

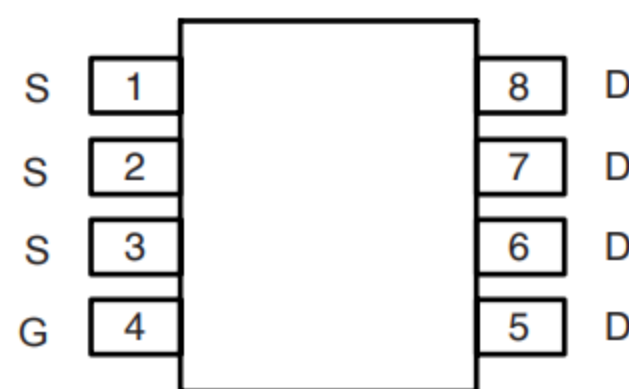
### FEATURES

- $R_{DS(ON)} \leq 5.2m\Omega @ V_{GS} = -10V$
- $R_{DS(ON)} \leq 9.5m\Omega @ V_{GS} = -4V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

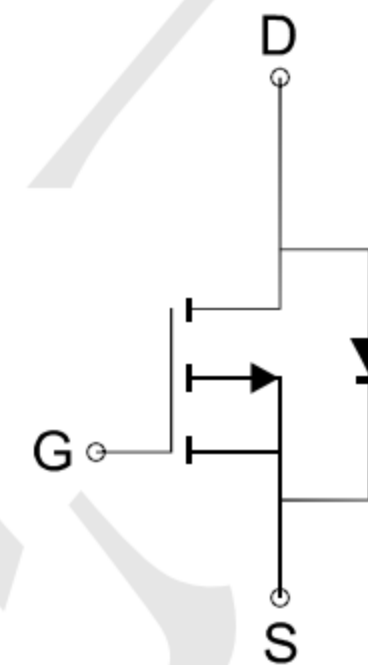
### APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- LCD Display inverter

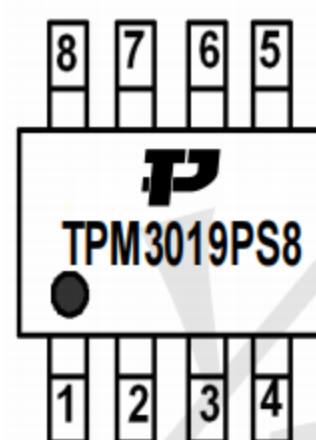
### Package and Pin Configuration



### Circuit diagram



### Marking:



### Absolute Maximum Ratings ( $T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Maximum Ratings	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	$T_A = 25^\circ C$	-18.5
		$T_A = 70^\circ C$	-13.9
Pulsed Drain Current	$I_{DM}$	-69	A
Maximum Power Dissipation*	$P_D$	$T_A = 25^\circ C$	2.5
		$T_A = 70^\circ C$	1.6
Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^\circ C$
Thermal Resistance-Junction to Ambient*	$R_{\theta JA}$	50	$^\circ C/W$

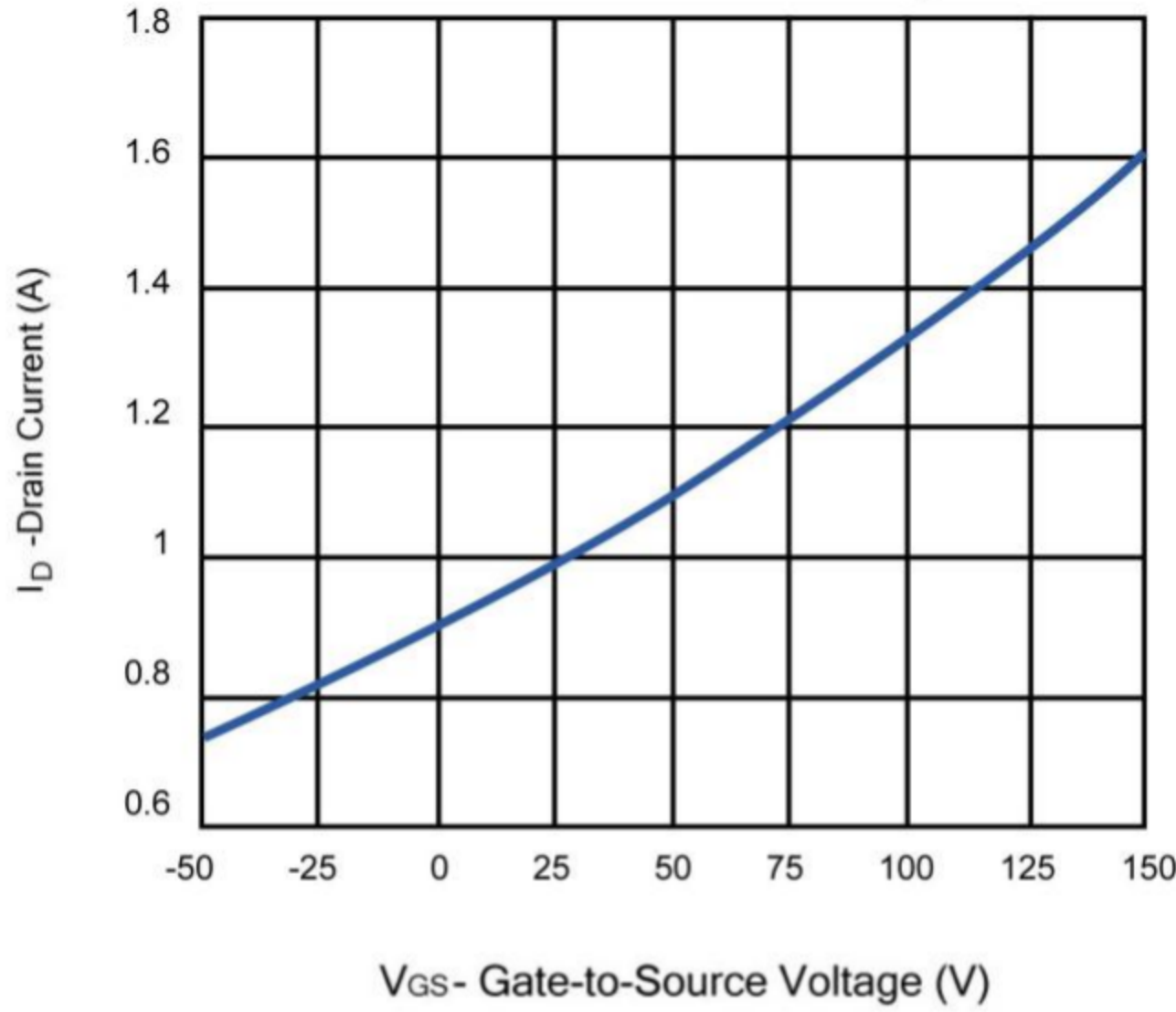
**Electrical Characteristics (T<sub>j</sub>=25°C unless otherwise noted)**

