

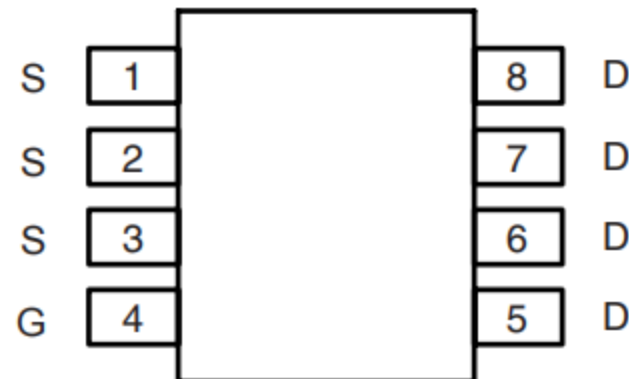
FEATURES

- 30V/-17.5A,
 $R_{DS(ON)} = 6.8m\Omega(\text{max.}) @ V_{GS} = -10V$
 $R_{DS(ON)} = 13m\Omega(\text{max.}) @ V_{GS} = -4.5V$

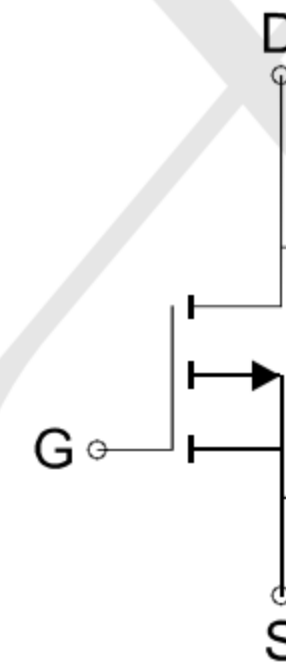
APPLICATIONS

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

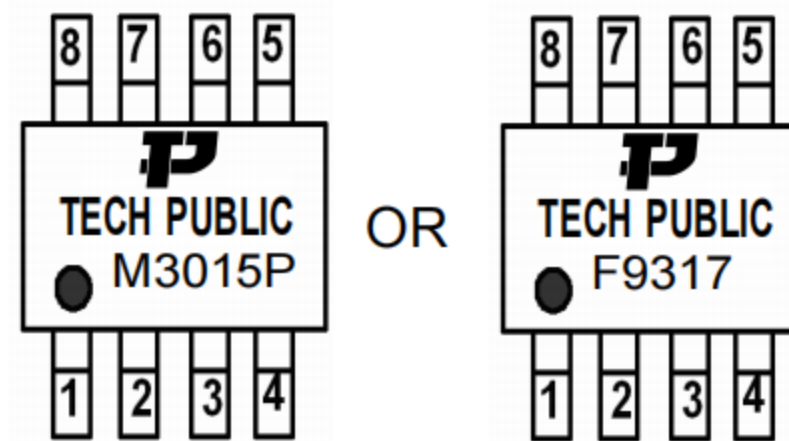
Package and Pin Configuration



Circuit diagram



Marking:



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

Symbol	Parameter	Rating	Unit	
V_{DSS}	Drain-Source Voltage	-30	V	
V_{GSS}	Gate-Source Voltage	± 25		
I_D^a	Continuous Drain Current ($V_{GS}=-10V$)	$T_A=25^\circ\text{C}$	-17.5	
		$T_A=70^\circ\text{C}$	-14	
I_{DM}^a	Pulsed Drain Current ($V_{GS}=-10V$)	-70	A	
I_S^a	Diode Continuous Forward Current	-4		
I_{AS}^b	Avalanche Current, Single pulse	$L=0.1\text{mH}$		-42
E_{AS}^b	Avalanche Energy, Single pulse	$L=0.1\text{mH}$	88	mJ
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range	-55 to 150		
P_D^a	Maximum Power Dissipation	$T_A=25^\circ\text{C}$	3.1	W
		$T_A=70^\circ\text{C}$	2	
$R_{\theta JA}^{a,c}$	Thermal Resistance-Junction to Ambient	$t \leq 10\text{s}$	40	$^\circ\text{C/W}$
		Steady State	75	
$R_{\theta JL}$	Thermal Resistance-Junction to Lead	Steady State	24	

Electrical Characteristics (T_j=25°C unless otherwise noted)

