



Product Summary

- $V_{DSS} = -20V, I_D = 0.7A$
- $R_{DS(on)}$  520mΩ@-4.5V(Max)  
750mΩ@-2.5V(Max)  
950mΩ @-1.8V(TYP)

Application

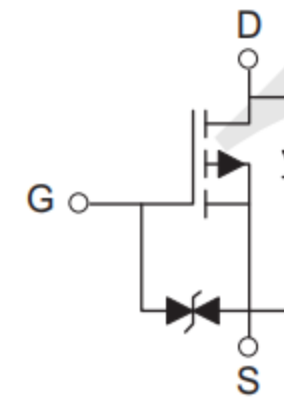
- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

Package and Pin Configuration

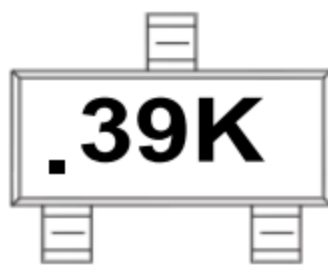
SOT-23



Circuit diagram



Marking:



Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Typical Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current (note 1)	$I_D$	-0.7	A
Pulsed Drain Current ( $t_p=10 \mu s$ )	$I_{DM}$	-1.2	A
Power Dissipation (note 1)	$P_D$	350	mW
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	357	°C/W
Operation Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	°C
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	$T_L$	260	°C



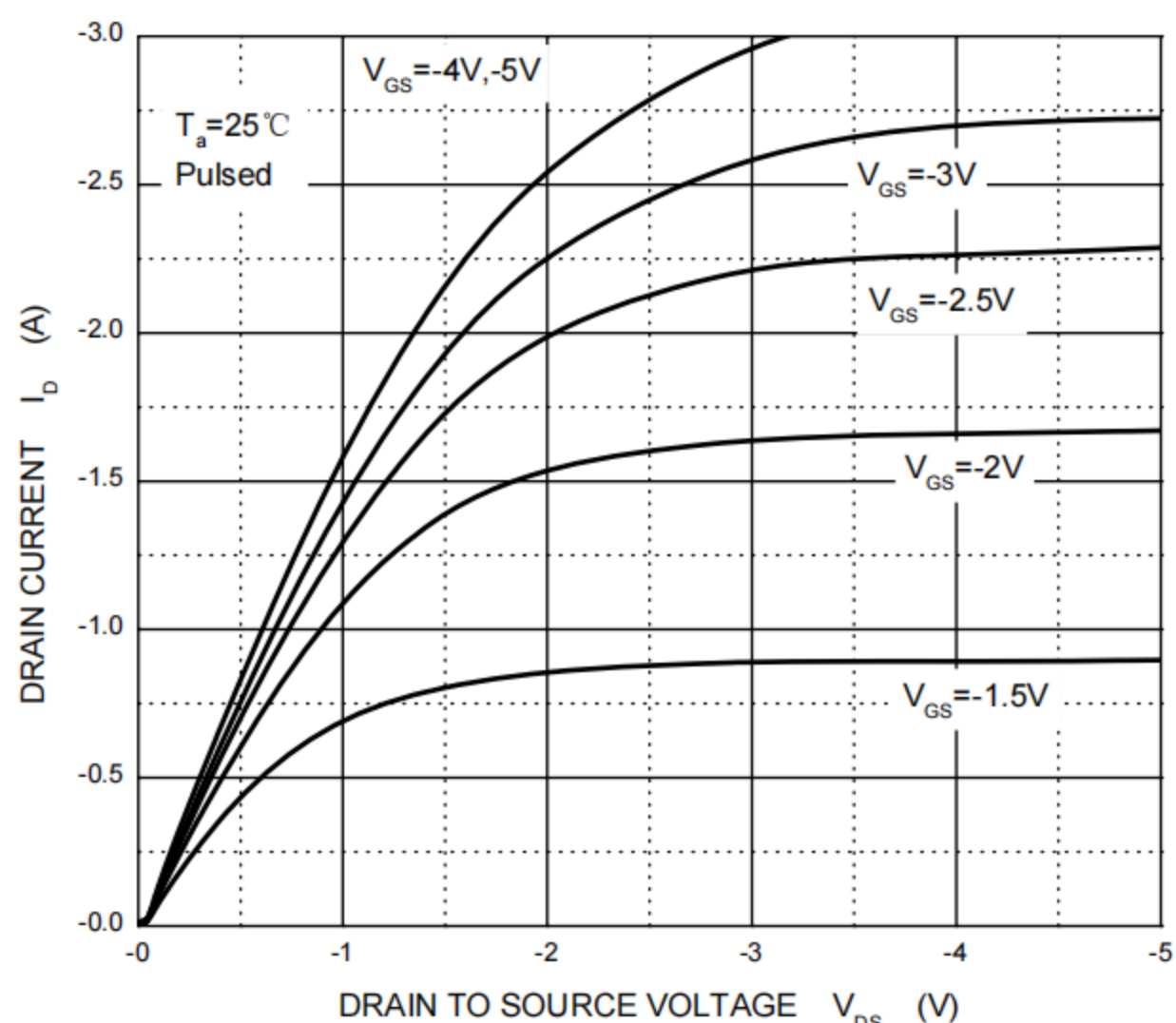
**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC CHARACTERISTICS</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±20	μA
Gate threshold voltage (note 2)	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.35	-0.45	-1.1	V
Drain-source on-resistance (note 2)	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -1A		430	520	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -0.8A		624	750	mΩ
		V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -0.5A		950		mΩ
Forward transconductance (note 2)	g <sub>FS</sub>	V <sub>DS</sub> = -10V, I <sub>D</sub> = -0.54A		1.2		S
Diode forward voltage	V <sub>SD</sub>	I <sub>S</sub> = -0.5A, V <sub>GS</sub> = 0V			-1.2	V
<b>DYNAMIC CHARACTERISTICS (note 4)</b>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V, f = 1MHz		113	170	pF
Output capacitance	C <sub>oss</sub>			15	25	pF
Reverse transfer capacitance	C <sub>rss</sub>			9	15	pF
<b>SWITCHING CHARACTERISTICS (note 4)</b>						
Turn-on delay time (note 3)	t <sub>d(on)</sub>	V <sub>GS</sub> = -4.5V, V <sub>DS</sub> = -10V, I <sub>D</sub> = -200mA, R <sub>GEN</sub> = 10Ω		9		ns
Turn-on rise time (note 3)	t <sub>r</sub>			5.8		ns
Turn-off delay time (note 3)	t <sub>d(off)</sub>			32.7		ns
Turn-off fall time (note 3)	t <sub>f</sub>			20.3		ns

