



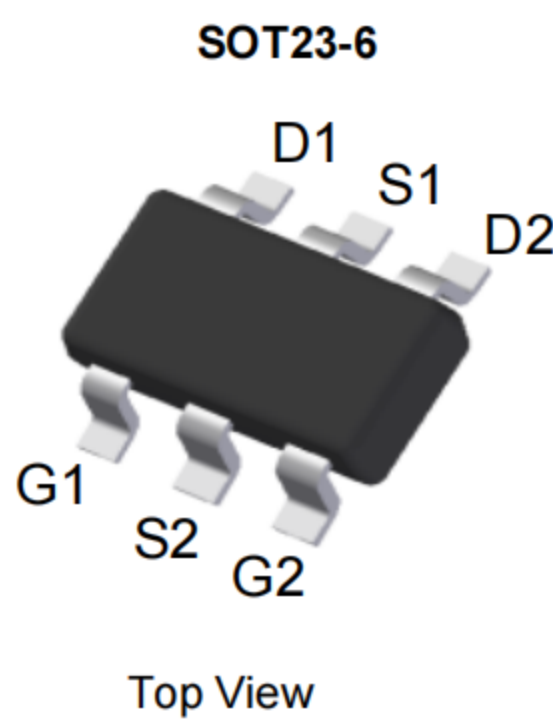
**Product Summary**

$BV_{DSS}$	100V
$R_{DS(ON)}$	200m $\Omega$
$I_D$	3A

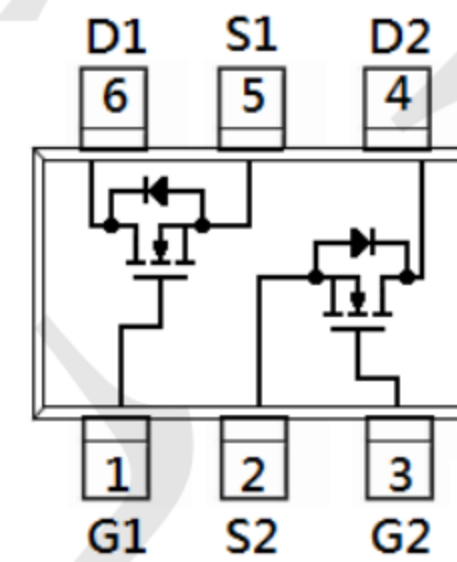
**Application**

- Power switch
- DC/DC converters

**Package and Pin Configuration**



**Circuit diagram**



**Marking: 601**

**Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Continuous Drain Current	$I_D$	3	A
Pulsed Drain Current (note1)	$I_{DM}$	12	A
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Power Dissipation	$P_D$	1.67	W
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 To 150	$^\circ\text{C}$

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Ambient	$R_{thJA}$	75	$^\circ\text{C/W}$

**Electrical Characteristics (  $T_A = 25^\circ\text{C}$  unless otherwise noted )**

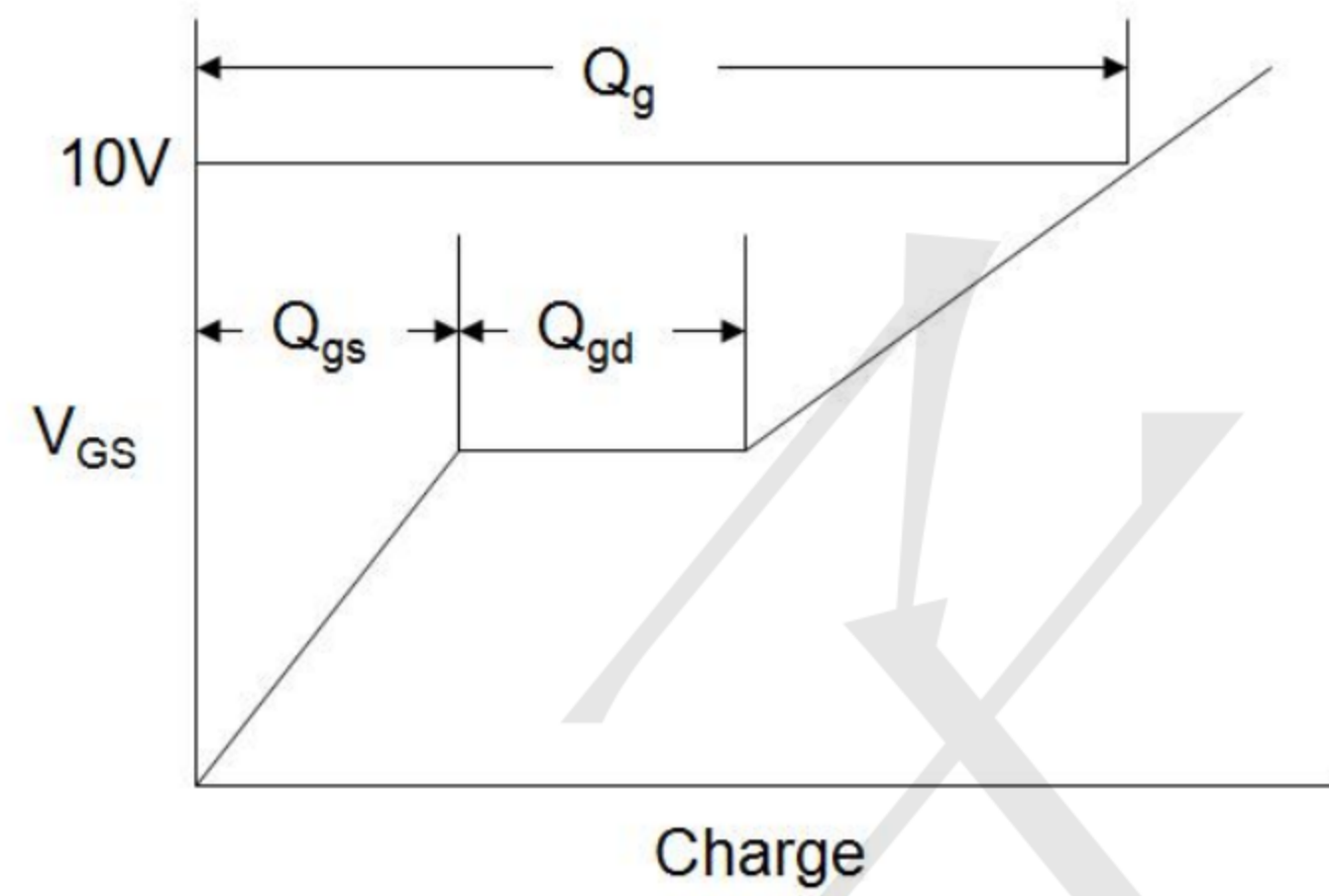
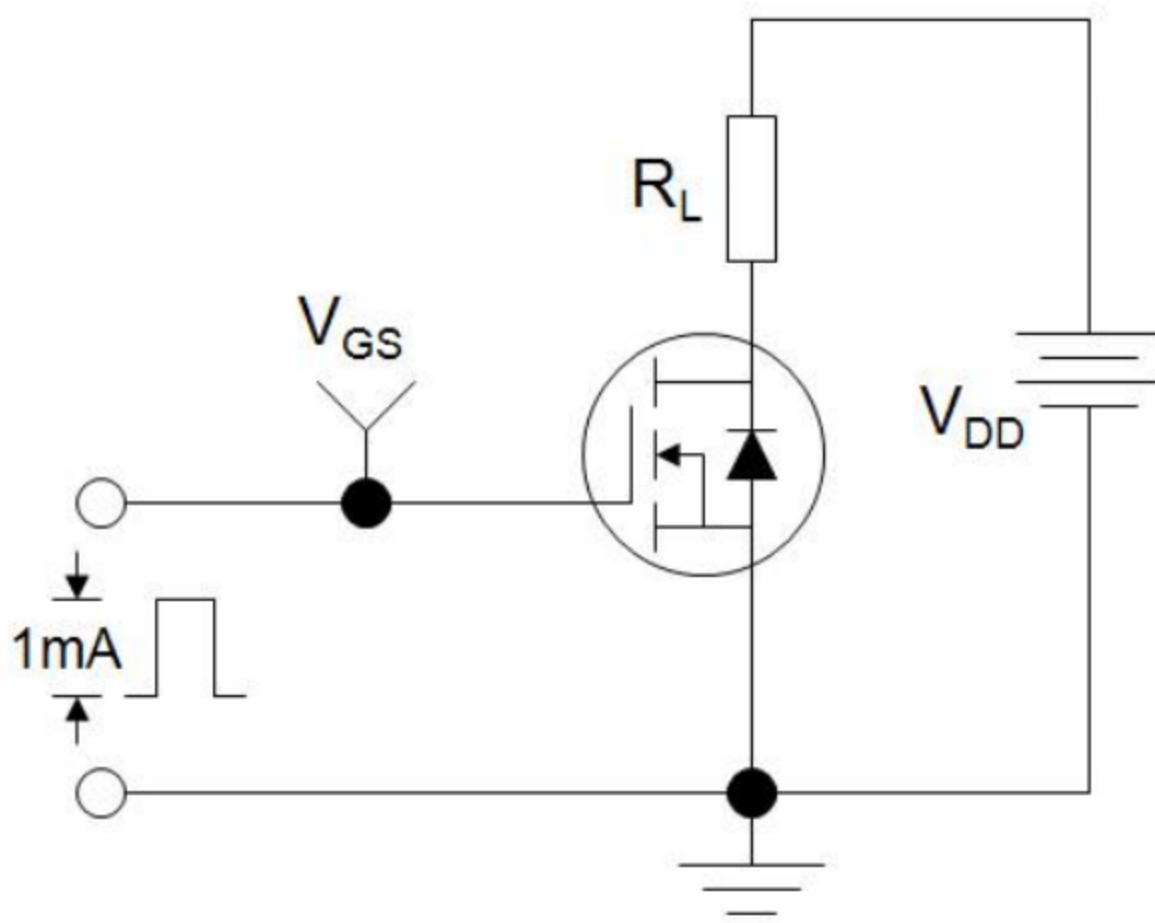
Parameter	Symbol	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
<b>Static Parameters</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100	--	--	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 100V, V_{GS} = 0V$	--	--	1	$\mu A$
Gate-Source Leakage	$I_{GSS}$	$V_{GS} = \pm 20V$	--	--	$\pm 100$	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.6	2.2	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 2A$	--	200	240	m $\Omega$
		$V_{GS} = 4.5V, I_D = 2A$	--	220	260	
Forward Transconductance	$g_{FS}$	$V_{GS} = 5V, I_D = 2A$	--	6	--	S
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V,$ $V_{DS} = 50V,$ $f = 1.0MHz$	--	536	--	pF
Output Capacitance	$C_{oss}$		--	103	--	
Reverse Transfer Capacitance	$C_{rss}$		--	52	--	
Total Gate Charge	$Q_g$	$V_{DD} = 50V,$ $I_D = 2A,$ $V_{GS} = 4.5V$	--	4.8	--	nC
Gate-Source Charge	$Q_{gs}$		--	1.2	--	
Gate-Drain Charge	$Q_{gd}$		--	1.7	--	
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 50V,$ $I_D = 2A,$ $R_G = 6\Omega$	--	52	--	ns
Turn-on Rise Time	$t_r$		--	12	--	
Turn-off Delay Time	$t_{d(off)}$		--	17	--	
Turn-off Fall Time	$t_f$		--	10	--	
<b>Drain-Source Body Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$	$T_C = 25^\circ\text{C}$	--	--	3	A
Body Diode Voltage	$V_{SD}$	$T_J = 25^\circ\text{C}, I_{SD} = 2A, V_{GS} = 0V$	--	--	1.2	V
Reverse Recovery Charge	$Q_{rr}$	$I_F = 2A, V_{GS} = 0V$ $di/dt = 500A/\mu s$	--	91	--	nC
Reverse Recovery Time	$T_{rr}$		--	28	--	ns