Symbol	Parameter	Limit	Min	Typ	Max	Unit
<b>STATIC</b>						
V <sub>BR(DSS)</sub>	Drain-source breakdown voltage	I <sub>D</sub> =-10mA, V <sub>GS</sub> =0V	-30			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> = V <sub>DS</sub> , I <sub>D</sub> =-250 μA	-1		-3.0	V
I <sub>GSS</sub>	Gate Leakage Current	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance <sup>a</sup>	V <sub>GS</sub> =-10V, I <sub>D</sub> = -9A		4	5.2	mΩ
		V <sub>GS</sub> =-4V, I <sub>D</sub> = -9A		7	9.5	
V <sub>SD</sub>	Diode Forward Voltage	I <sub>D</sub> =-18A, V <sub>GS</sub> =0V		-0.8		V
<b>DYNAMIC</b>						
Q <sub>g</sub>	Total Gate Charge	V <sub>DD</sub> =-24V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-18A		146		nC
Q <sub>g</sub>	Total Gate Charge			78		
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DD</sub> =-24V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-18A		24		
Q <sub>gd</sub>	Gate-Drain Charge			40		
C <sub>iss</sub>	Input capacitance	V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, f=1MHz		6150		pF
C <sub>oss</sub>	Output Capacitance			950		
C <sub>rss</sub>	Reverse Transfer Capacitance			327		
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =-15V, R <sub>L</sub> =15Ω V <sub>GS</sub> =-10V, R <sub>G</sub> =4.7Ω		75		ns
t <sub>r</sub>	Turn-On Rise Time			32		
t <sub>d(off)</sub>	Turn-Off Delay Time			280		
t <sub>f</sub>	Turn-Off Fall Time			88		