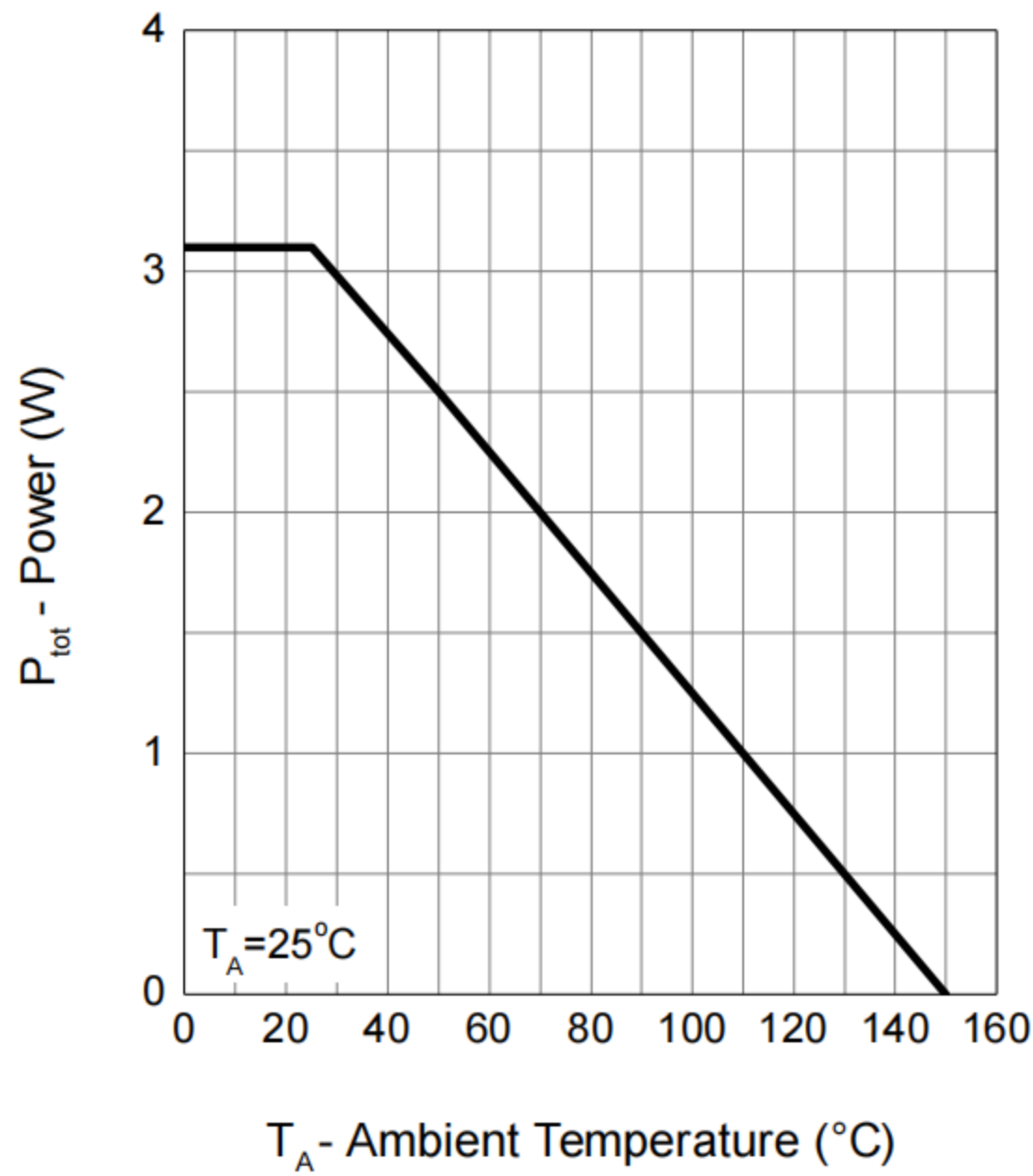
Symbol	Parameter	Test Conditions	TECH PUBLIC			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-24V, V _{GS} =0V T _j =85°C	-	-	-1	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250μA	-1.3	-1.8	-2.3	V
I _{GSS}	Gate Leakage Current	V _{GS} =±25V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^d	Drain-Source On-state Resistance	V _{GS} =-10V, I _{DS} =-17.5A V _{GS} =-4.5V, I _{DS} =-10A	-	5.7	6.8	mΩ
Diode Characteristics						
V _{SD} ^d	Diode Forward Voltage	I _{SD} =-1A, V _{GS} =0V	-	-0.7	-1	V
t _{rr} ^e	Reverse Recovery Time	I _{SD} =-17.5A, di _{SD} /dt=100A/μs	-	30	-	ns
Q _{rr} ^e	Reverse Recovery Charge		-	20	-	nC

Electrical Characteristics (Cont.) (T_j=25°C unless otherwise noted)

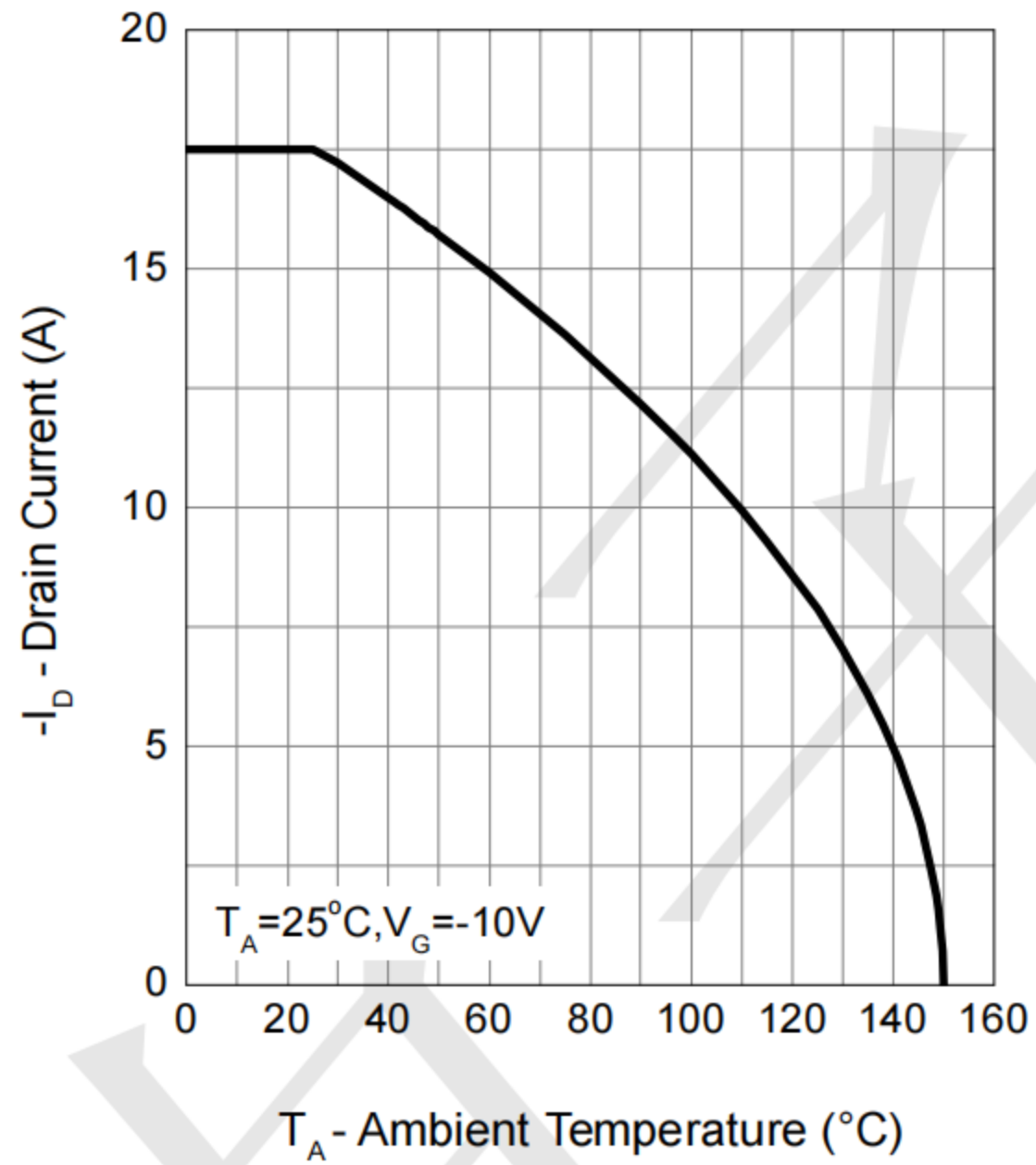
Symbol	Parameter	Test Conditions	TECH PUBLIC			Unit
			Min.	Typ.	Max.	
Dynamic Characteristics^e						
R _g	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	2	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-15V, Frequency=1.0MHz	-	3200	-	pF
C _{oss}	Output Capacitance		-	640	-	
C _{rss}	Reverse Transfer Capacitance		-	600	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-15V, R _L =15Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	15	-	ns
t _r	Turn-on Rise Time		-	19	-	
t _{d(OFF)}	Turn-off Delay Time		-	88	-	
t _f	Turn-off Fall Time		-	62	-	
Gate Charge Characteristics^e						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-10V, I _{DS} =-17.5A	-	70	-	nC
Q _{gs}	Gate-Source Charge		-	10	-	
Q _{gd}	Gate-Drain Charge		-	18	-	