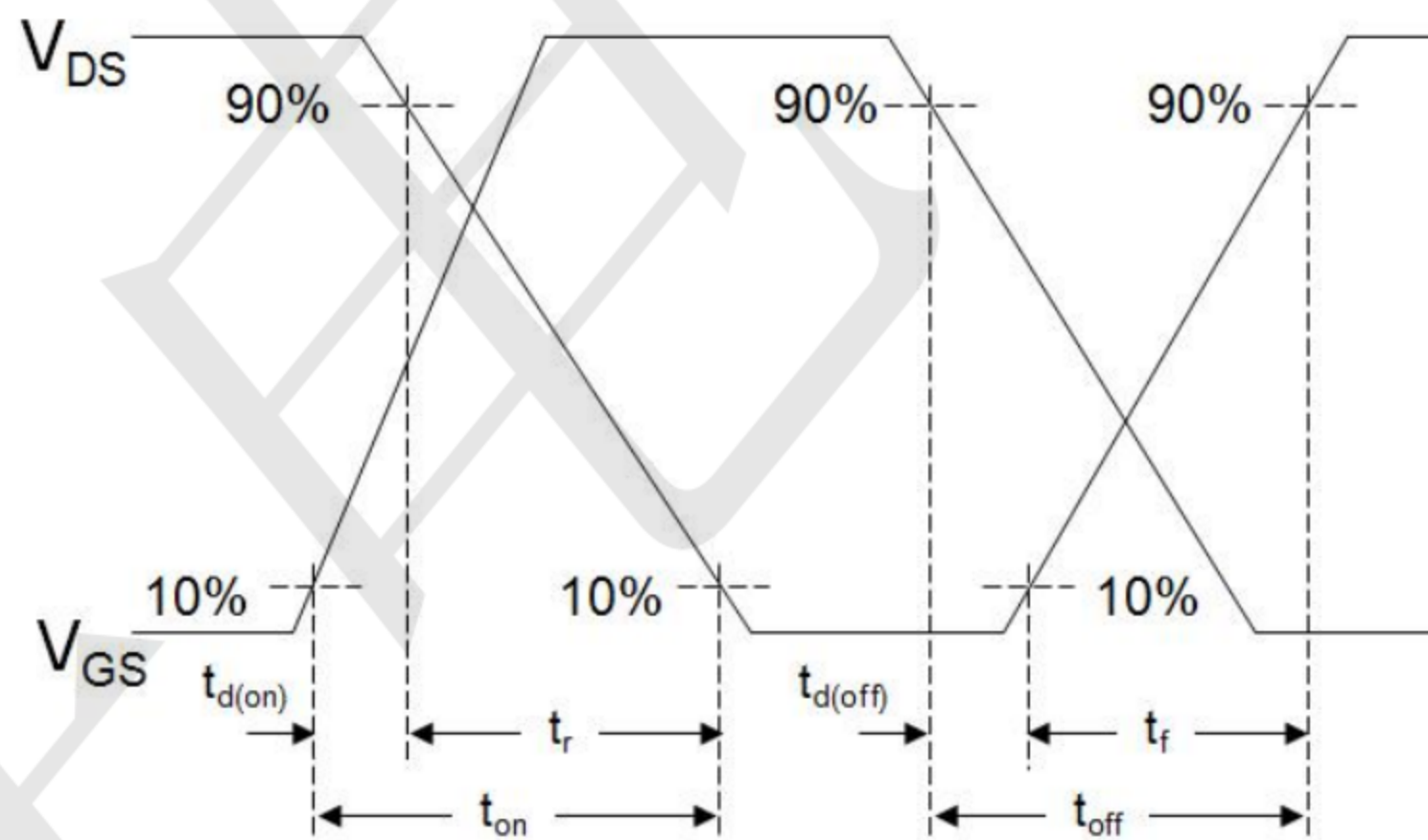
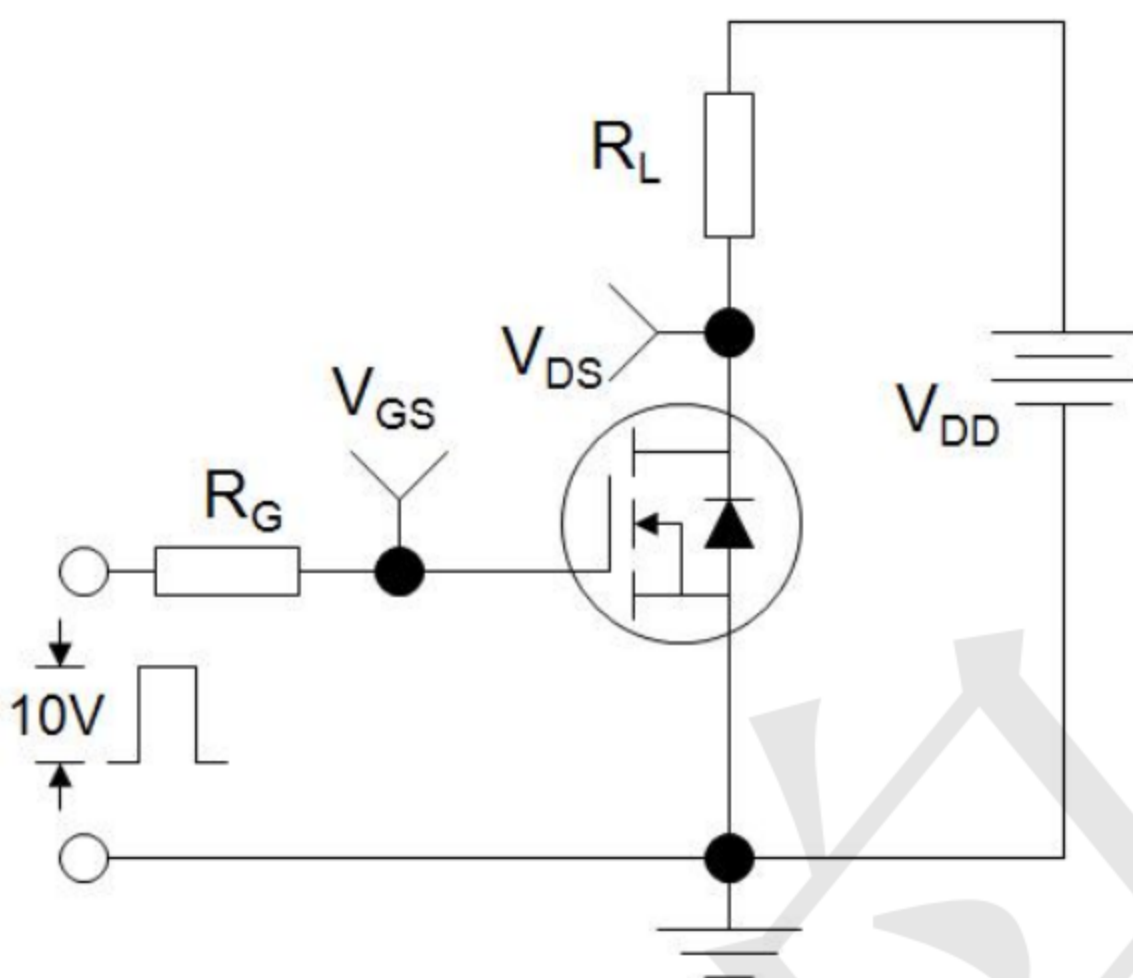