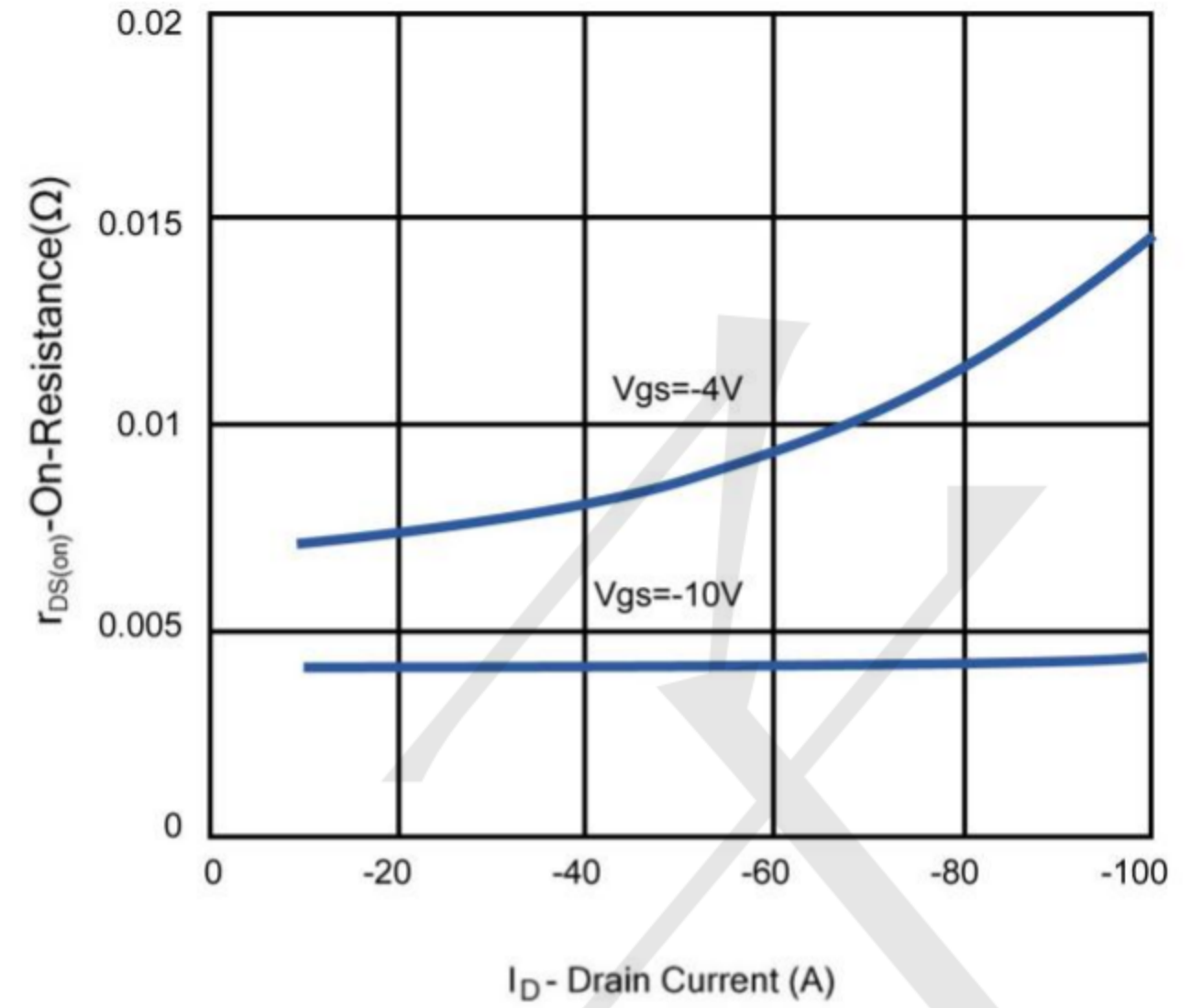


**Typical Electrical and Thermal Characteristics**

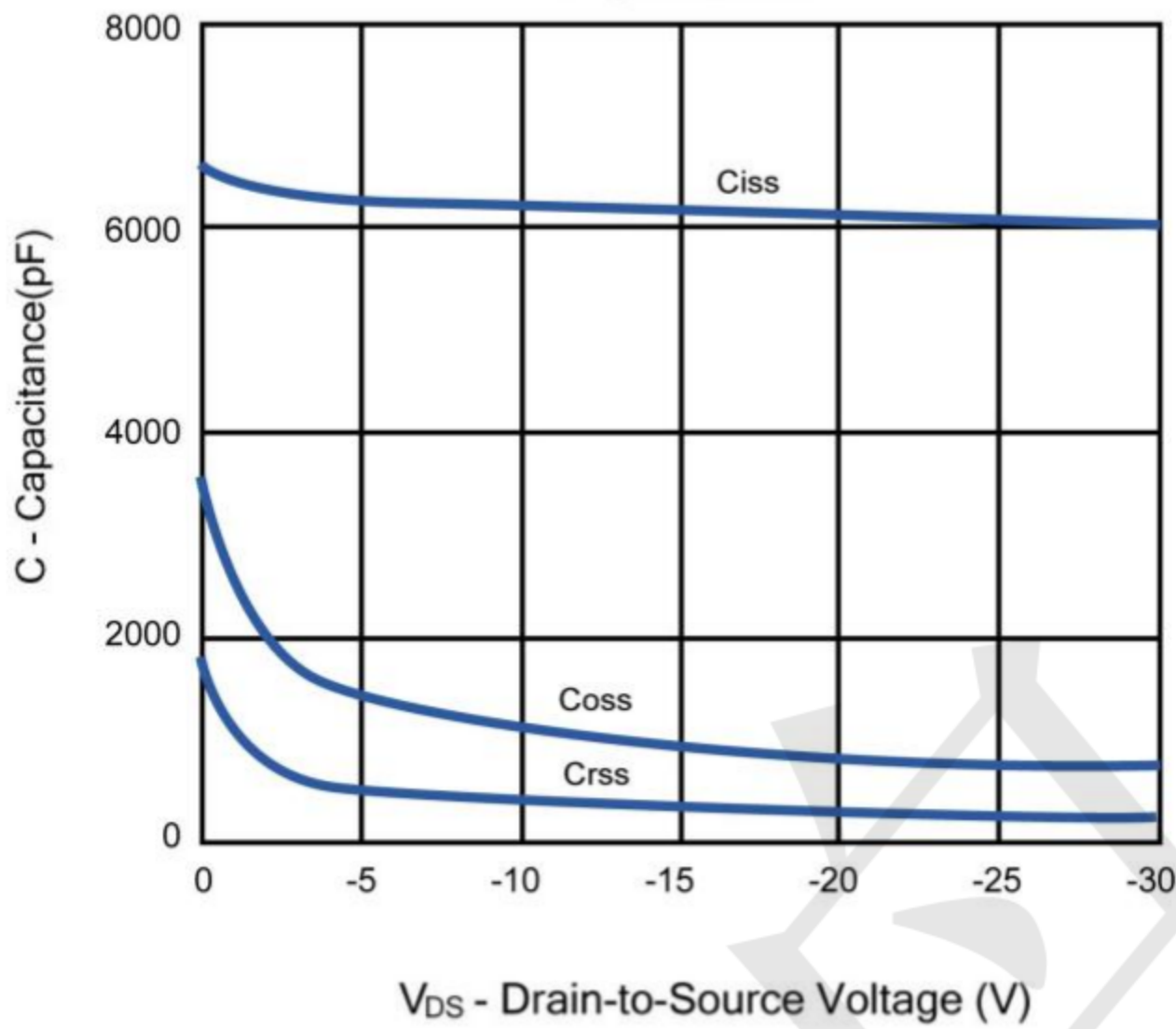