Typical Electrical and Thermal Characteristics

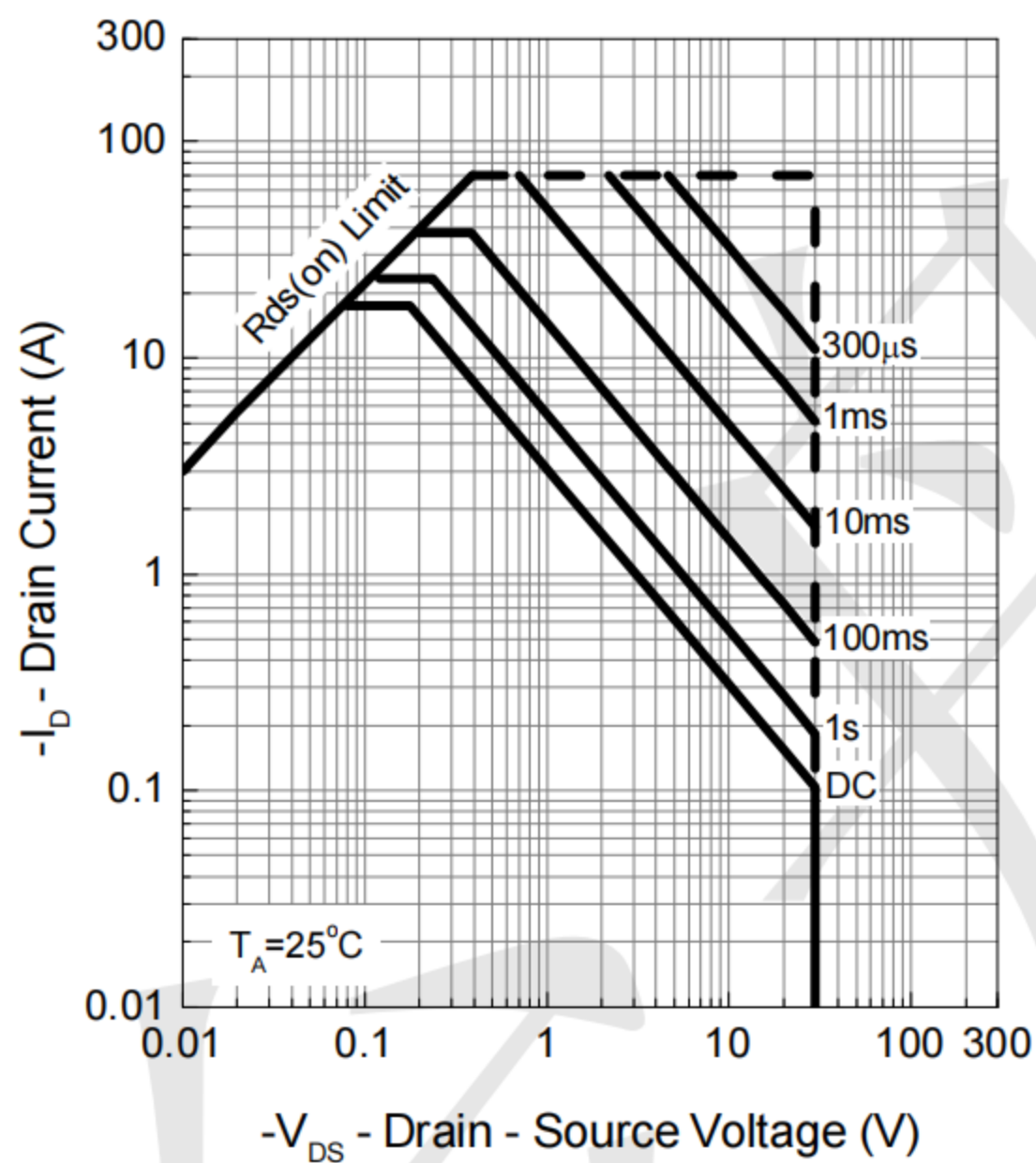
Power Dissipation