Gate Charge Test Circuit

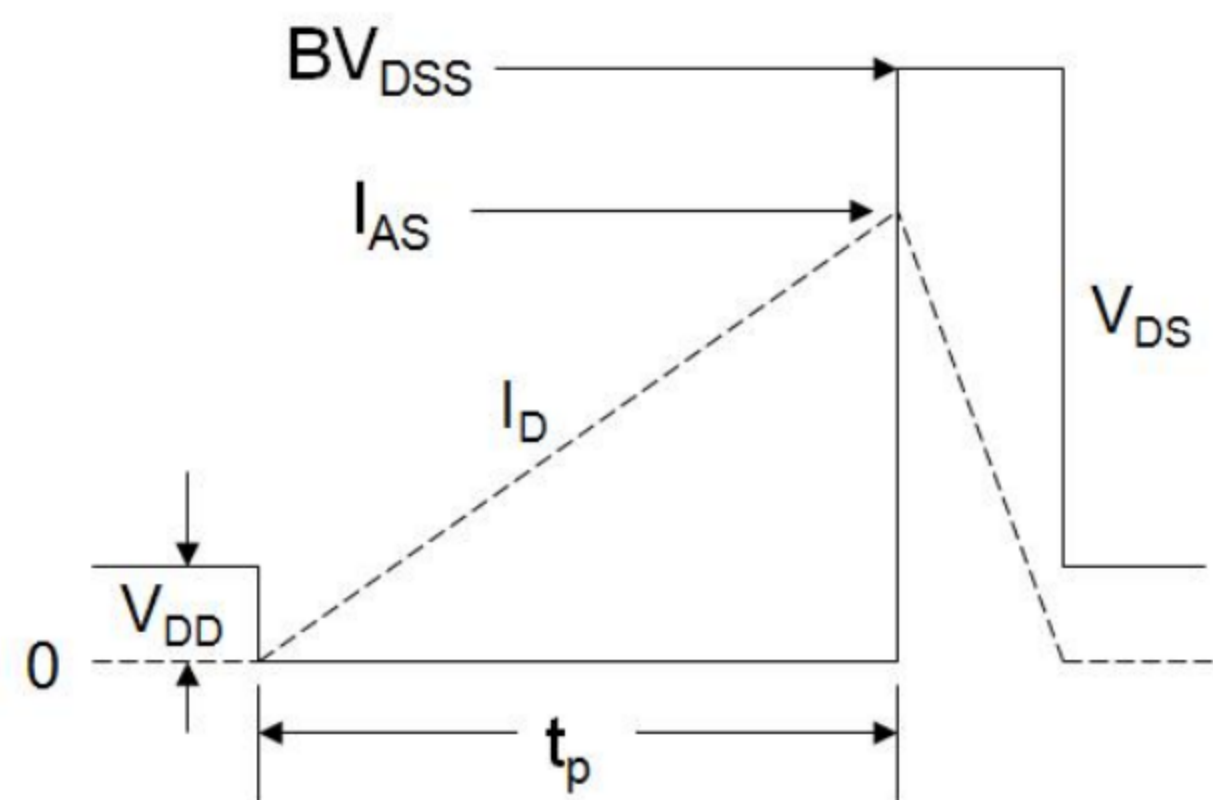
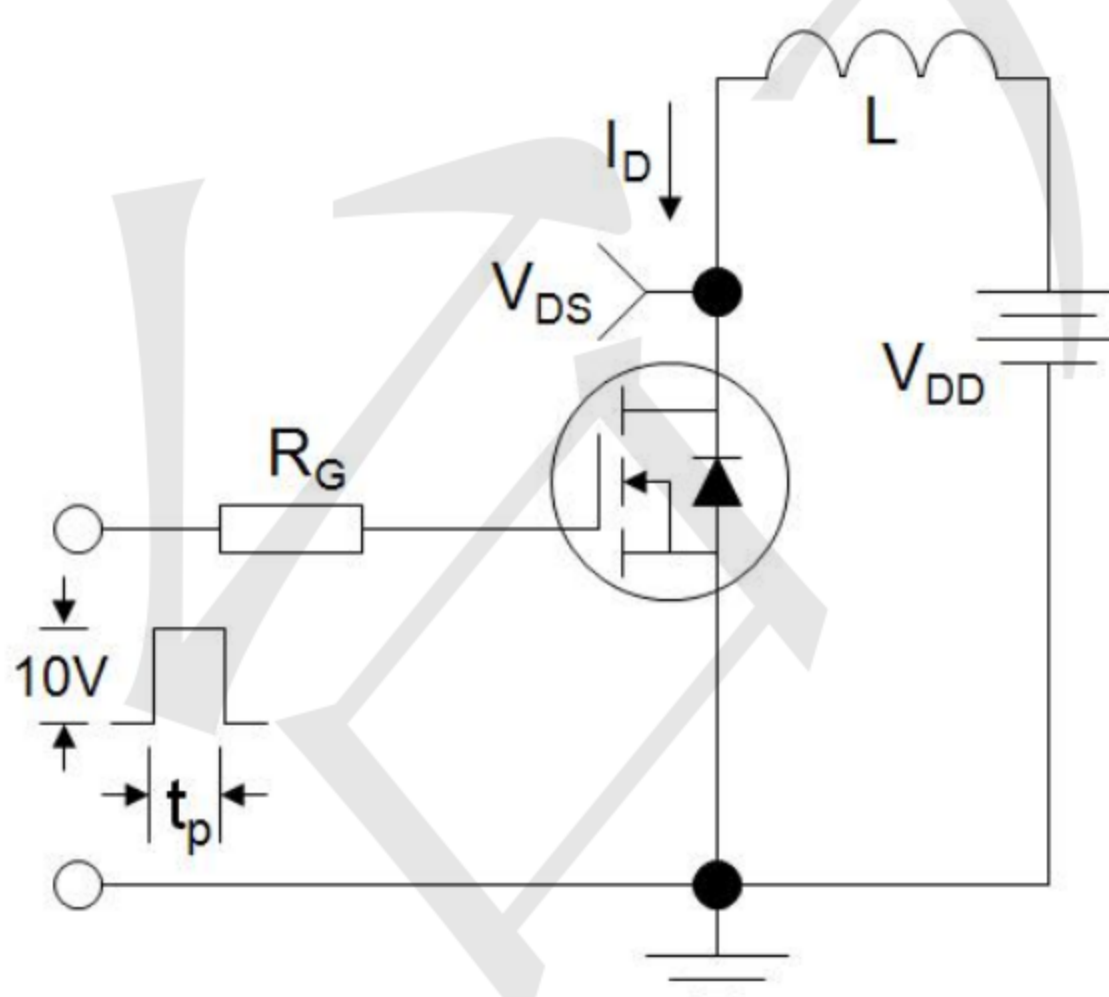
[www.sot23.com.tw](http://www.sot23.com.tw)



