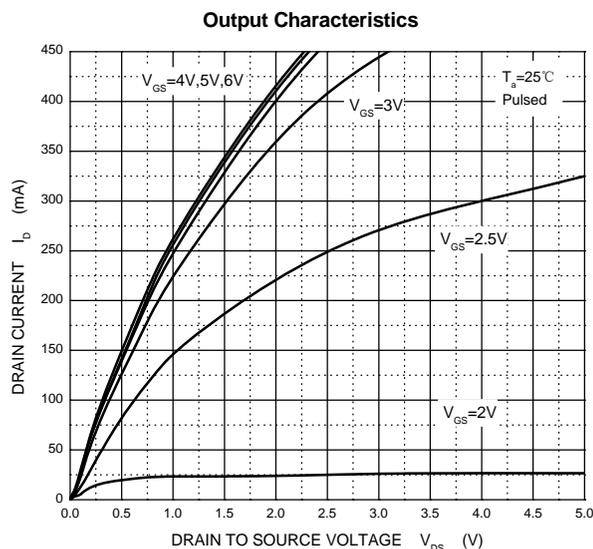
$T_a=25^\circ\text{C}$ unless otherwise specified

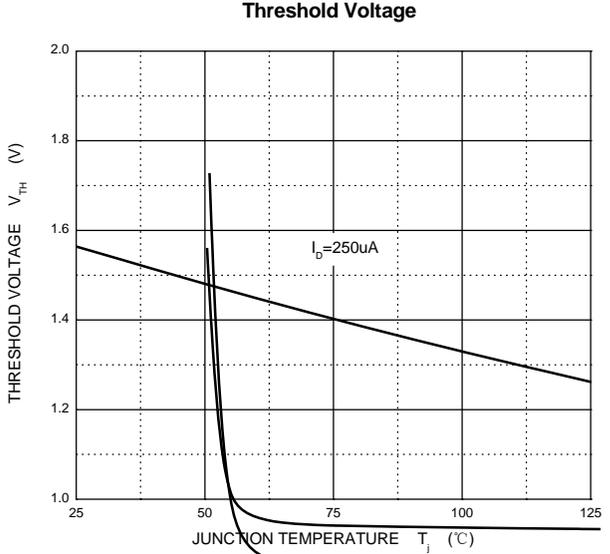
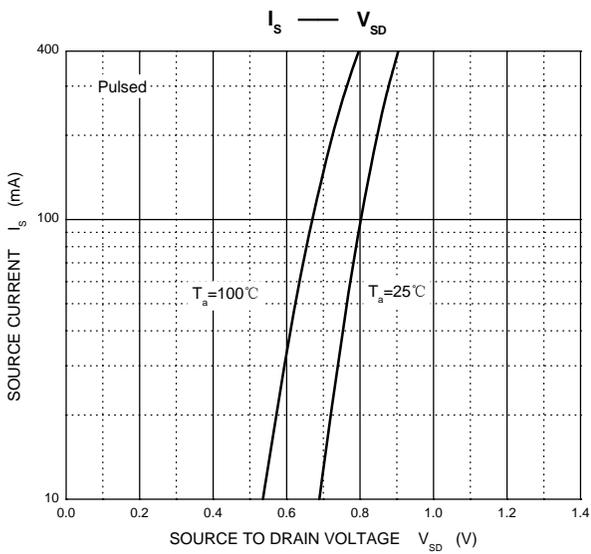
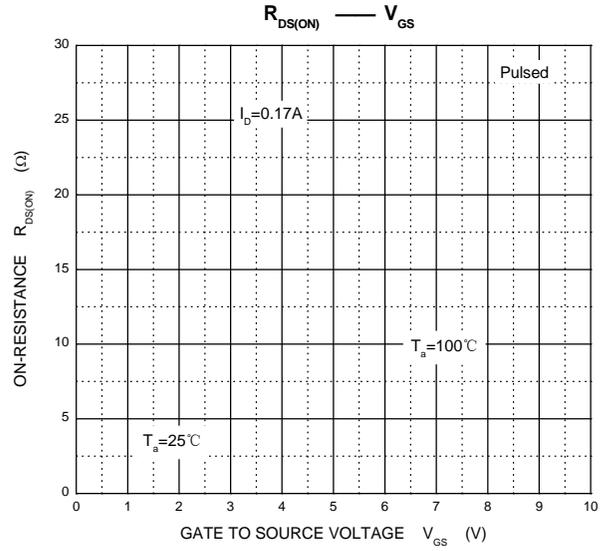
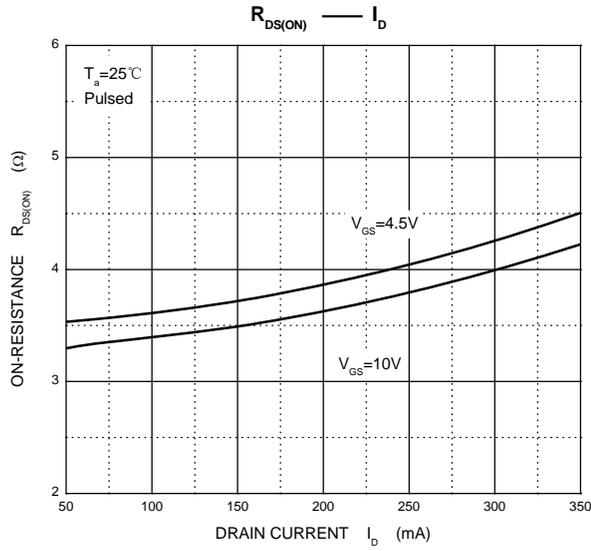
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V$			10	nA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 50	nA
Gate threshold voltage (note 2)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1		2.8	V
Drain-source on-resistance(note 2)	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 0.17A$			10	Ω
		$V_{GS} = 10V, I_D = 0.17A$			6	Ω
Forward transconductance(note 2)	g_{FS}	$V_{DS} = 10V, I_D = 170mA$	80			mS
Diode forward voltage	V_{SD}	$I_S = 340mA, V_{GS} = 0V$			1.3	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		29	60	pF
Output Capacitance	C_{oss}		10	15	pF	
Reverse Transfer Capacitance	C_{rss}		2	6	pF	
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DD} = 30V,$ $I_D = 2.8A, R_{GEN} = 50\Omega$			8	ns
Turn-on rise time	t_r				8	ns
Turn-off delay time	$t_{d(off)}$				13	ns
Turn-off fall time	t_f				16	ns
Total Gate Charge	Q_g	$V_{DS} = 10V, I_D = 0.22A,$ $V_{GS} = 10V$		1.4	2	nC
Gate-Source Charge	Q_{gs}			0.15	0.25	nC
Gate-Drain Charge	Q_{gd}			0.2	0.4	nC