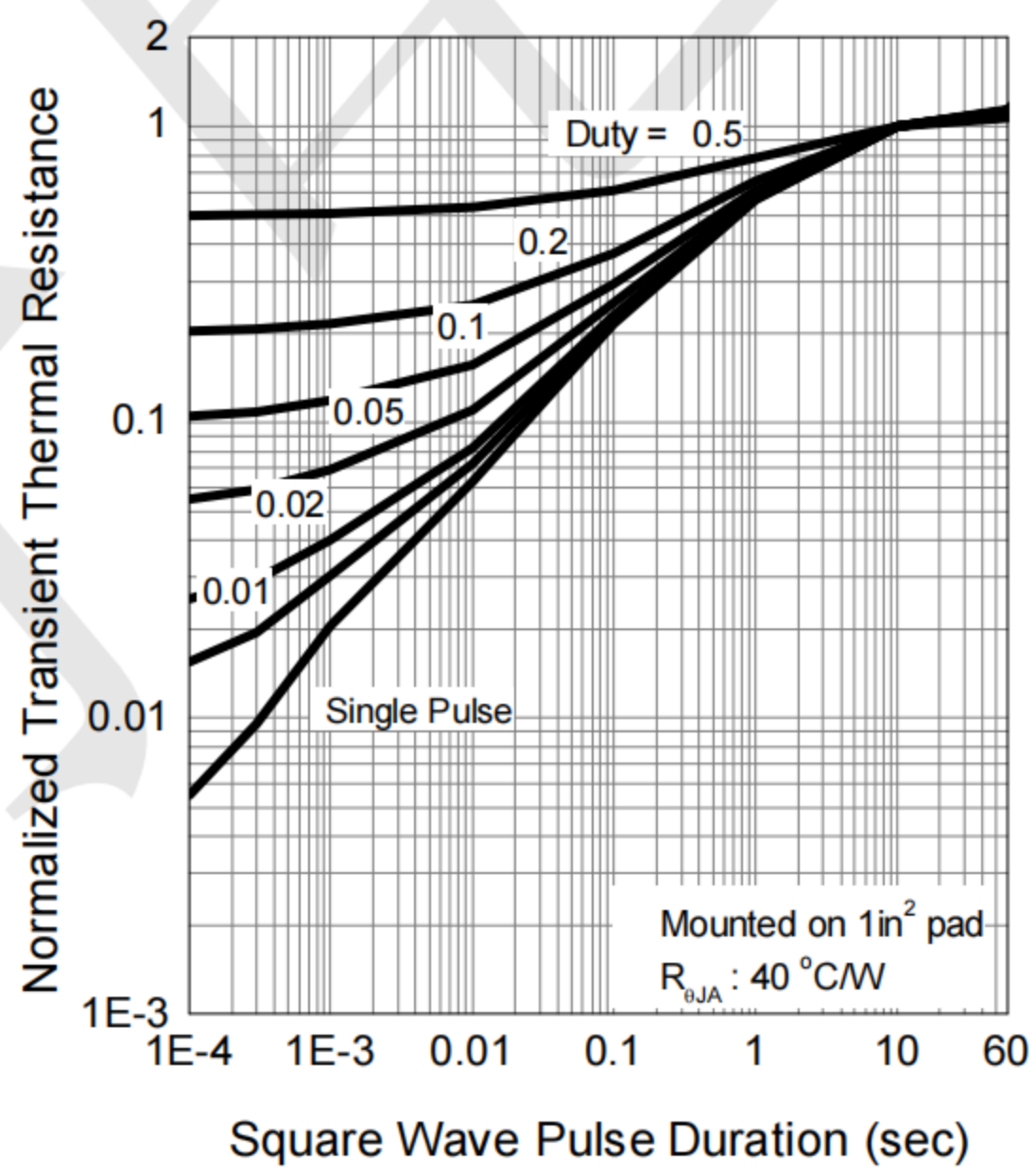
Drain Current



Safe Operation Area

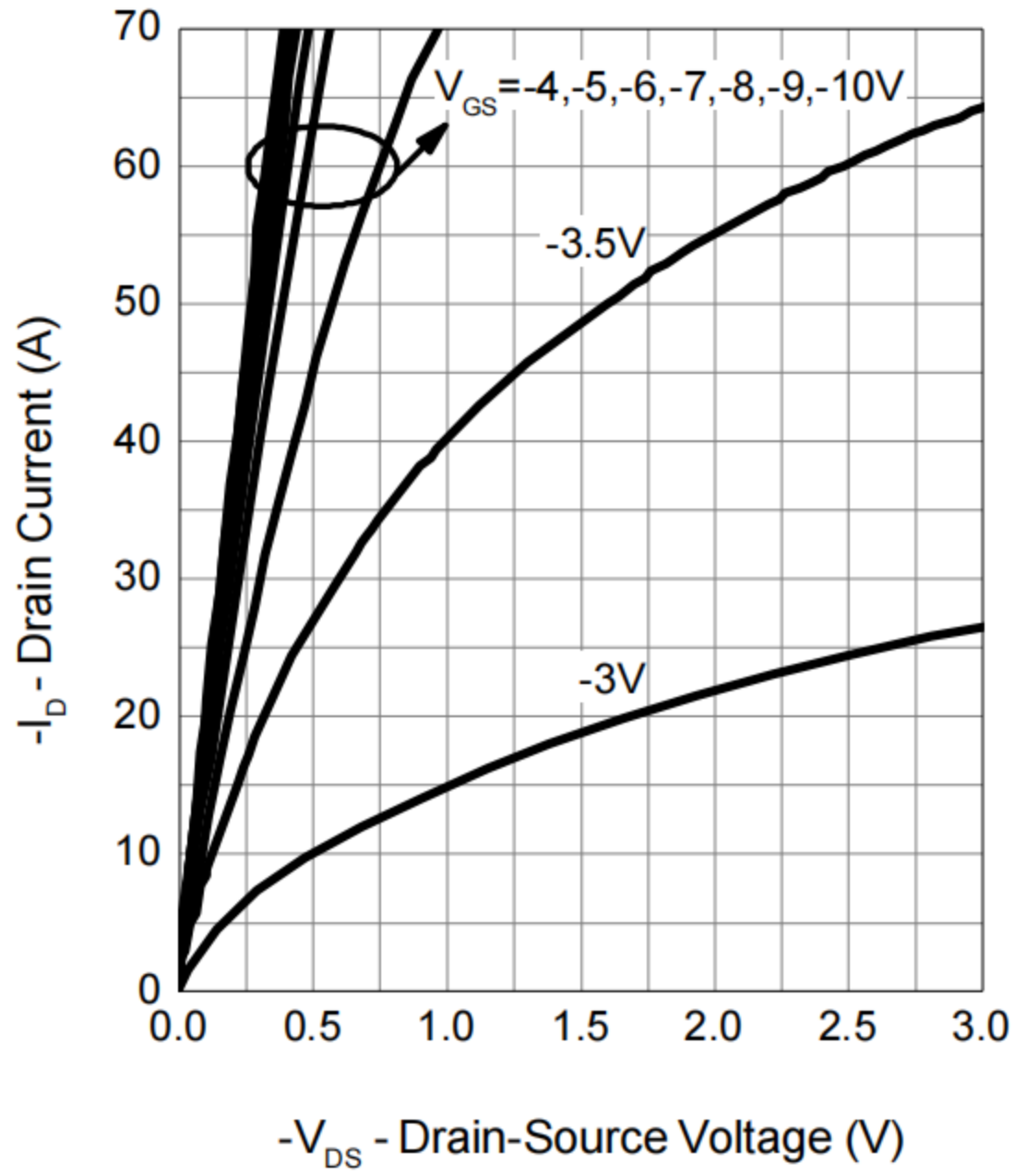