Switch Time Test Circuit



EAS Test Circuit





Typical Characteristics  $T_J = 25^\circ\text{C}$ , unless otherwise noted

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Figure 1. Output Characteristics

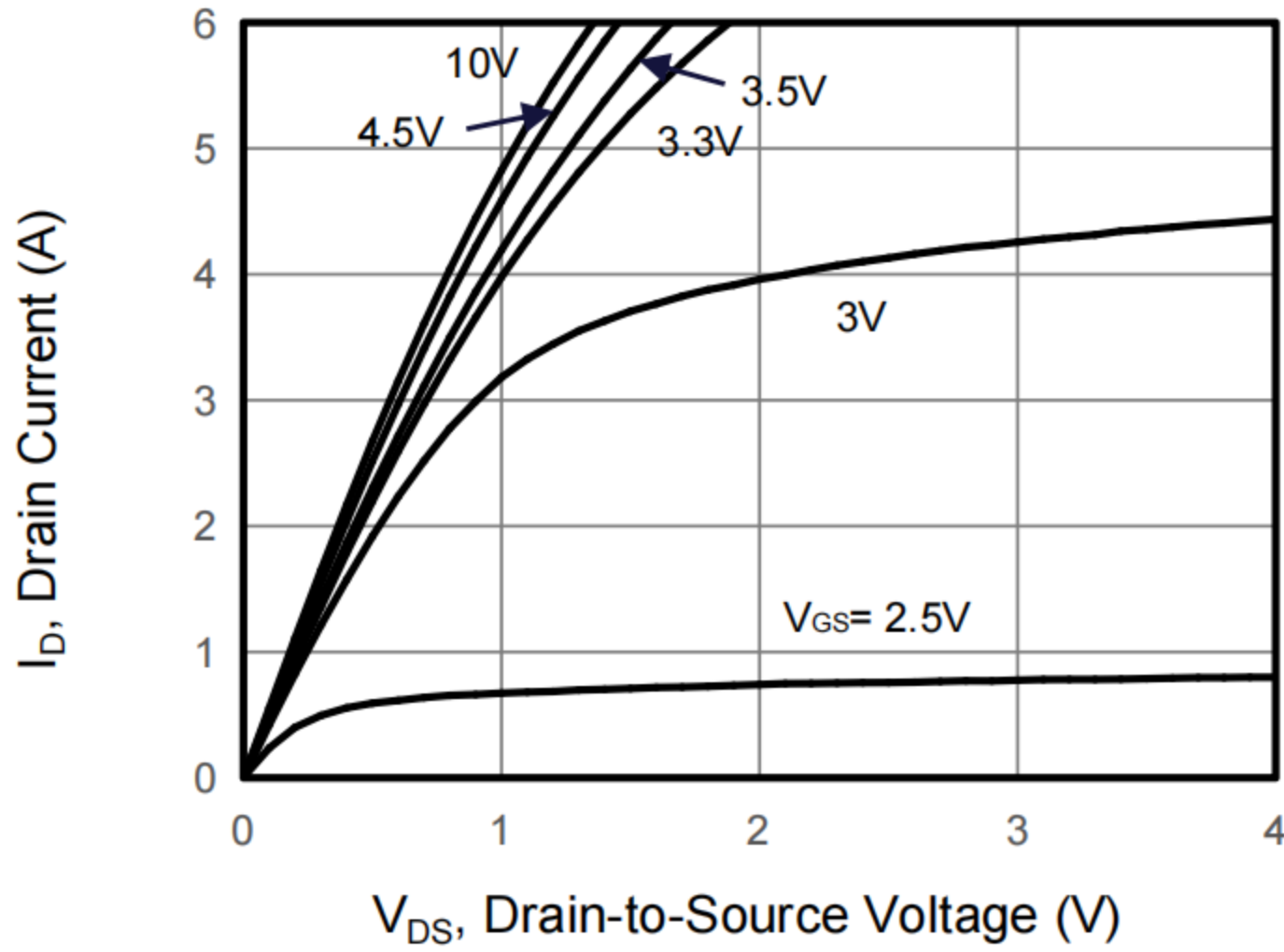