Notes :

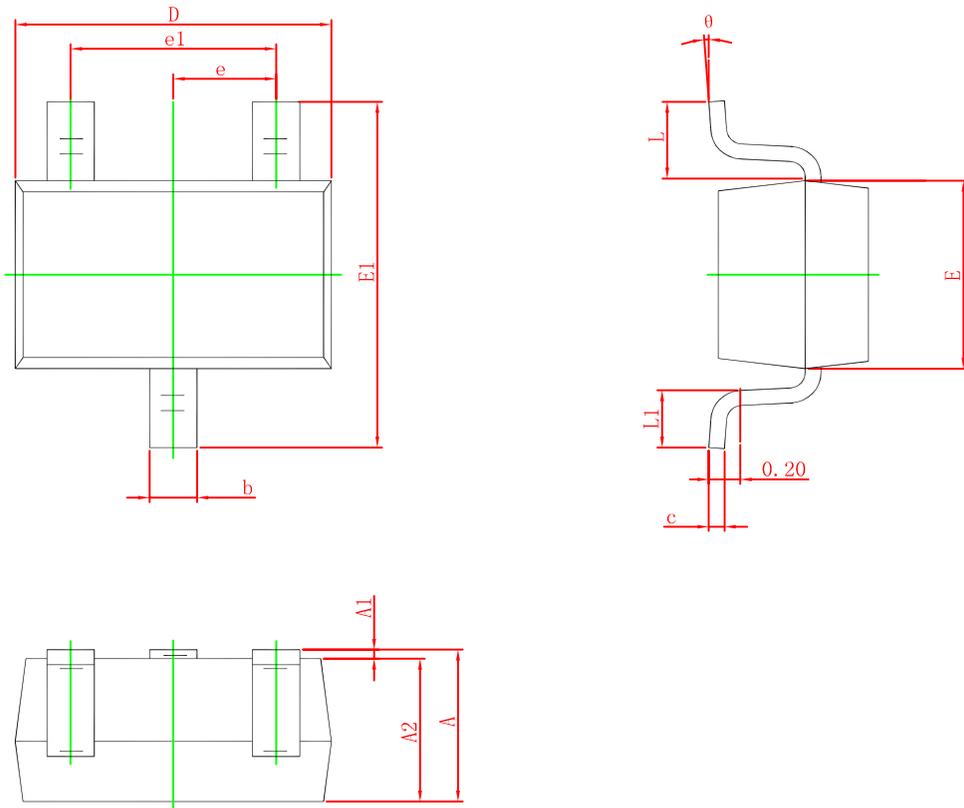
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse width=300 μs , duty cycle $\leq 2\%$.
3. Switching characteristics are independent of operating junction temperature.
4. Guaranteed by design, not subject to producing.

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°