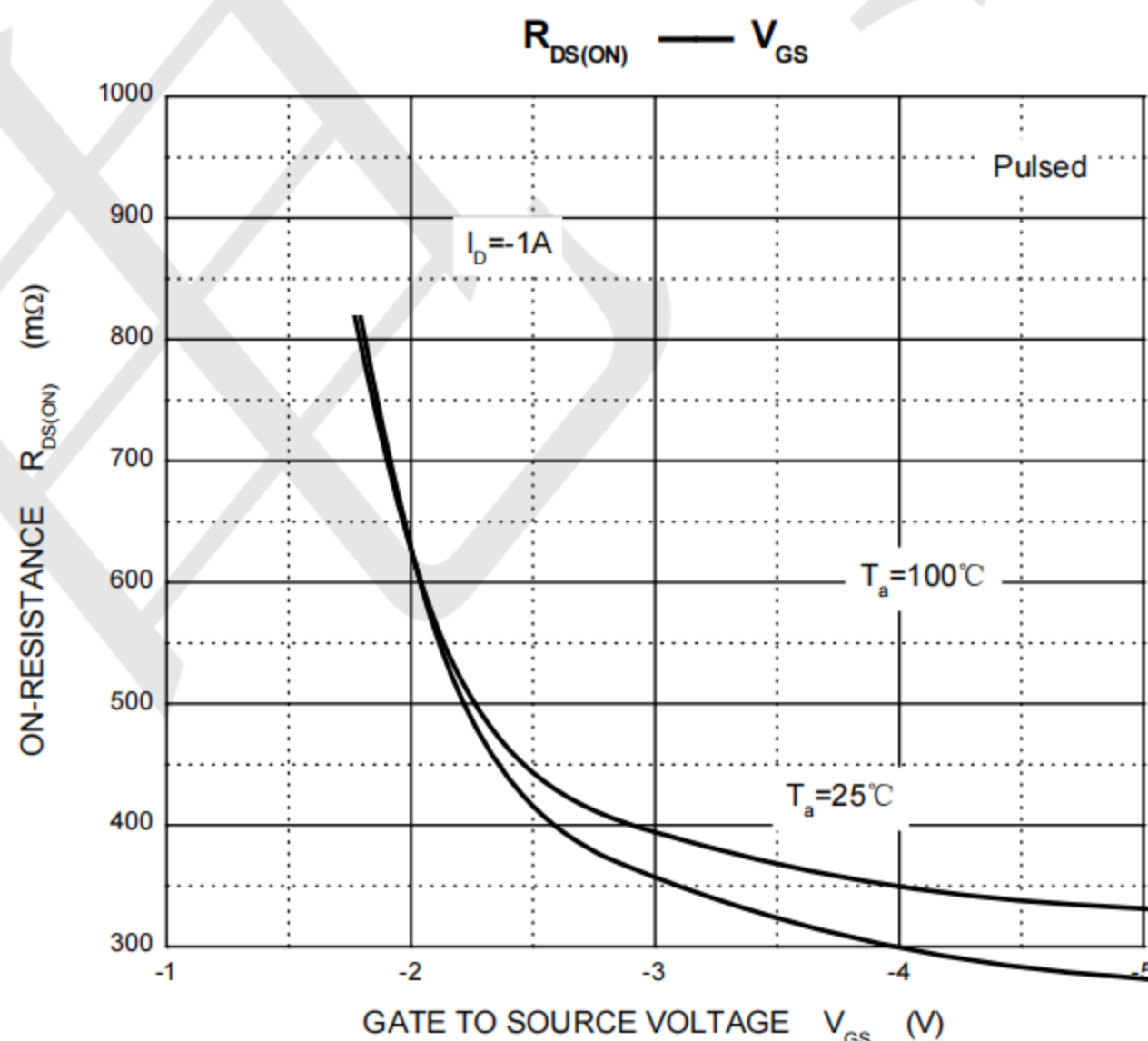