Figure 2. Transfer Characteristics

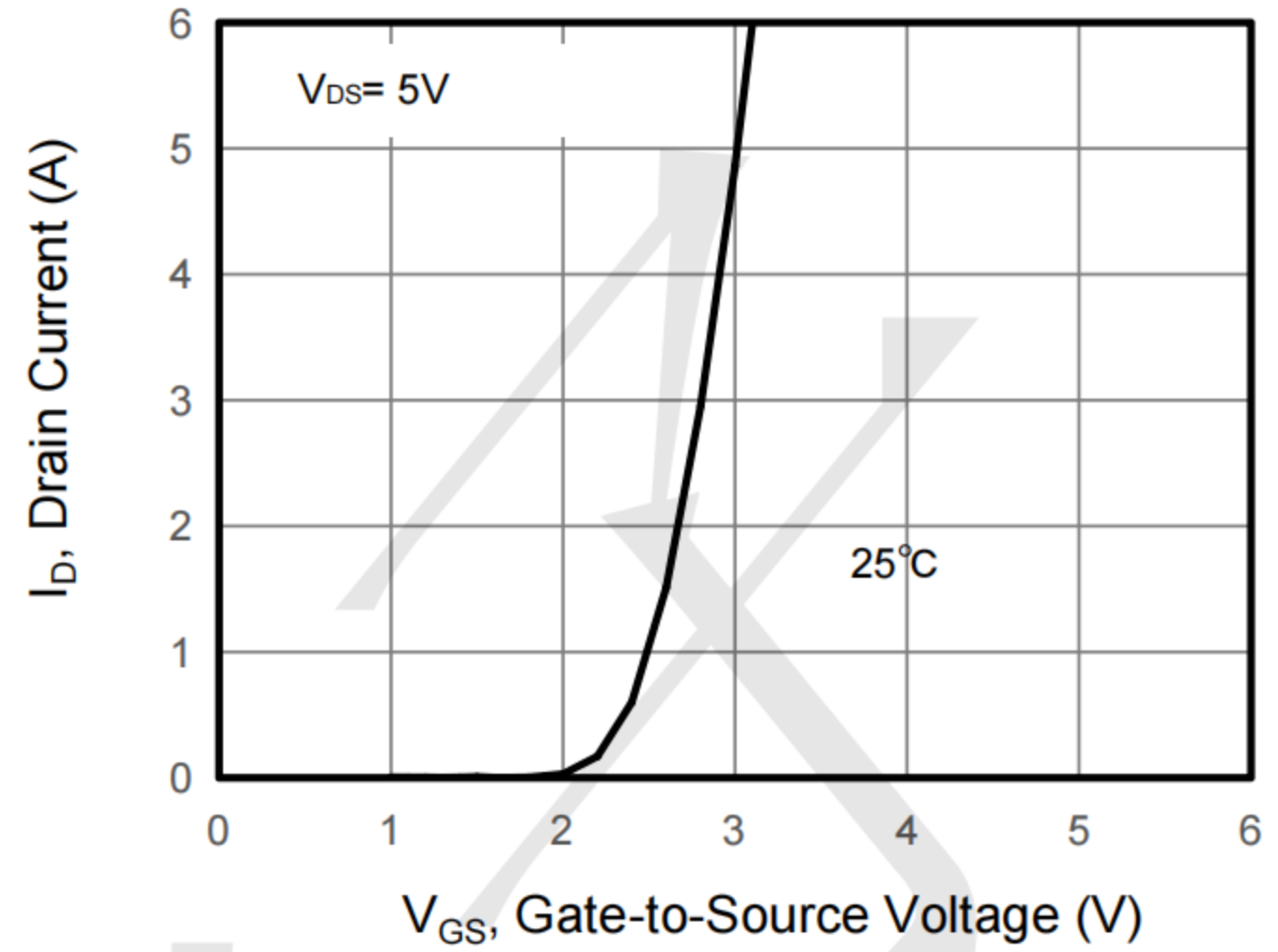


Figure 3. Drain Source On Resistance

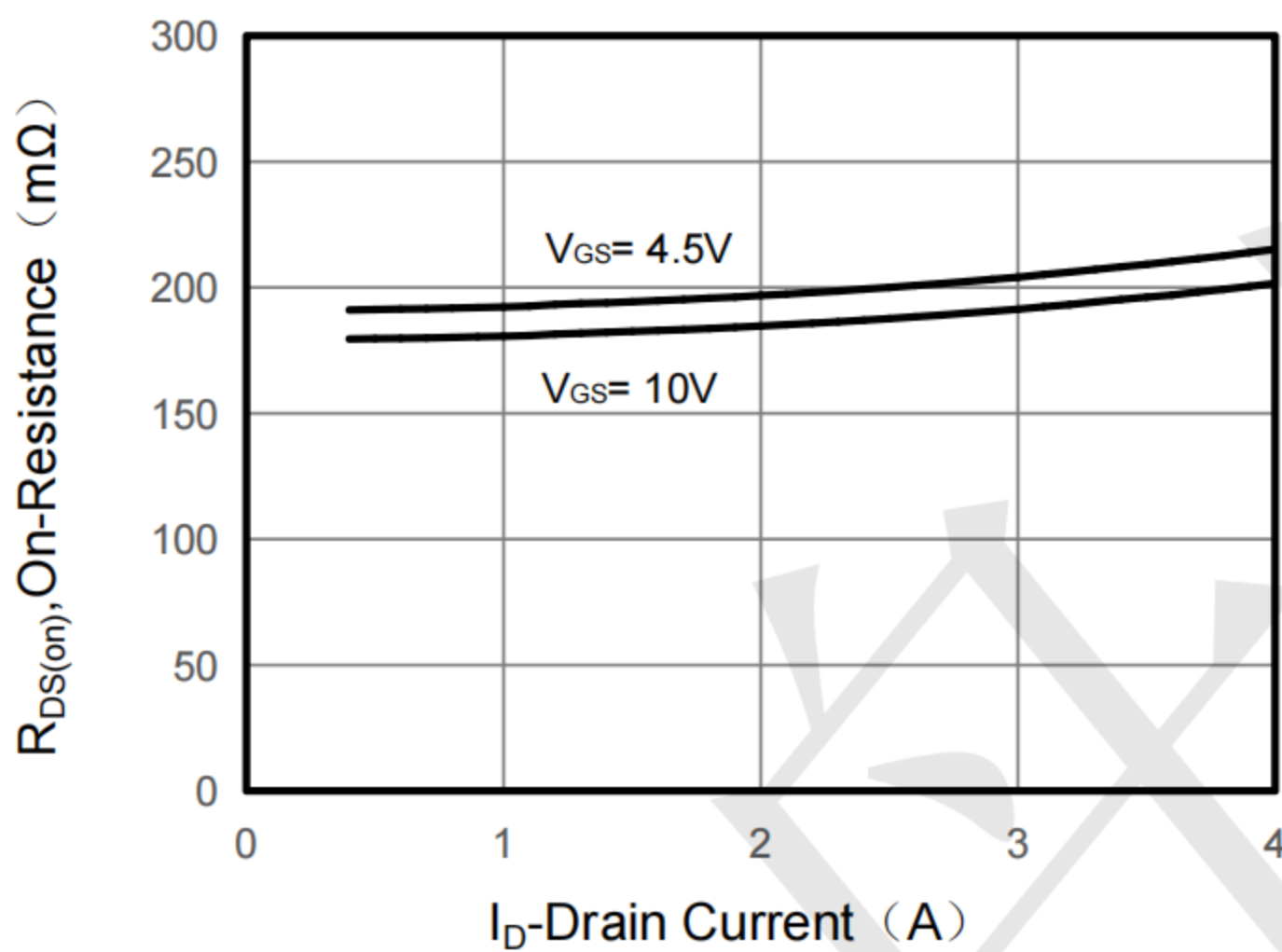


Figure 4. Gate Charge

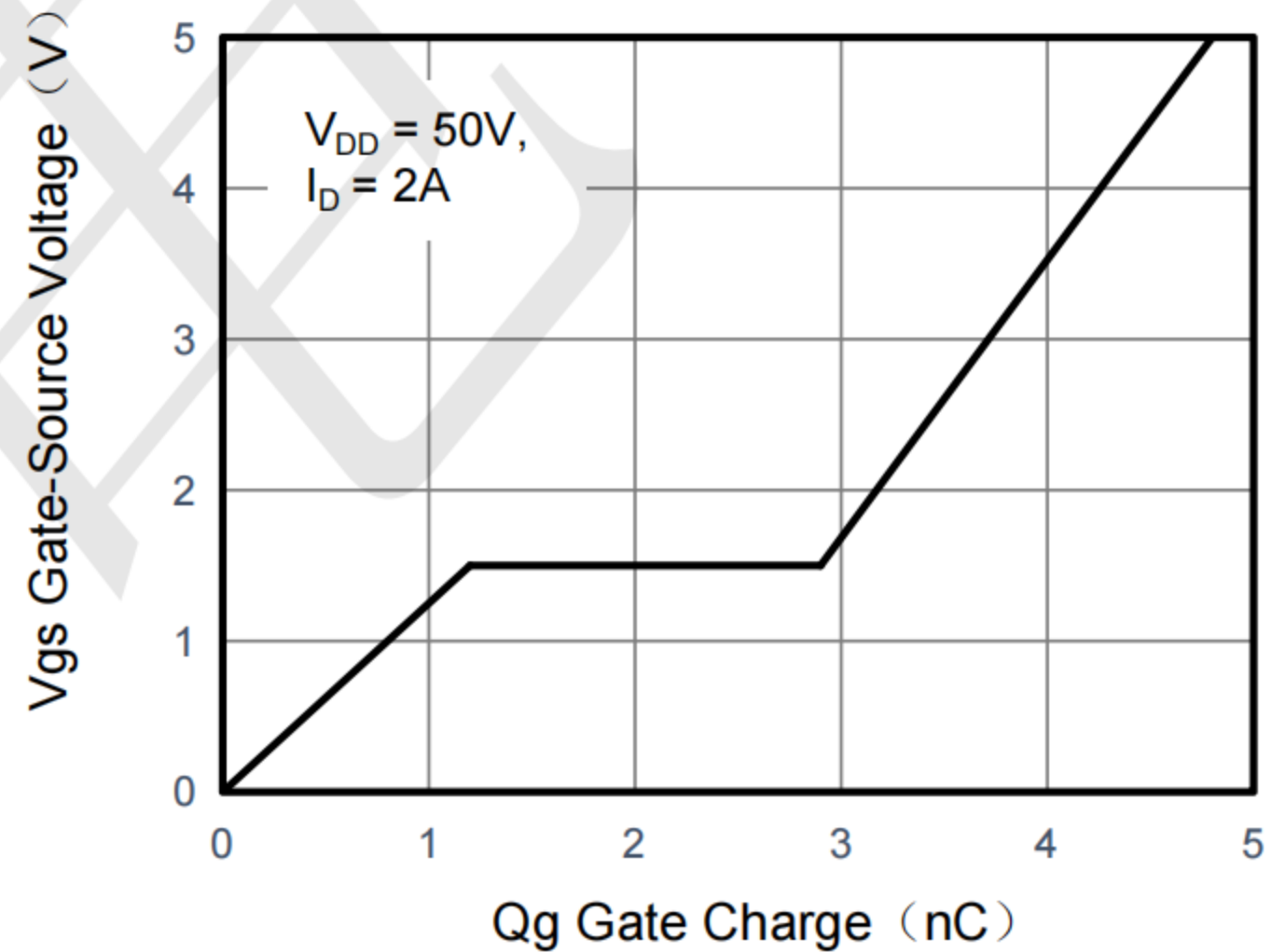