On Resistance vs. Junction Temperature



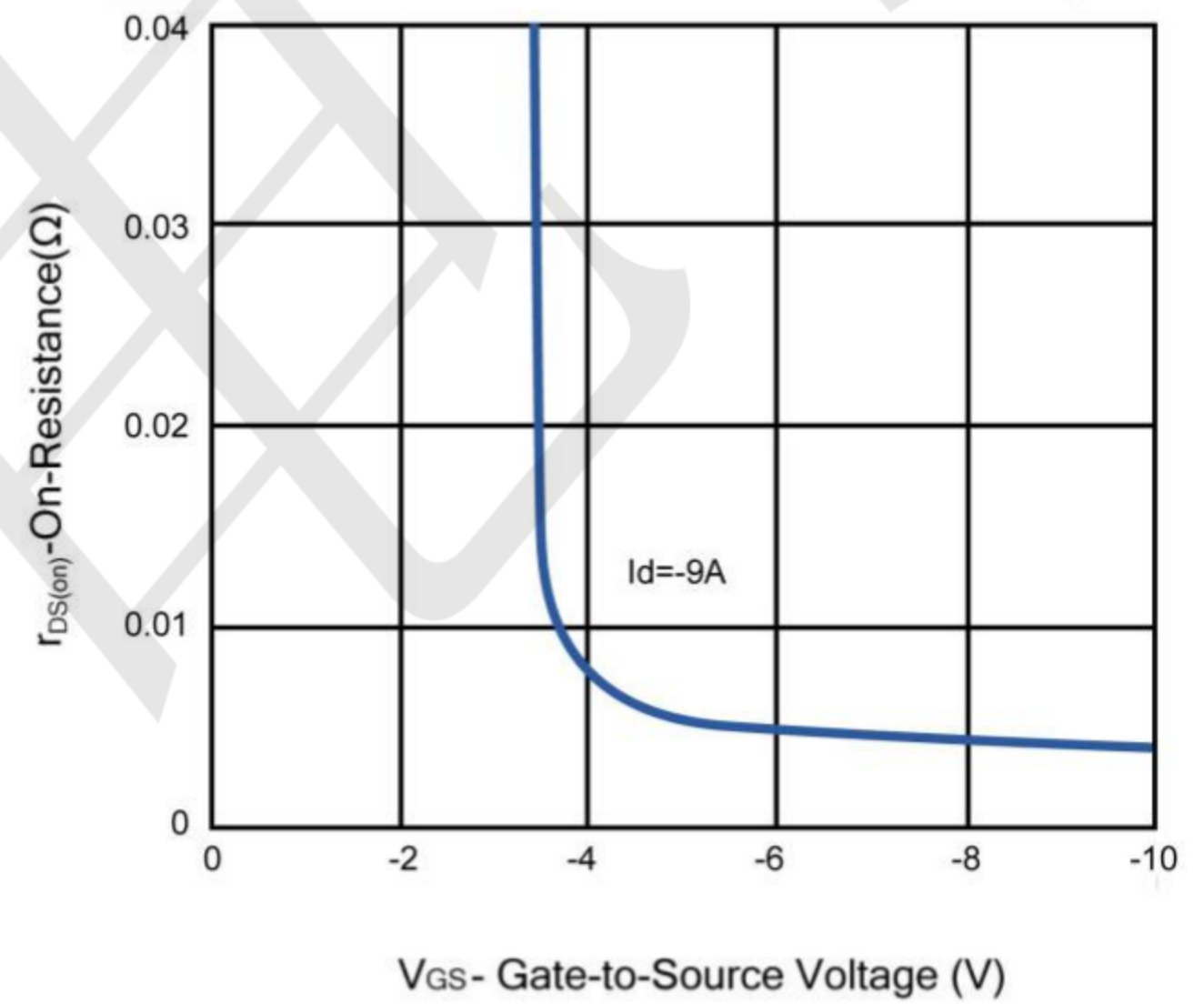
On-Resistance vs. Drain Current