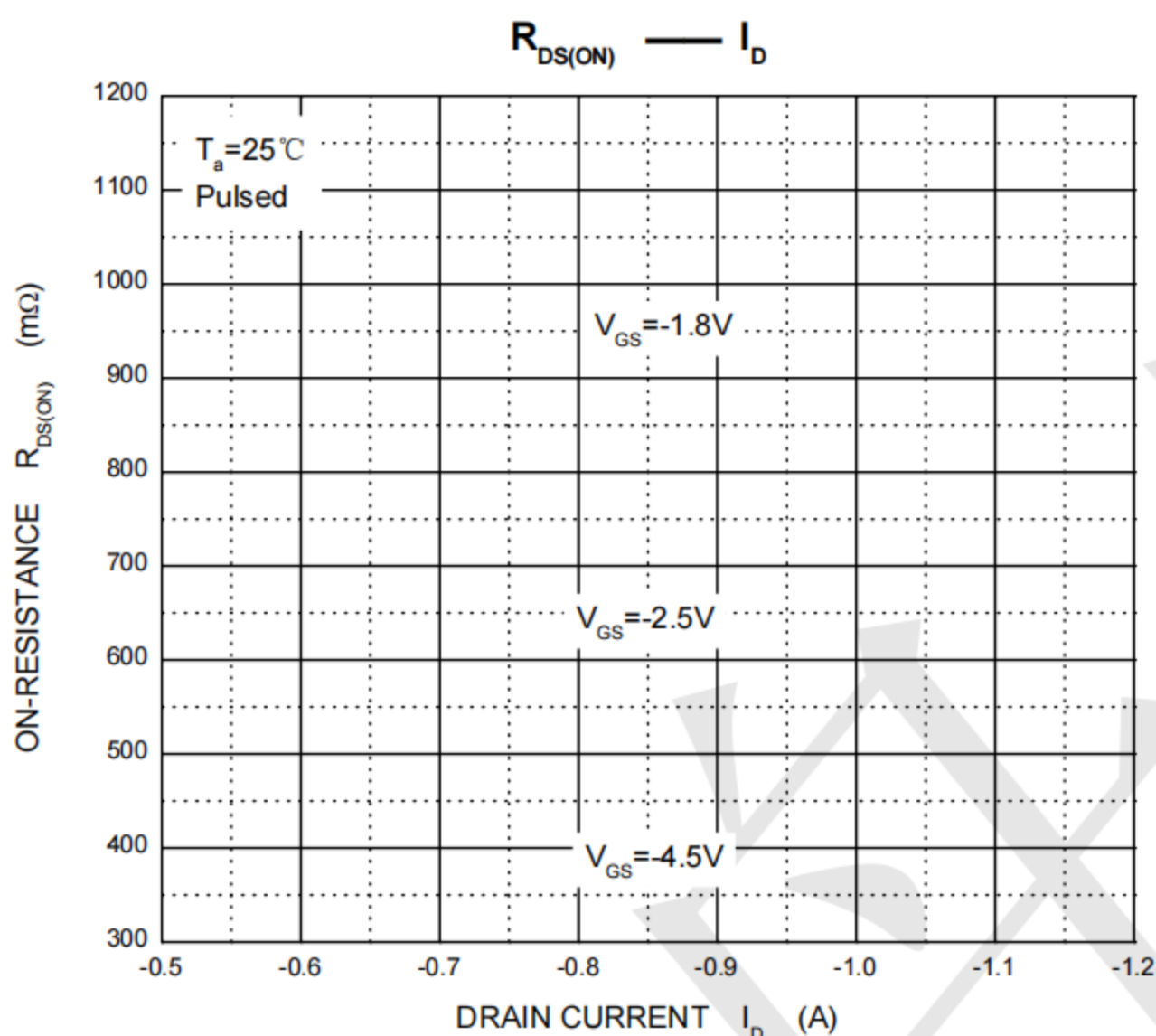