Figure 5. Capacitance

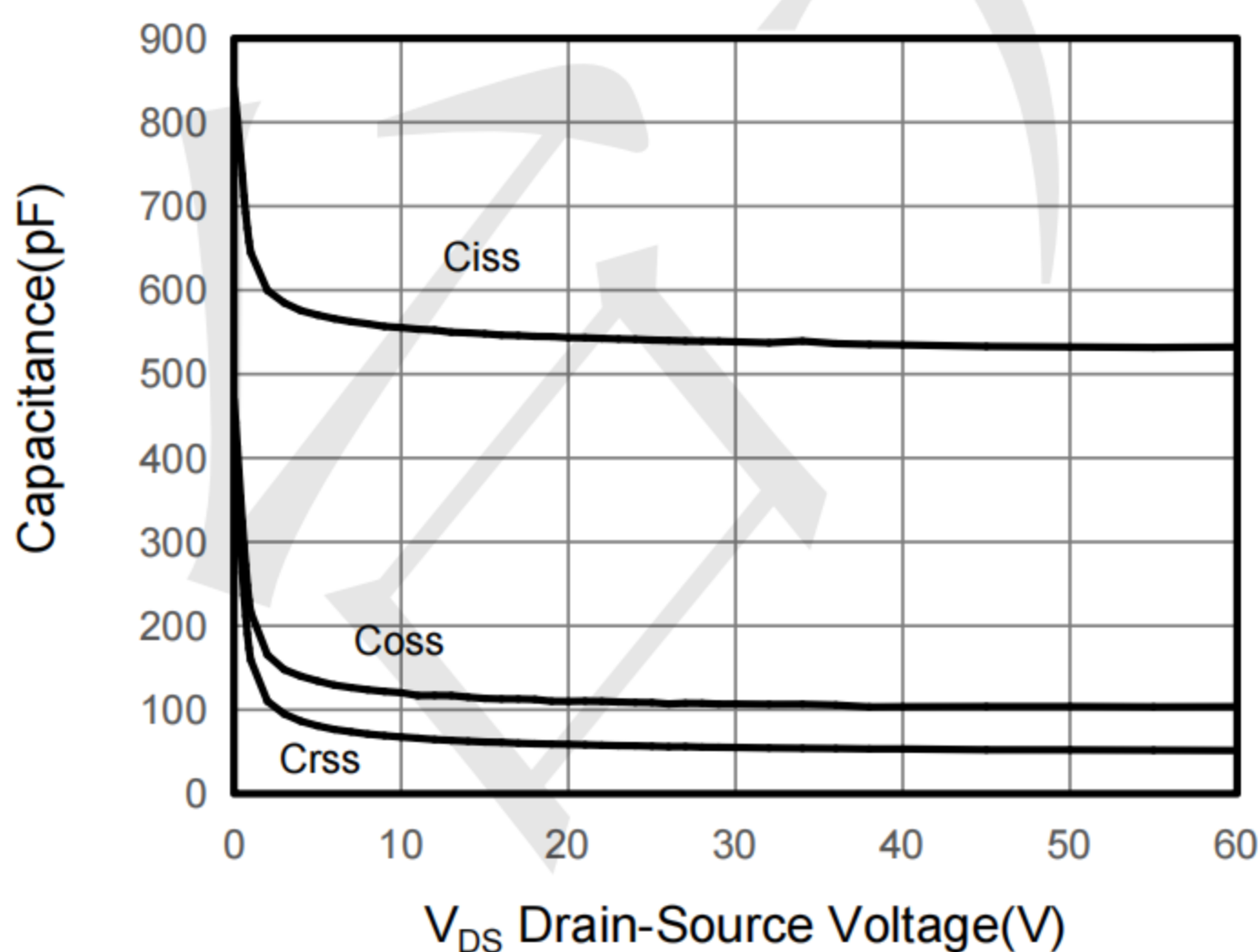


Figure 6. Source-Drain Diode Forward

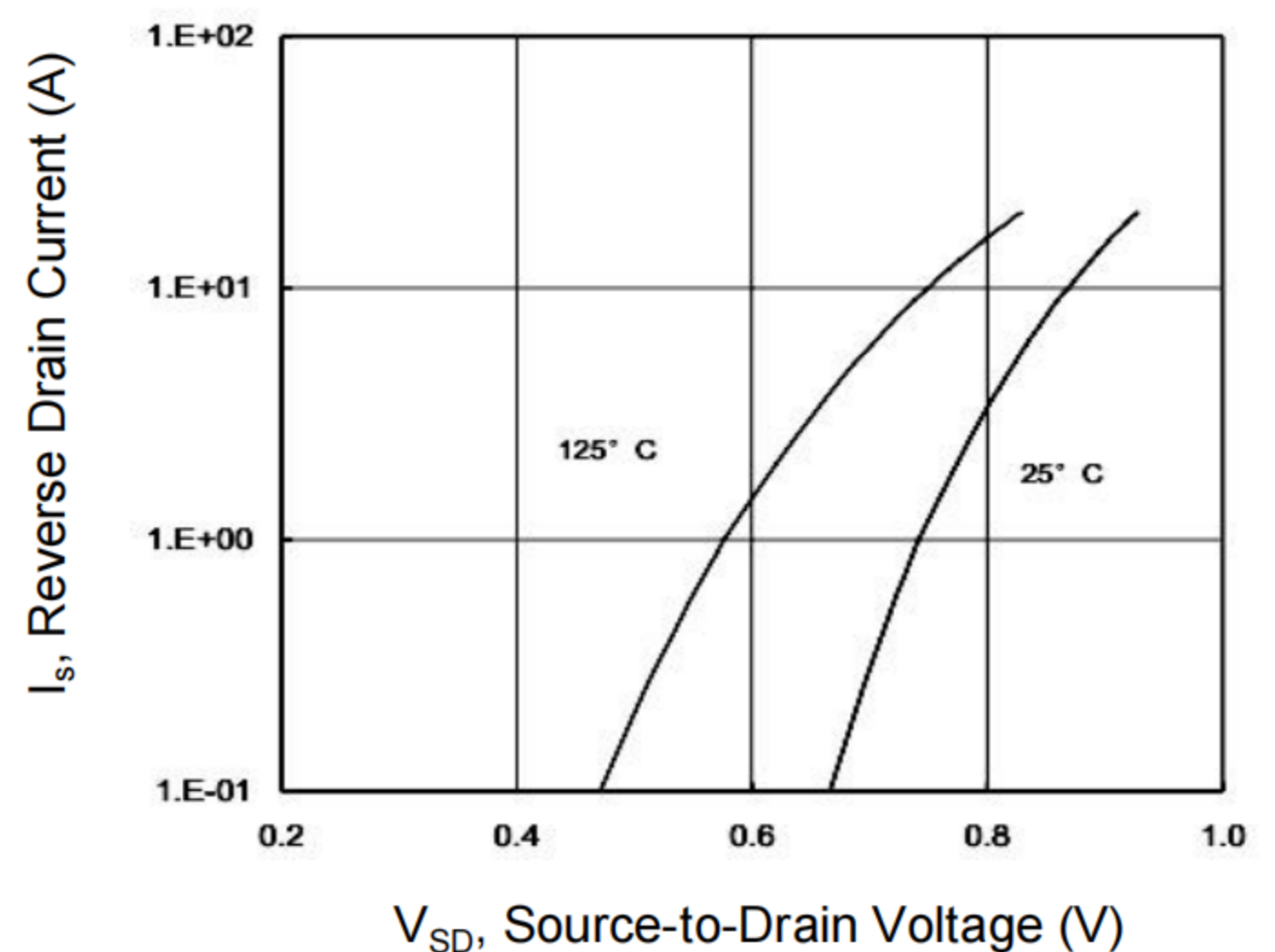






Figure 7. Drain-Source On-Resistance

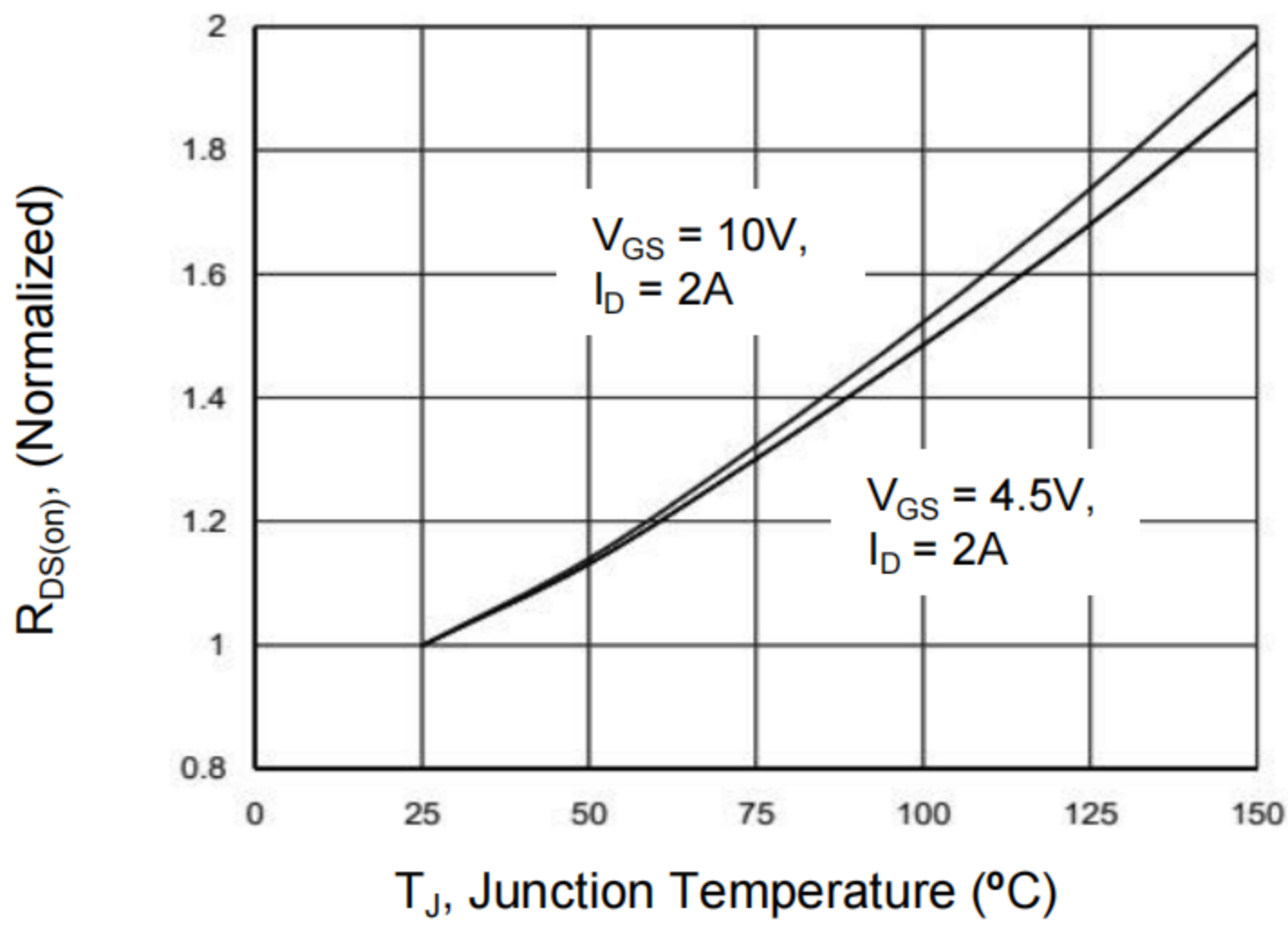