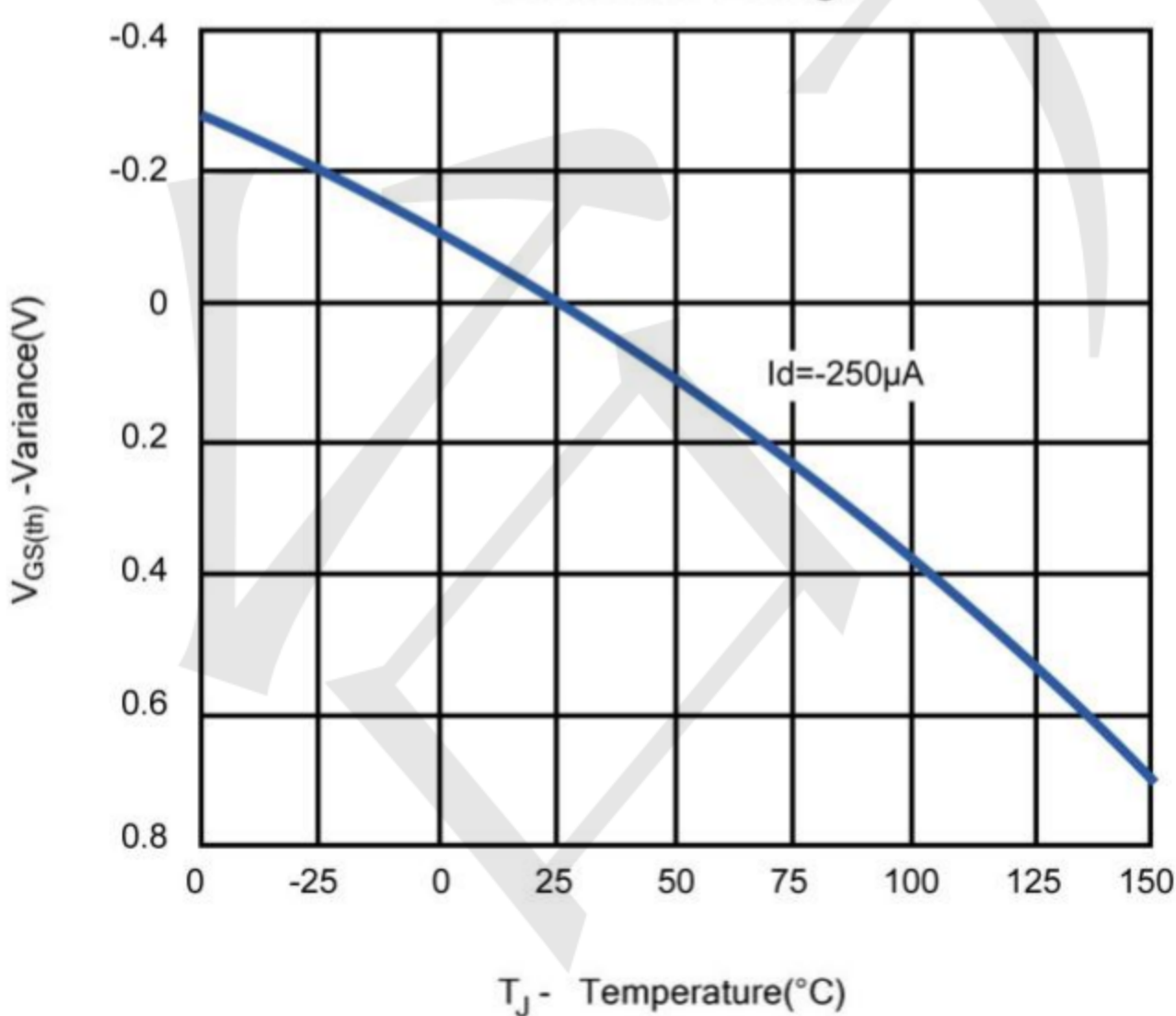
Capacitance



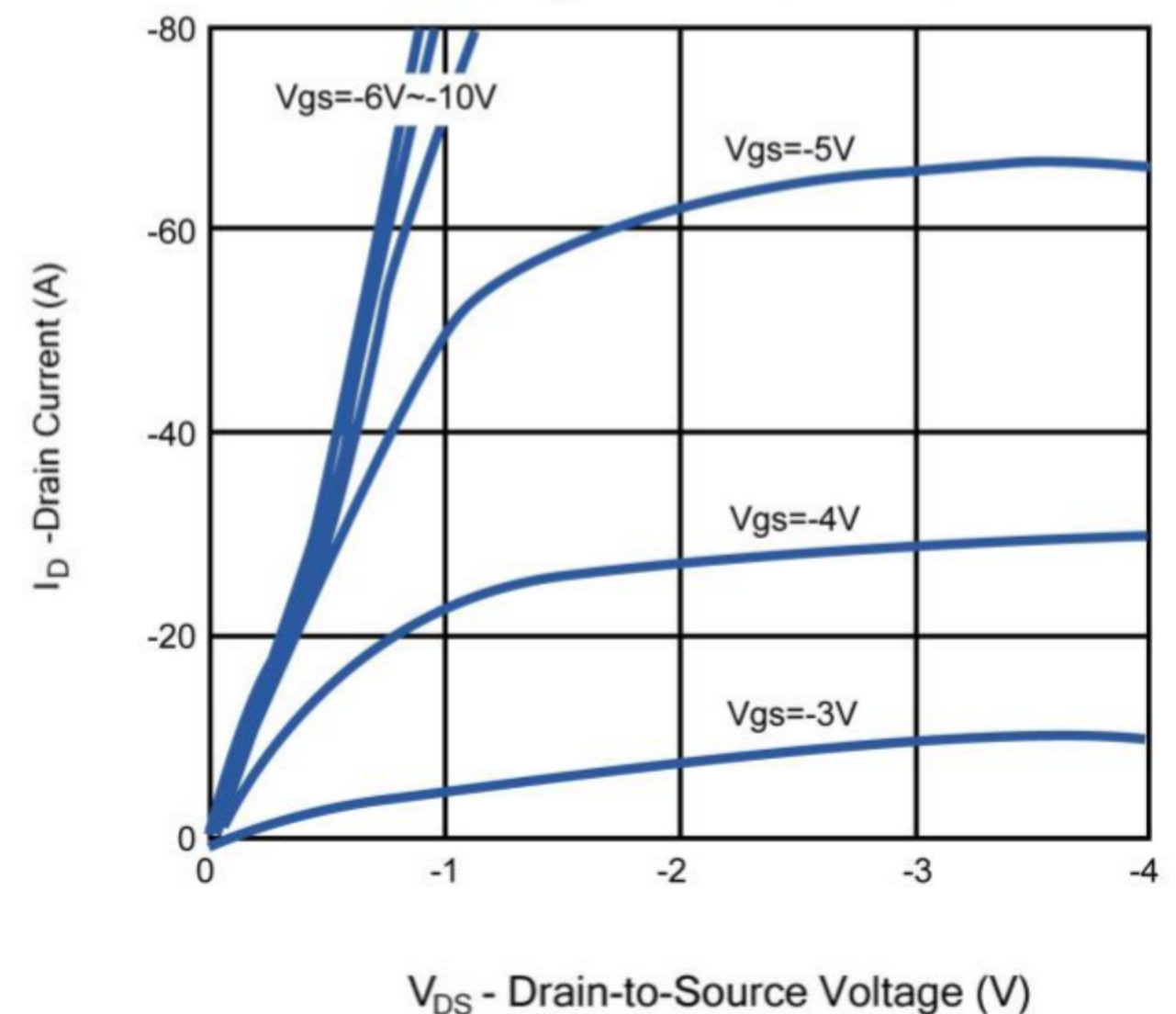
On-Resistance vs. Gate-to-Source Voltage