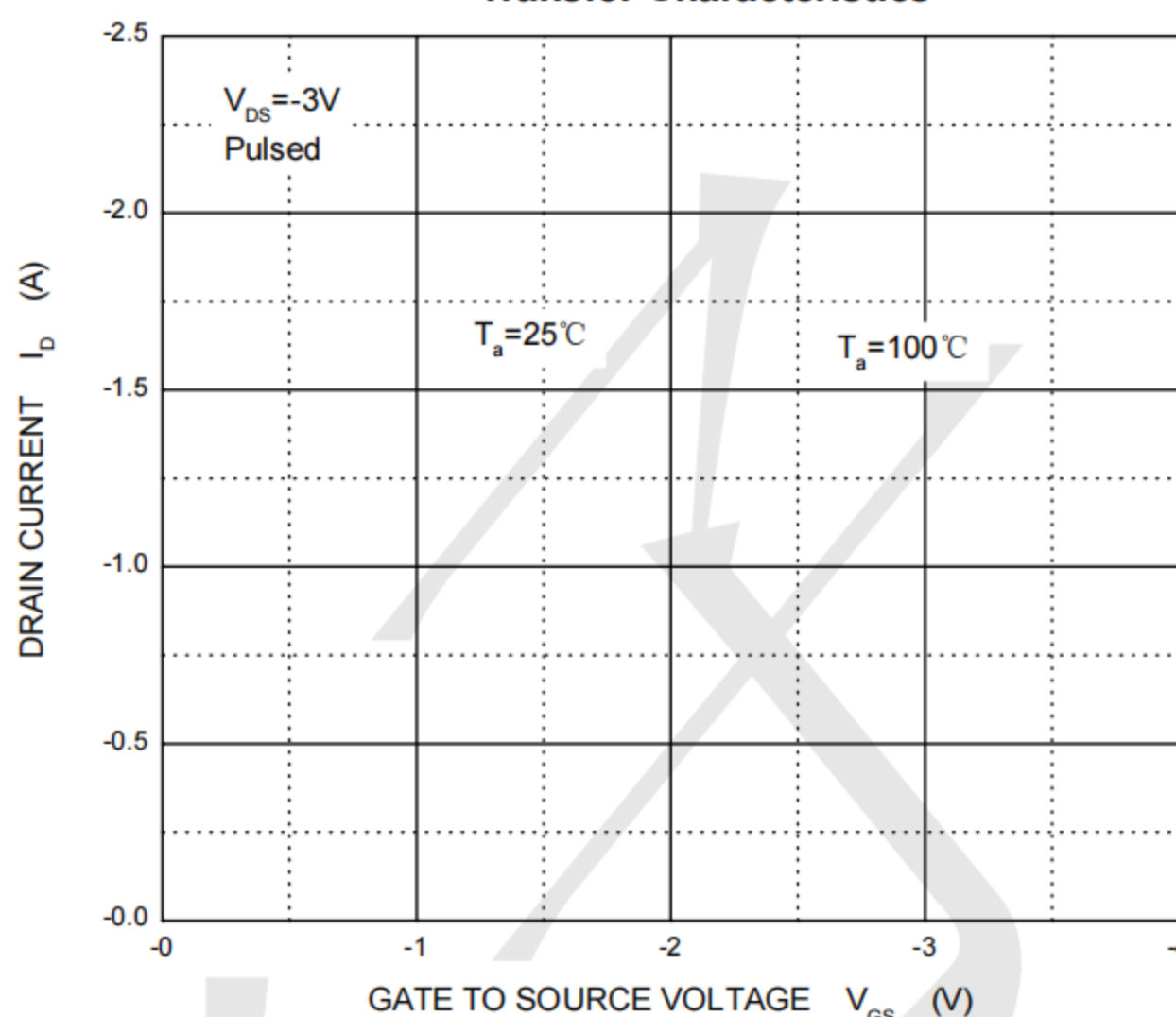