Thermal Transient Impedance

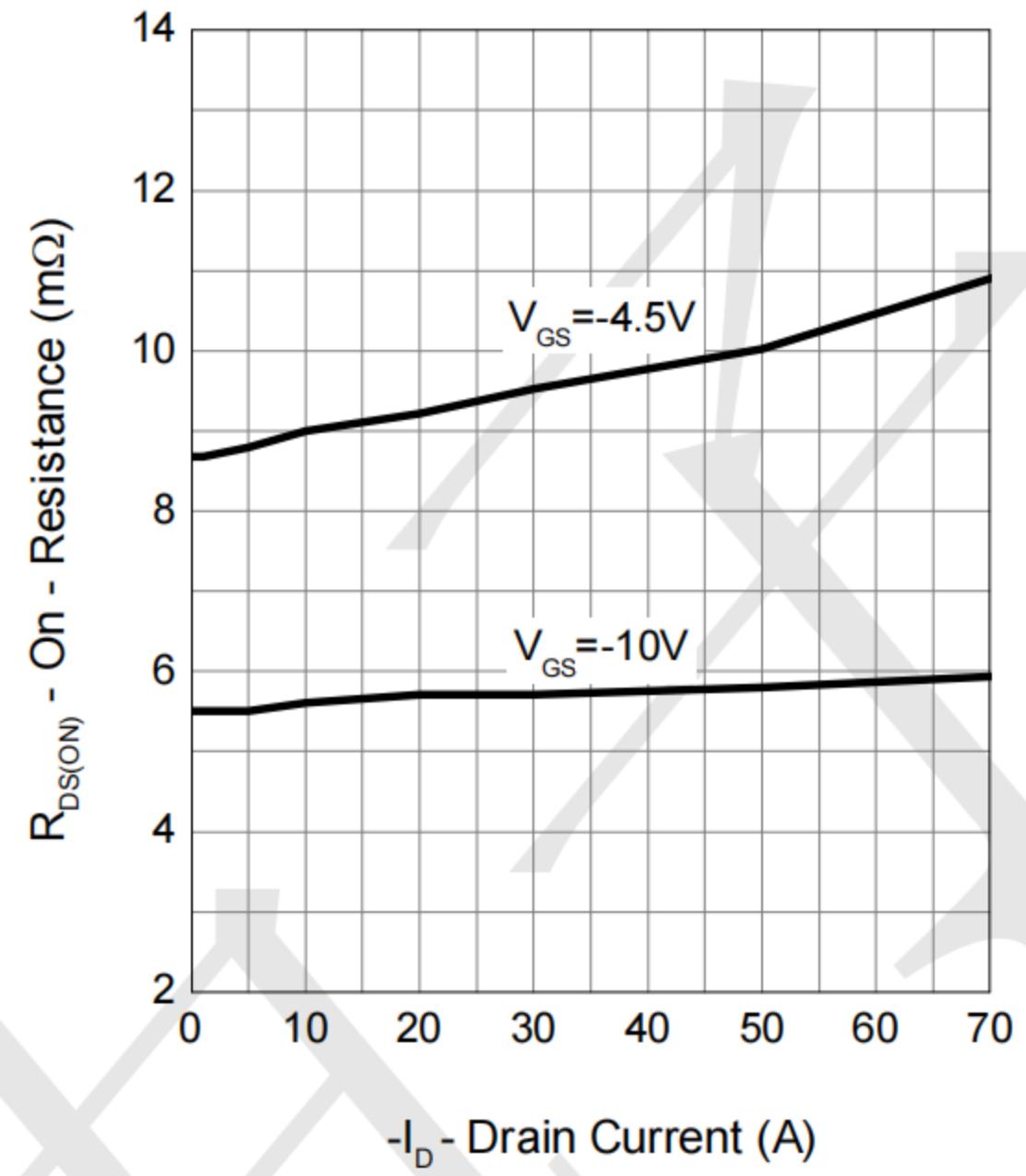


Typical Electrical and Thermal Characteristics (Cont.)