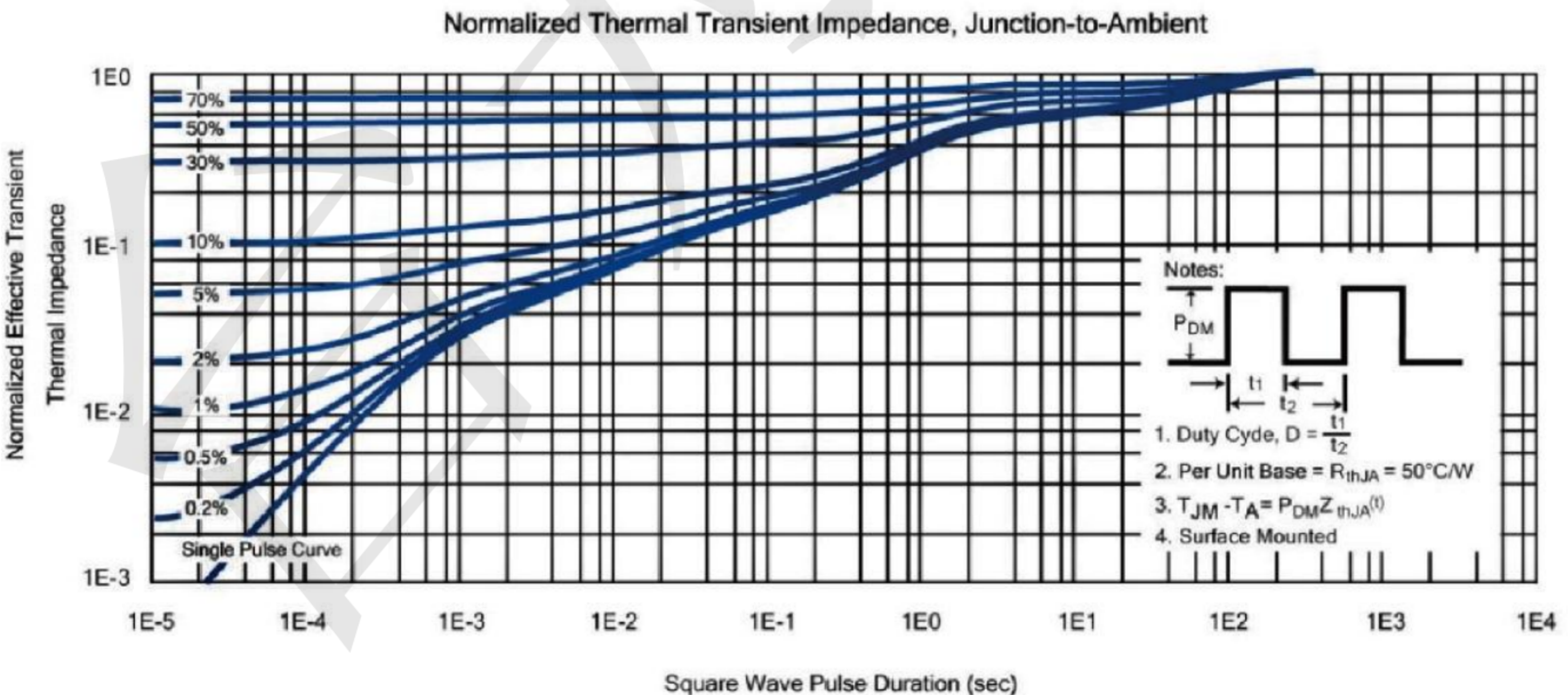
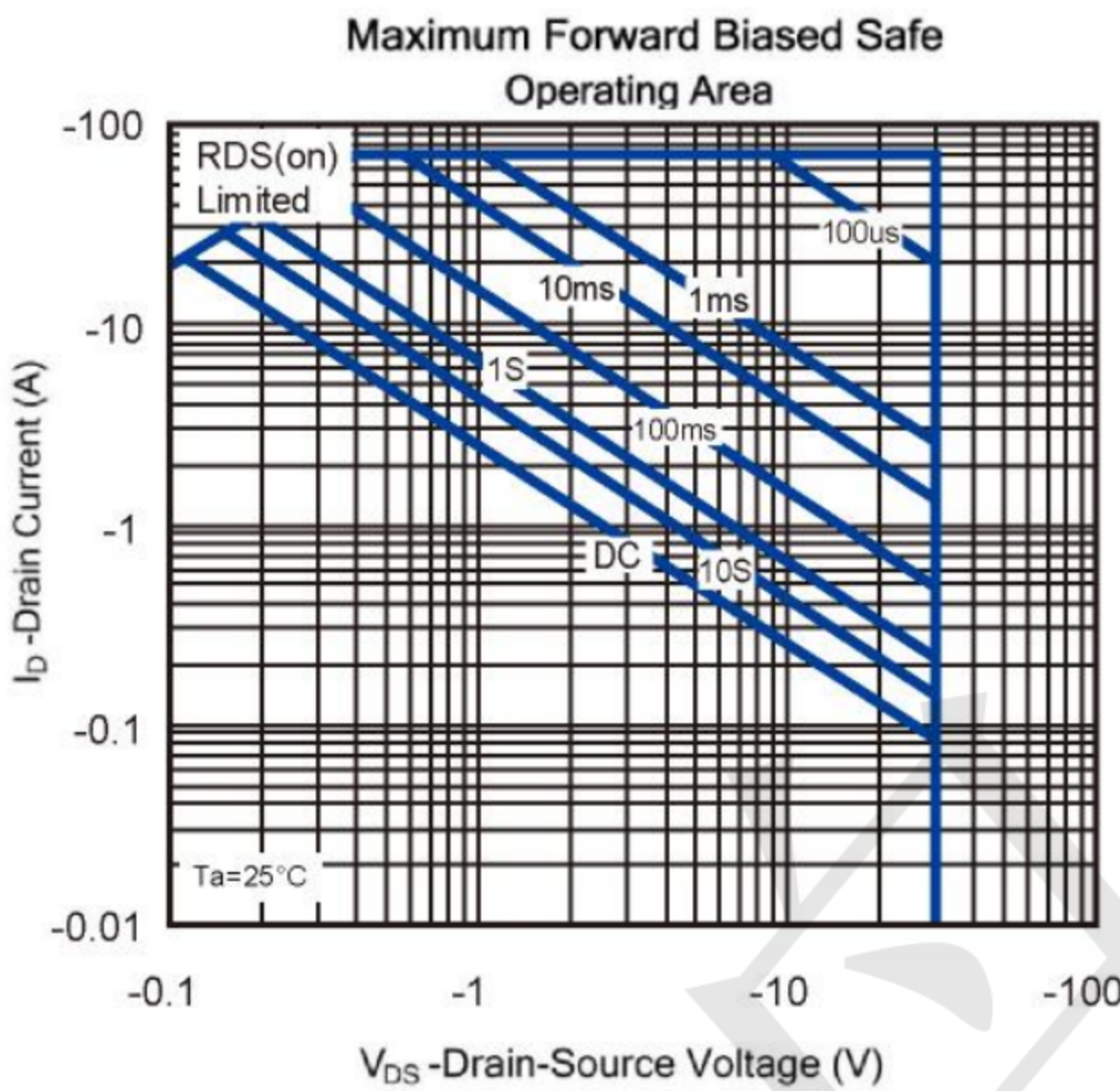