### Typical Electrical and Thermal Characteristics

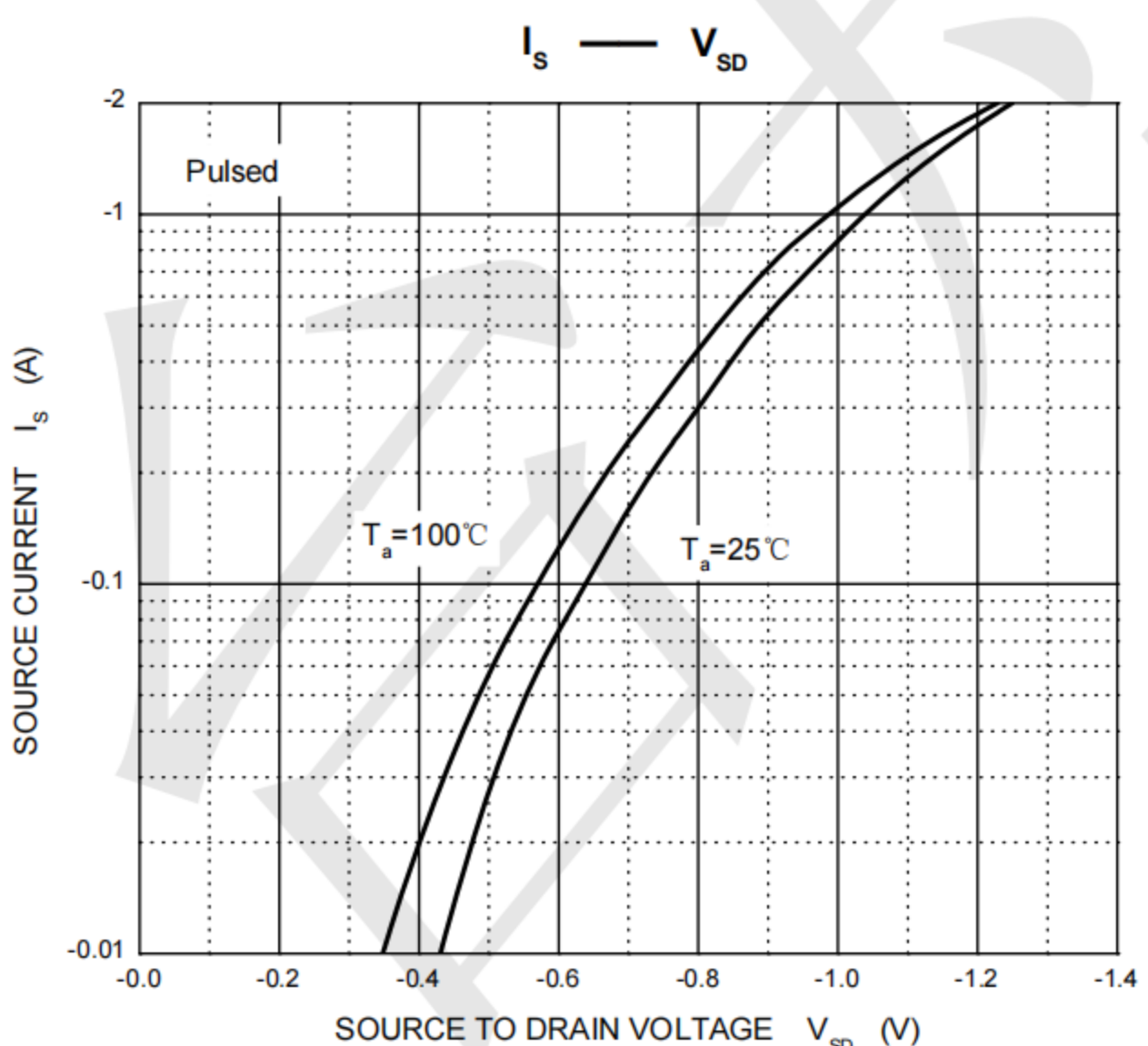