Figure 8. Safe Operation Area

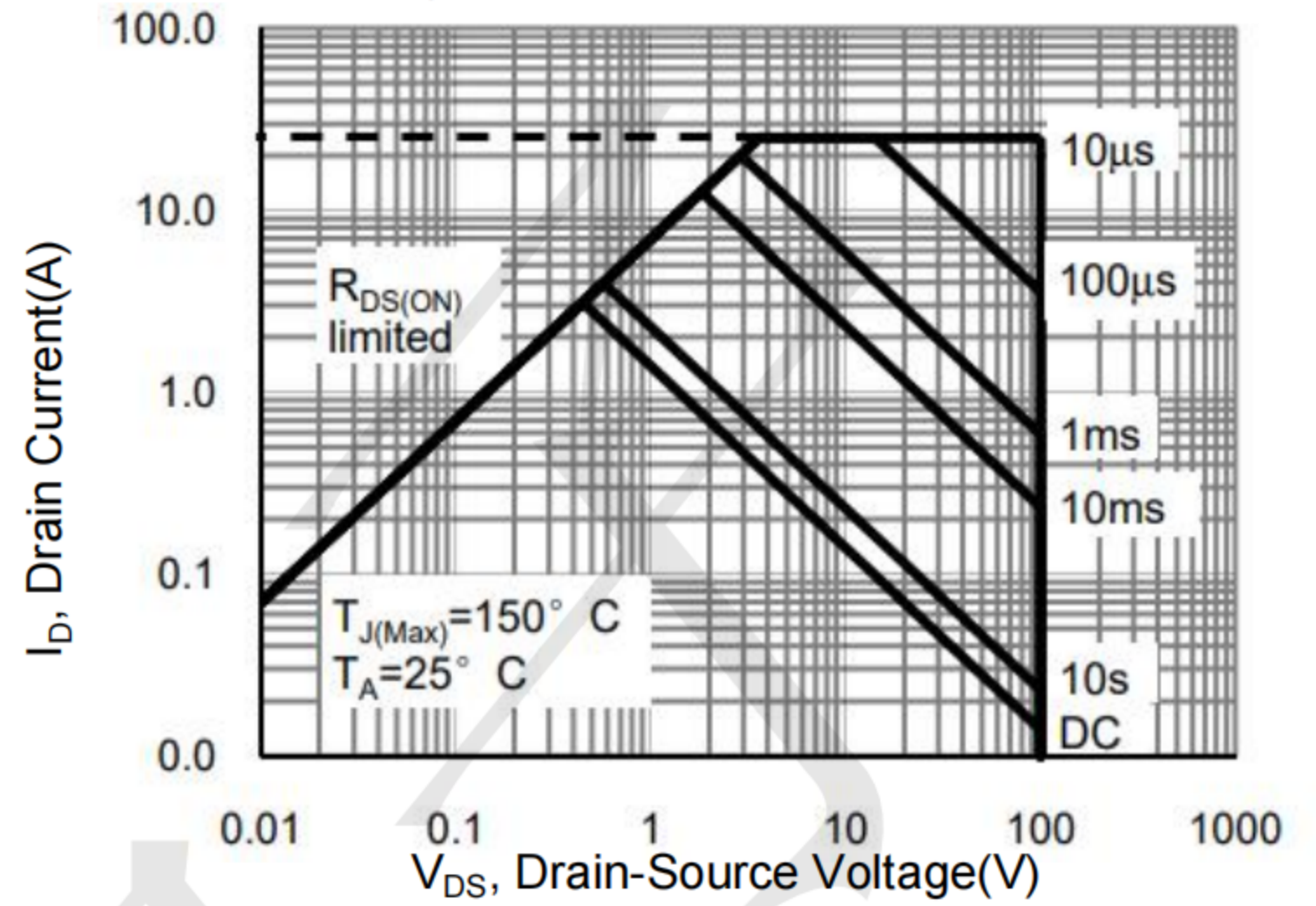
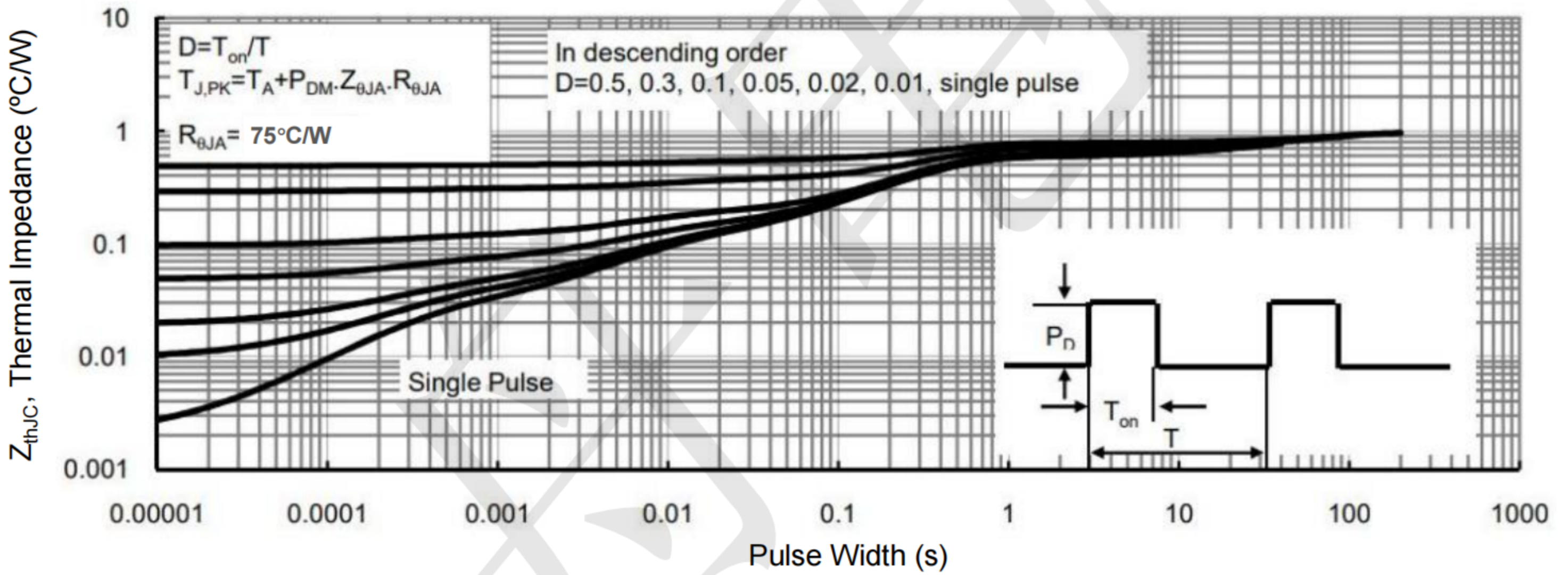
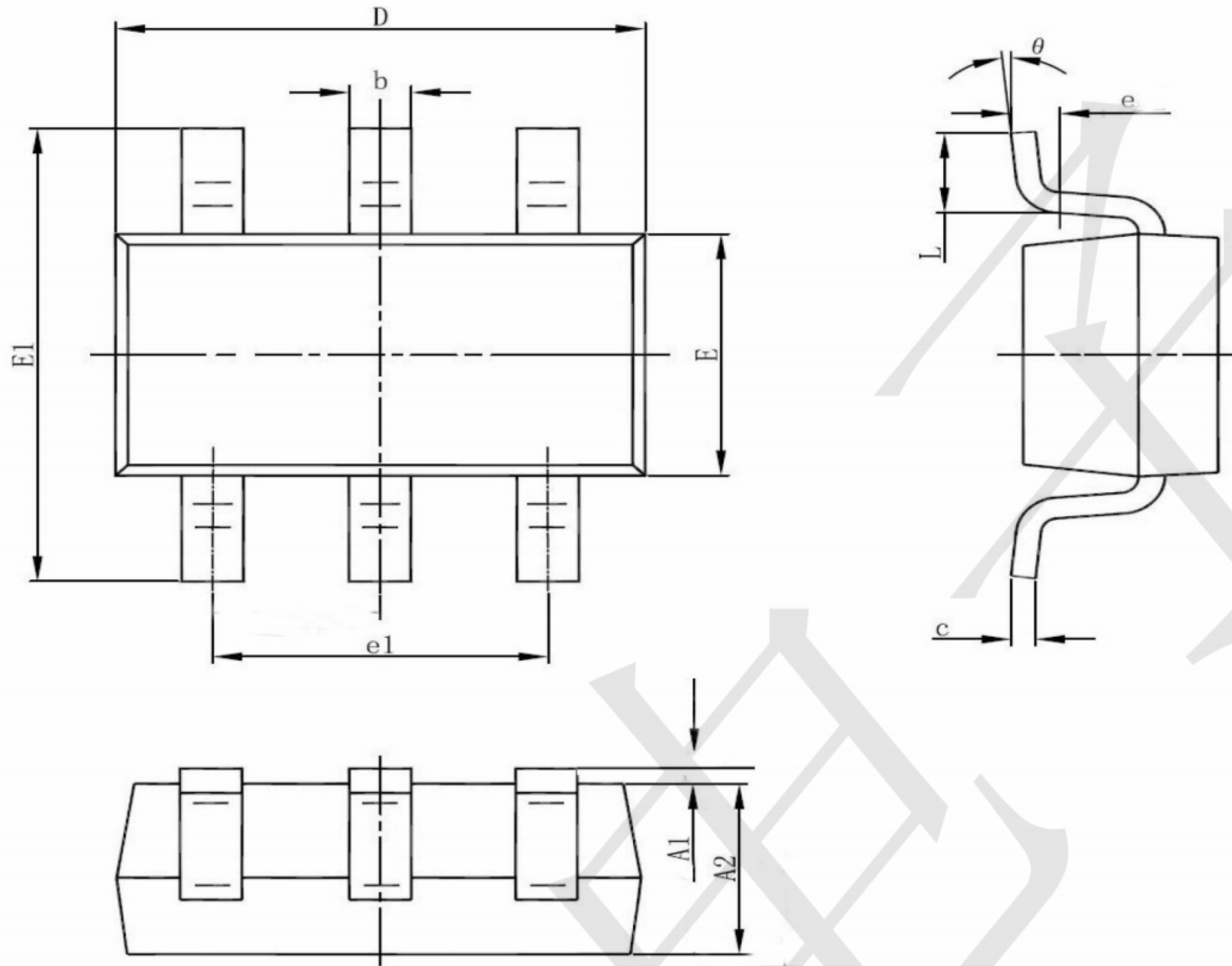


Figure 9. Normalized Maximum Transient Thermal Impedance





**SOT23-6 Package Outline Dimensions**



DIM	MIN	NOM	MAX
A1	0.00	-	0.10
A2	1.00	1.10	1.20
b	0.30	0.40	0.50
c	0.10	0.15	0.20
D	2.80	2.90	3.00
E	1.50	1.60	1.70
E1	2.60	2.80	3.00
e	0.2GAUGE PLANE		
e1	-	1.90	-
L	0.30	0.45	0.60
θ	0°	-	8°
All Dimensions in mm			