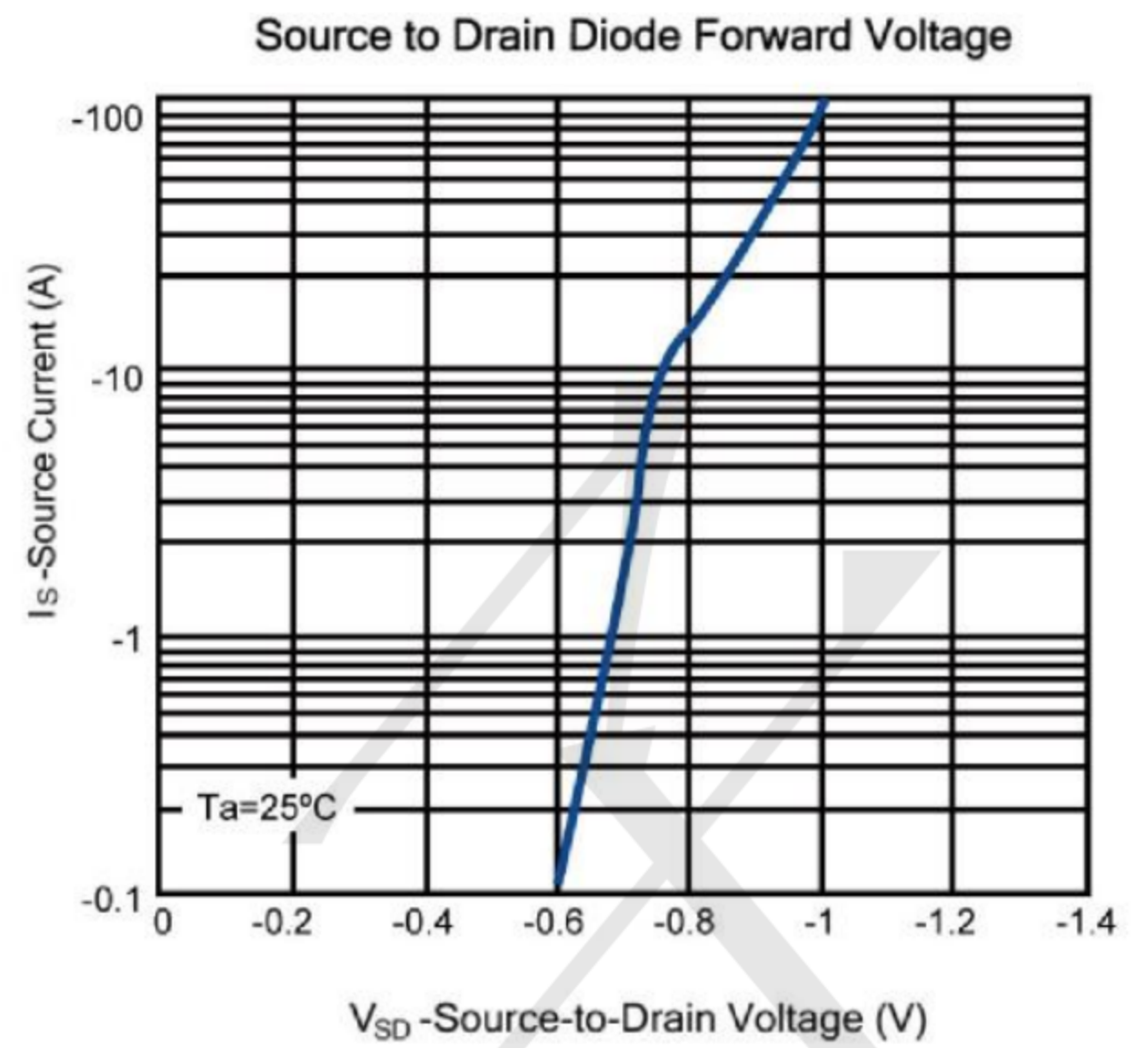
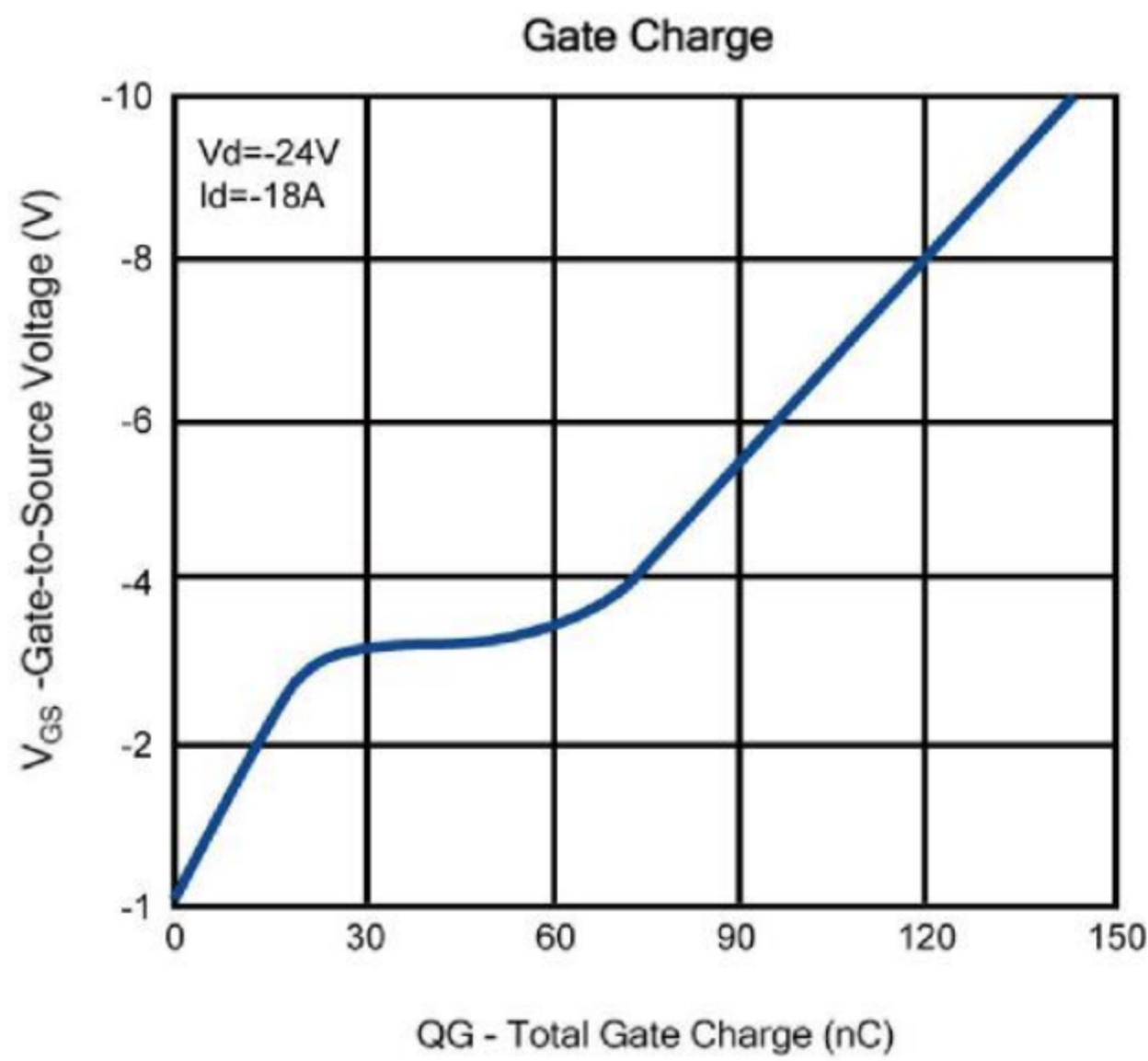
Threshold Voltage