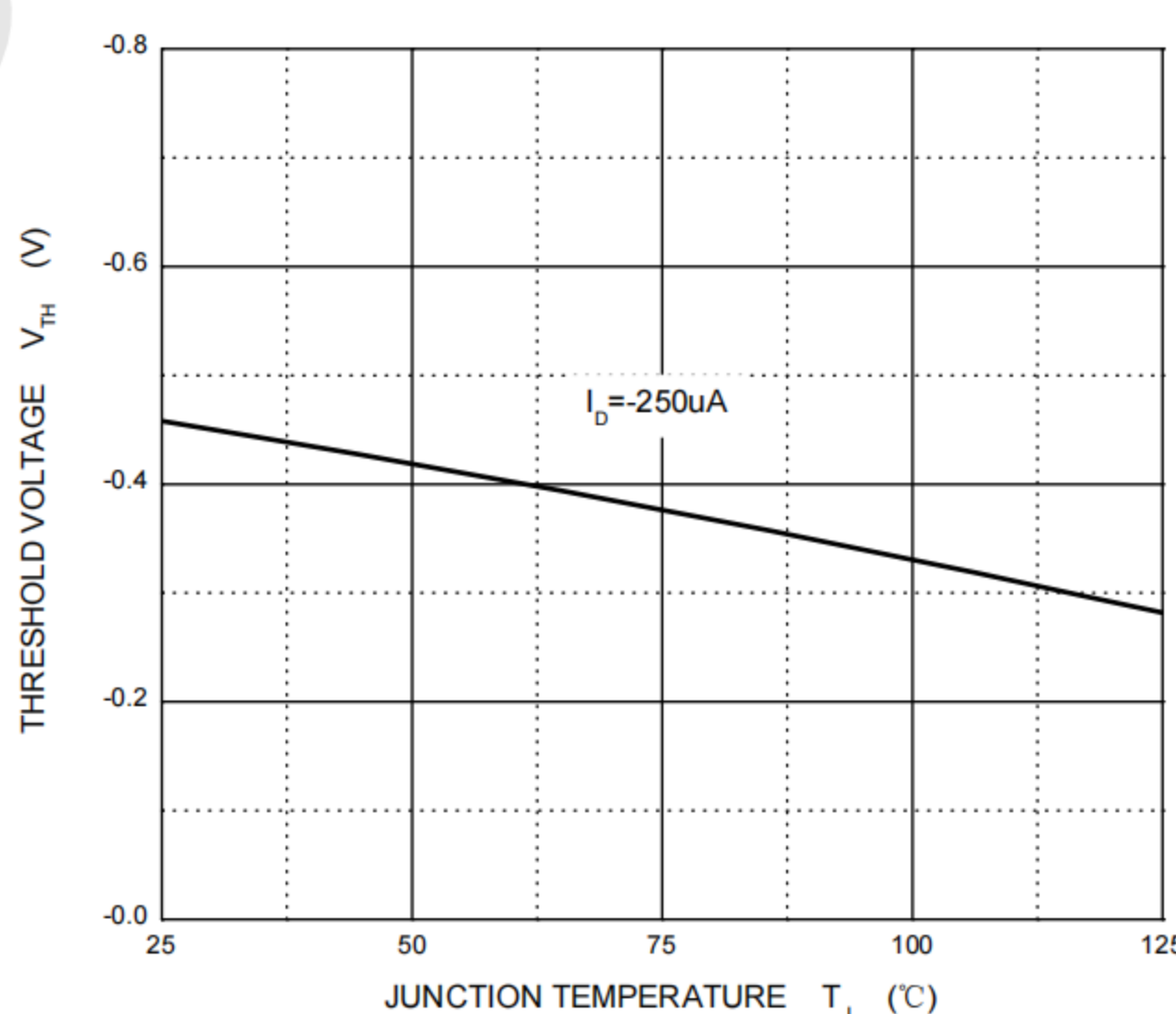
Output Characteristics