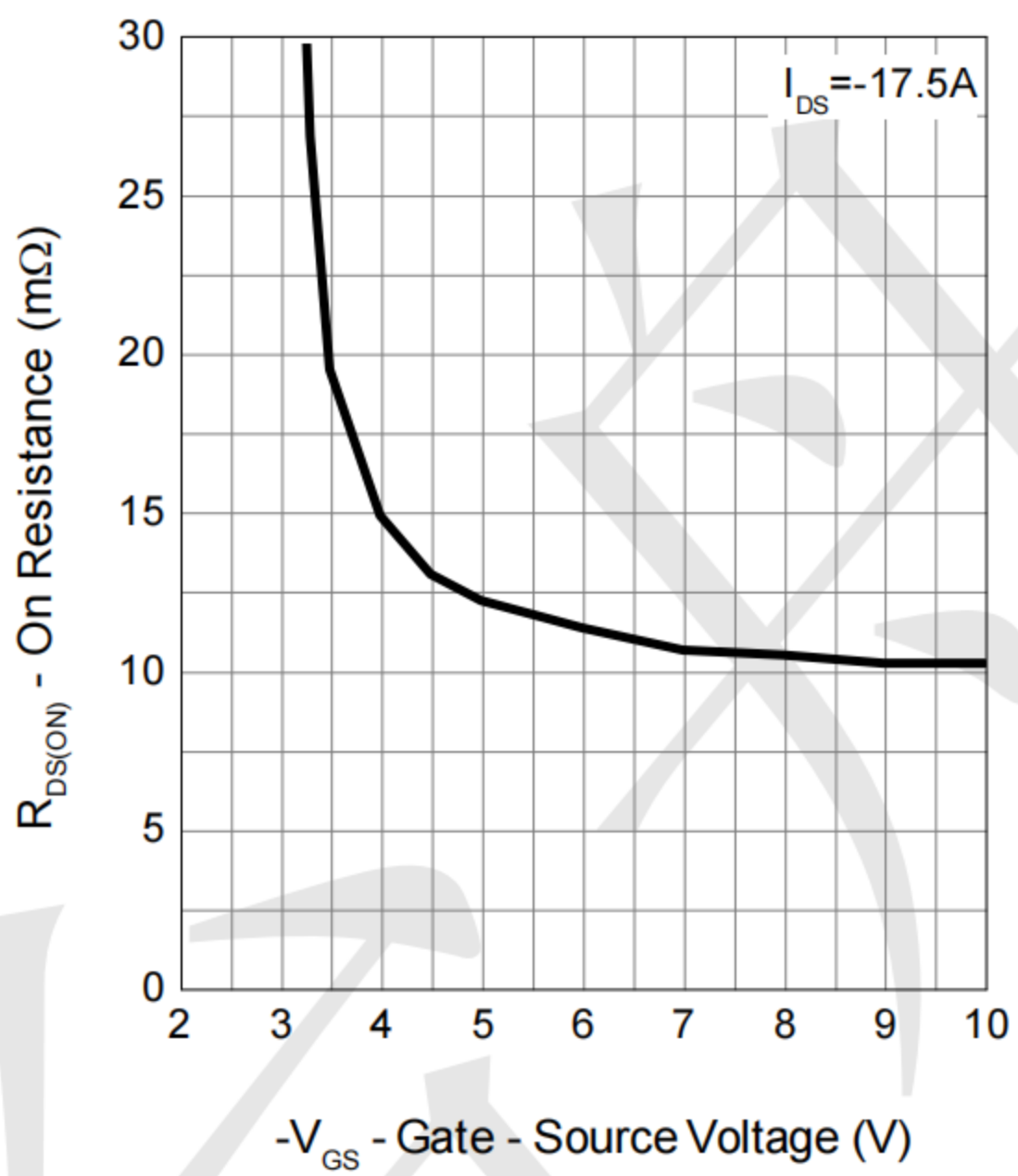
Output Characteristics



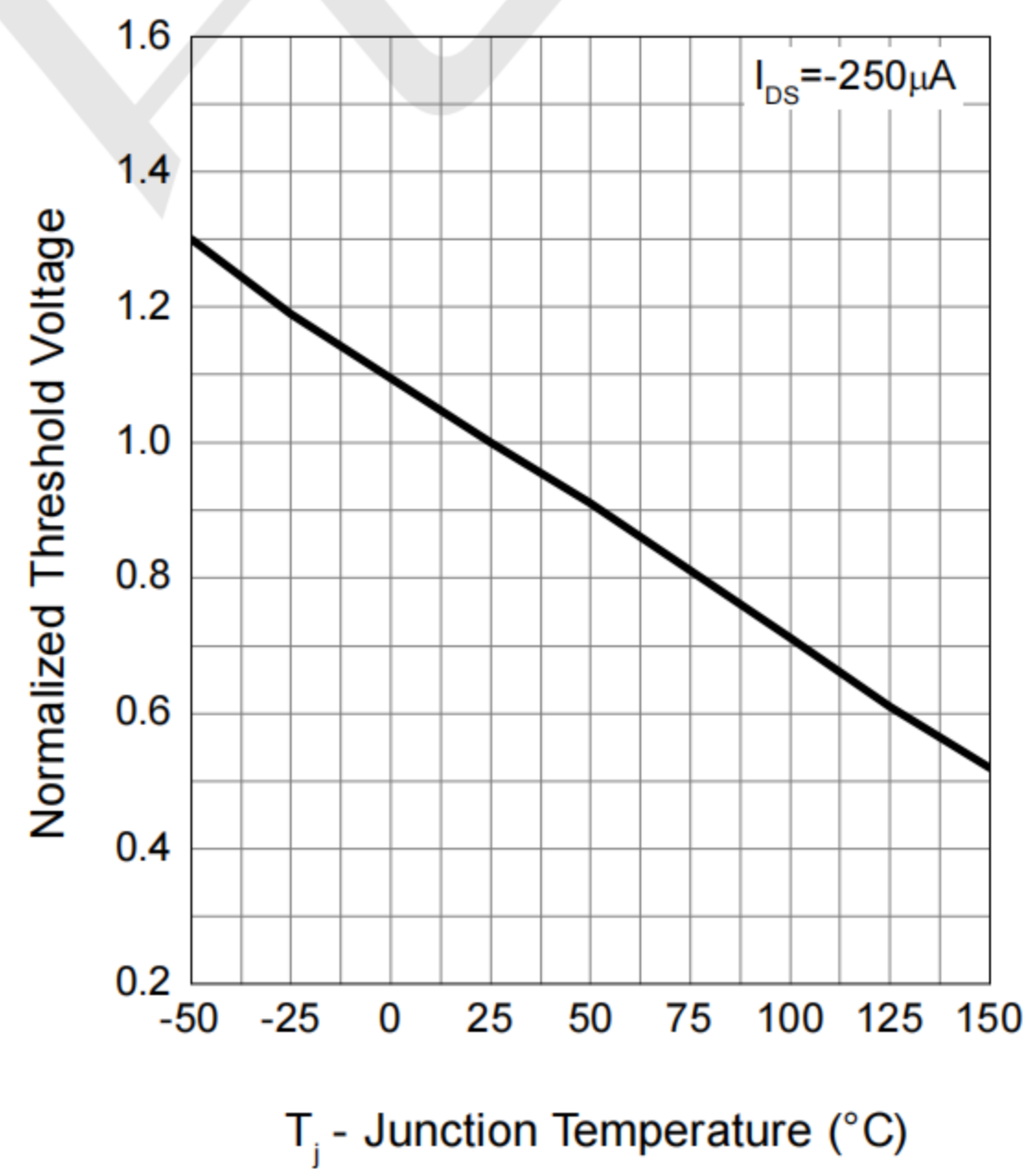
Drain-Source On Resistance