On-Region Characteristics

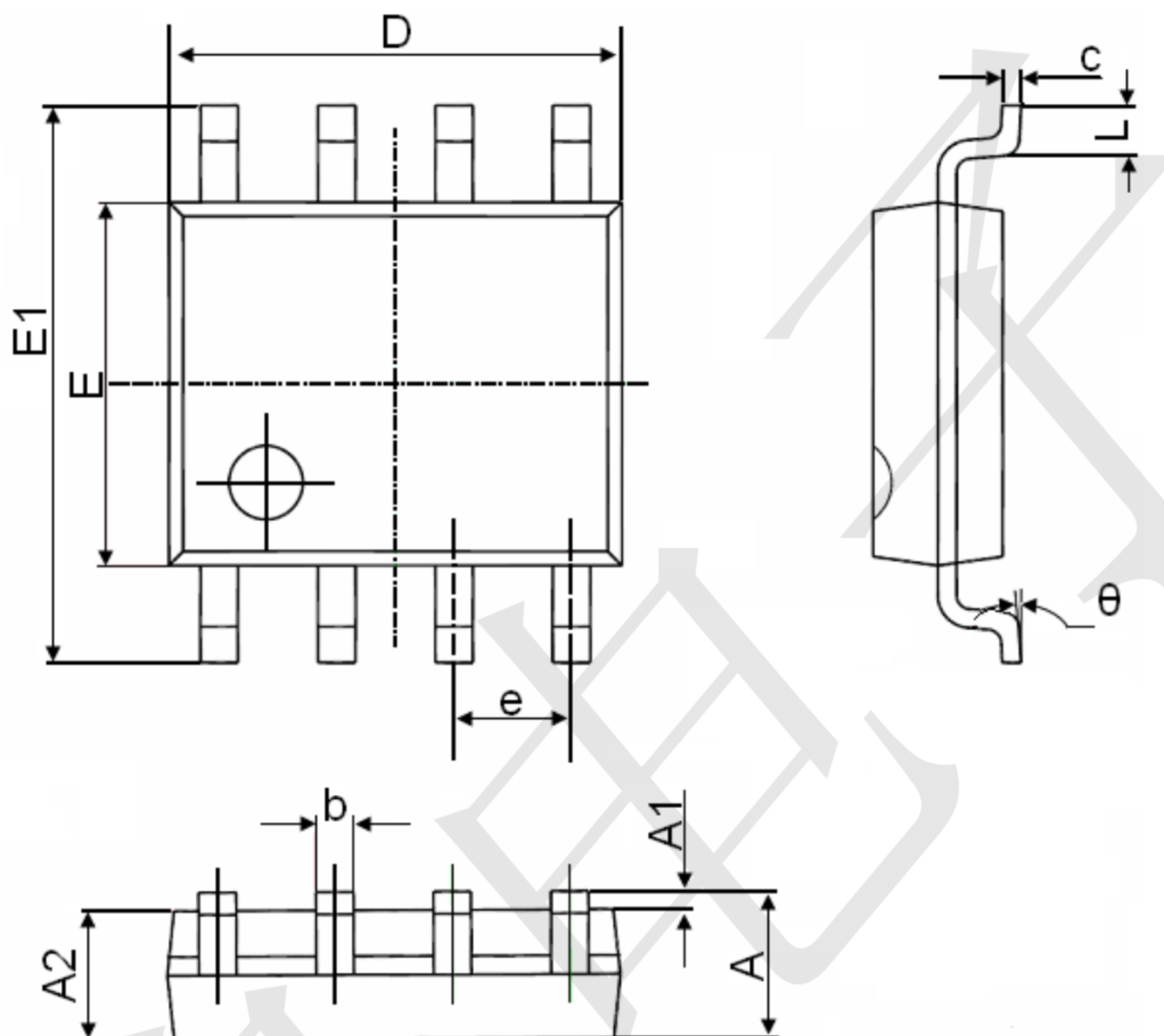








**SOP-8 Package Information**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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