Transfer Characteristics

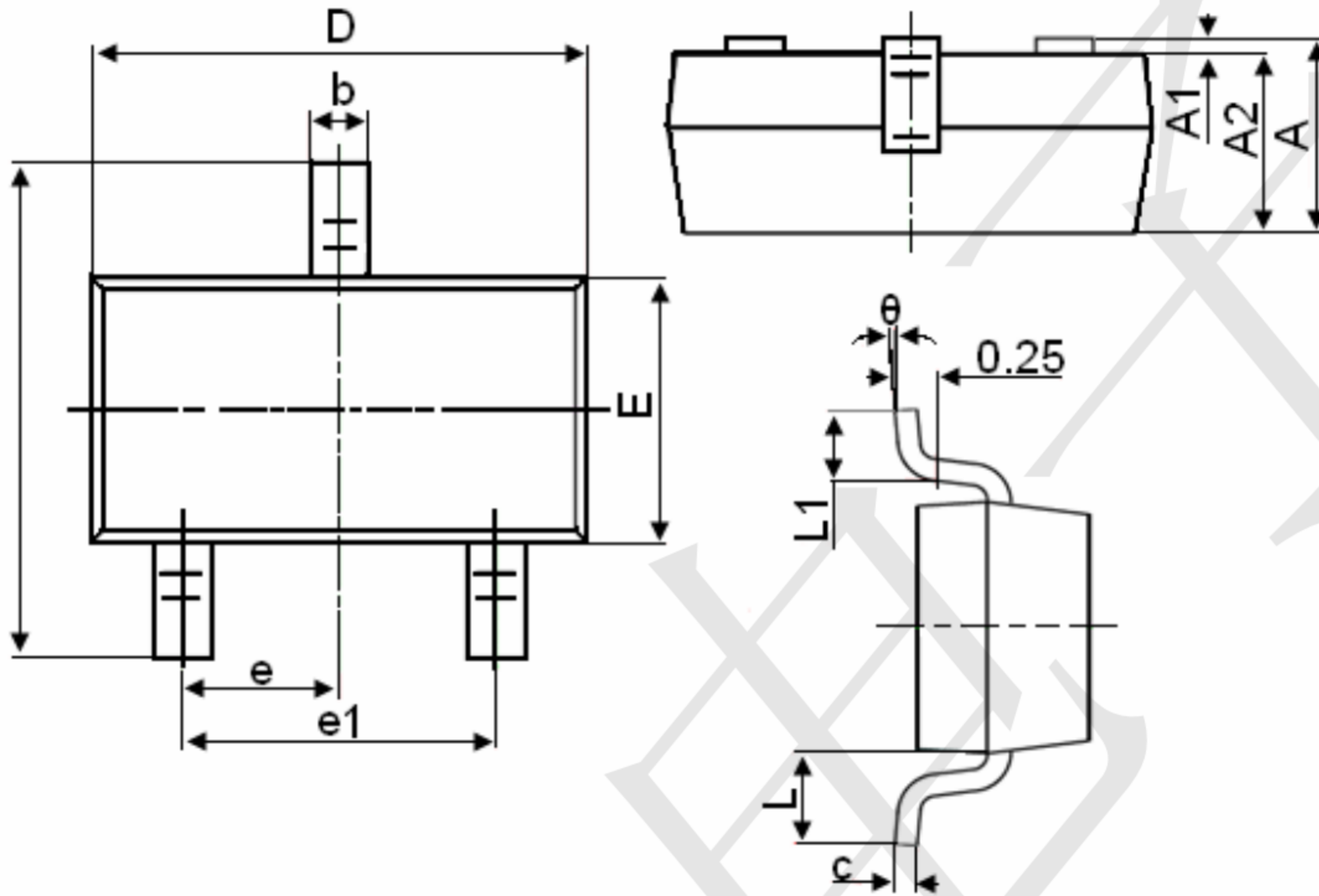


Threshold Voltage





SOT-23 Package Information



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°

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