Gate-Source On Resistance

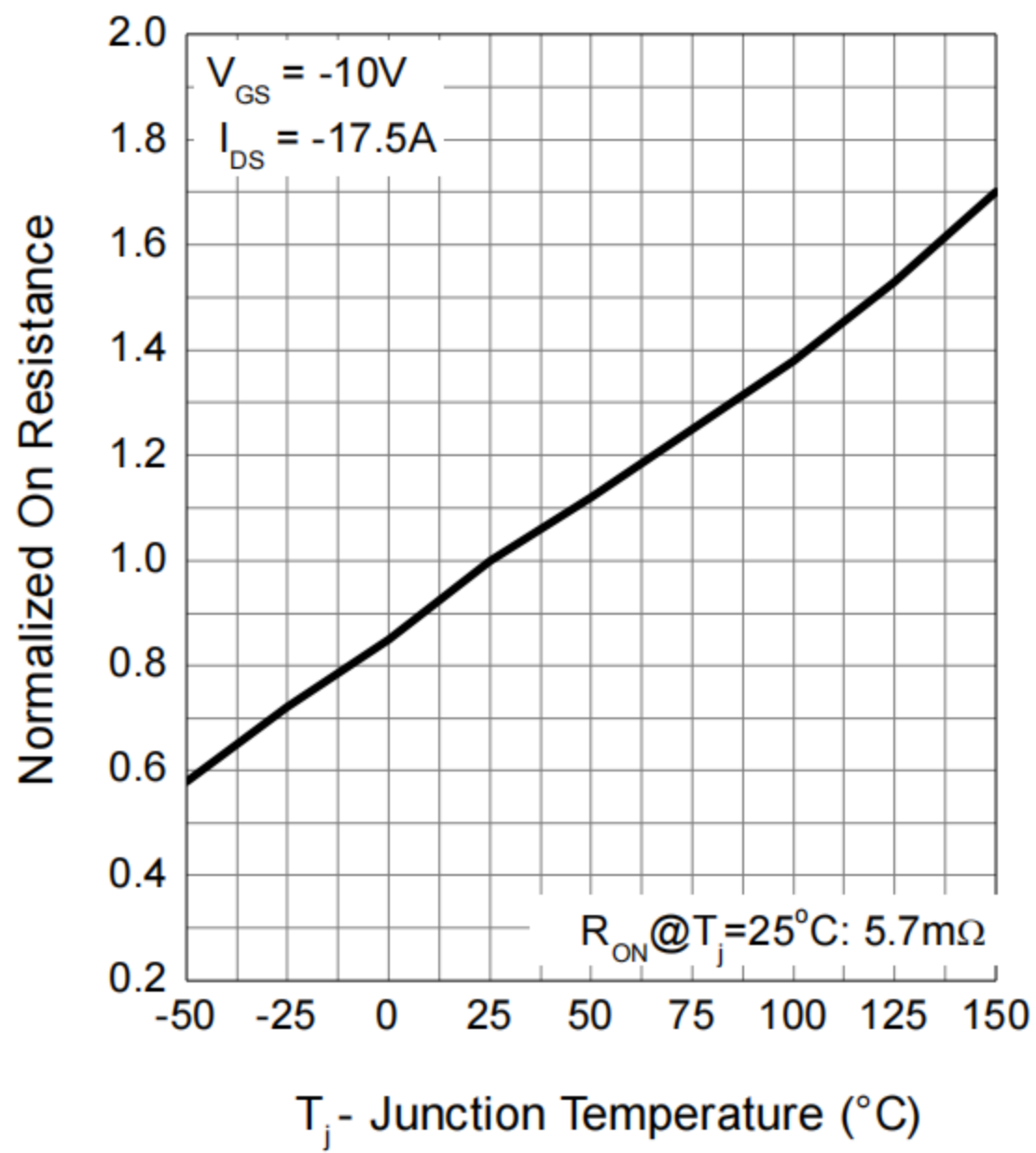


Gate Threshold Voltage

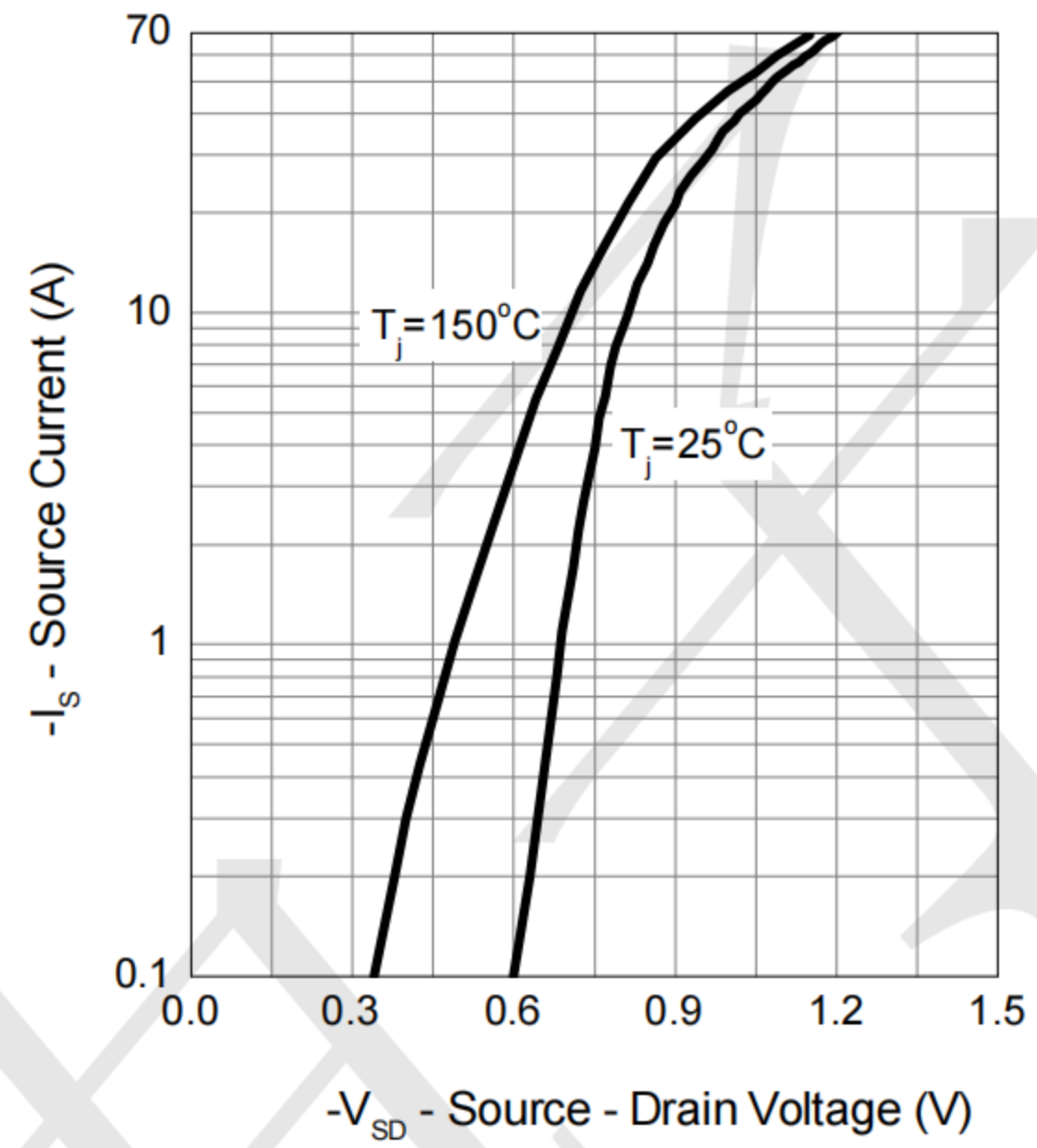


Typical Electrical and Thermal Characteristics (Cont.)

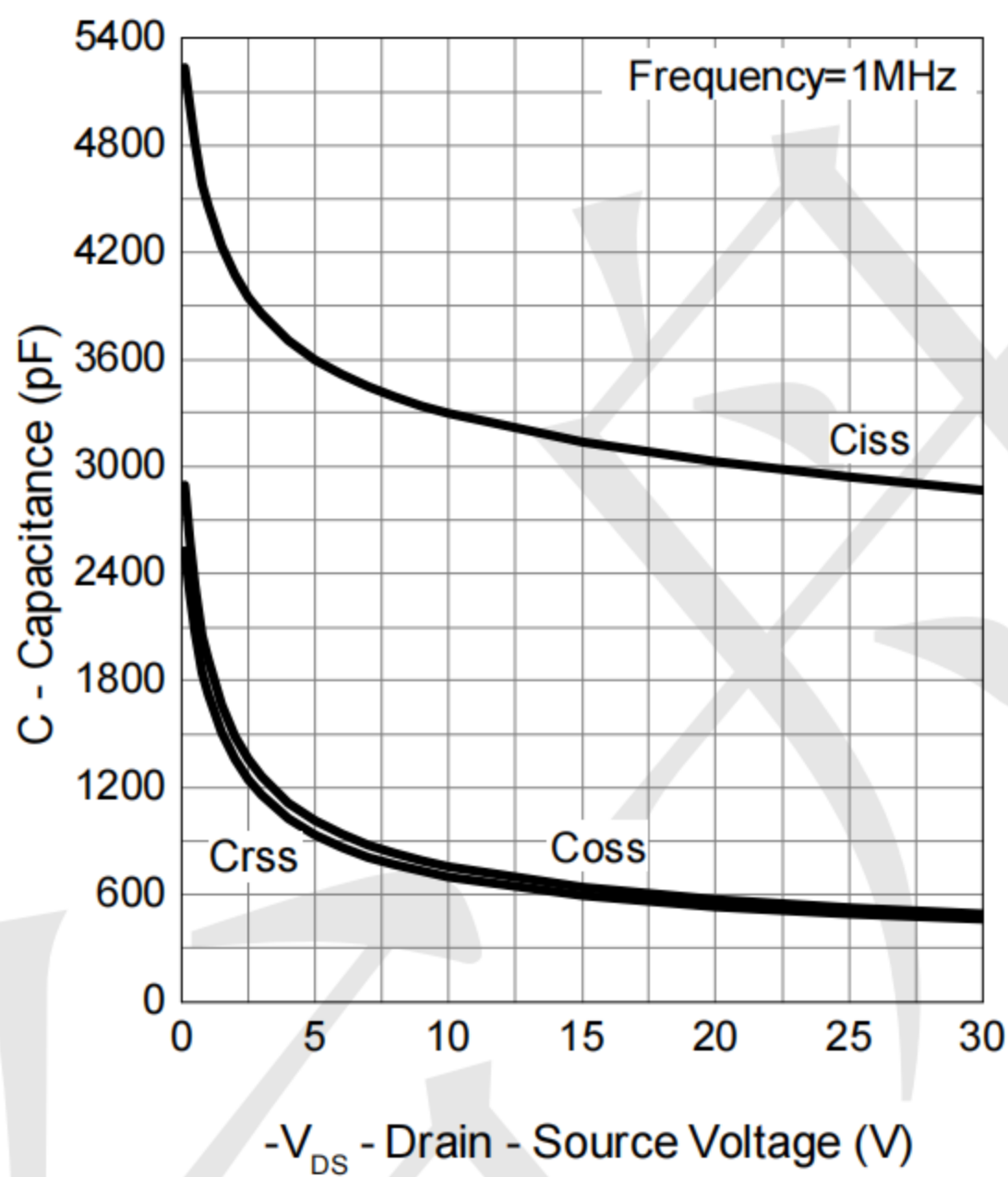
Drain-Source On Resistance



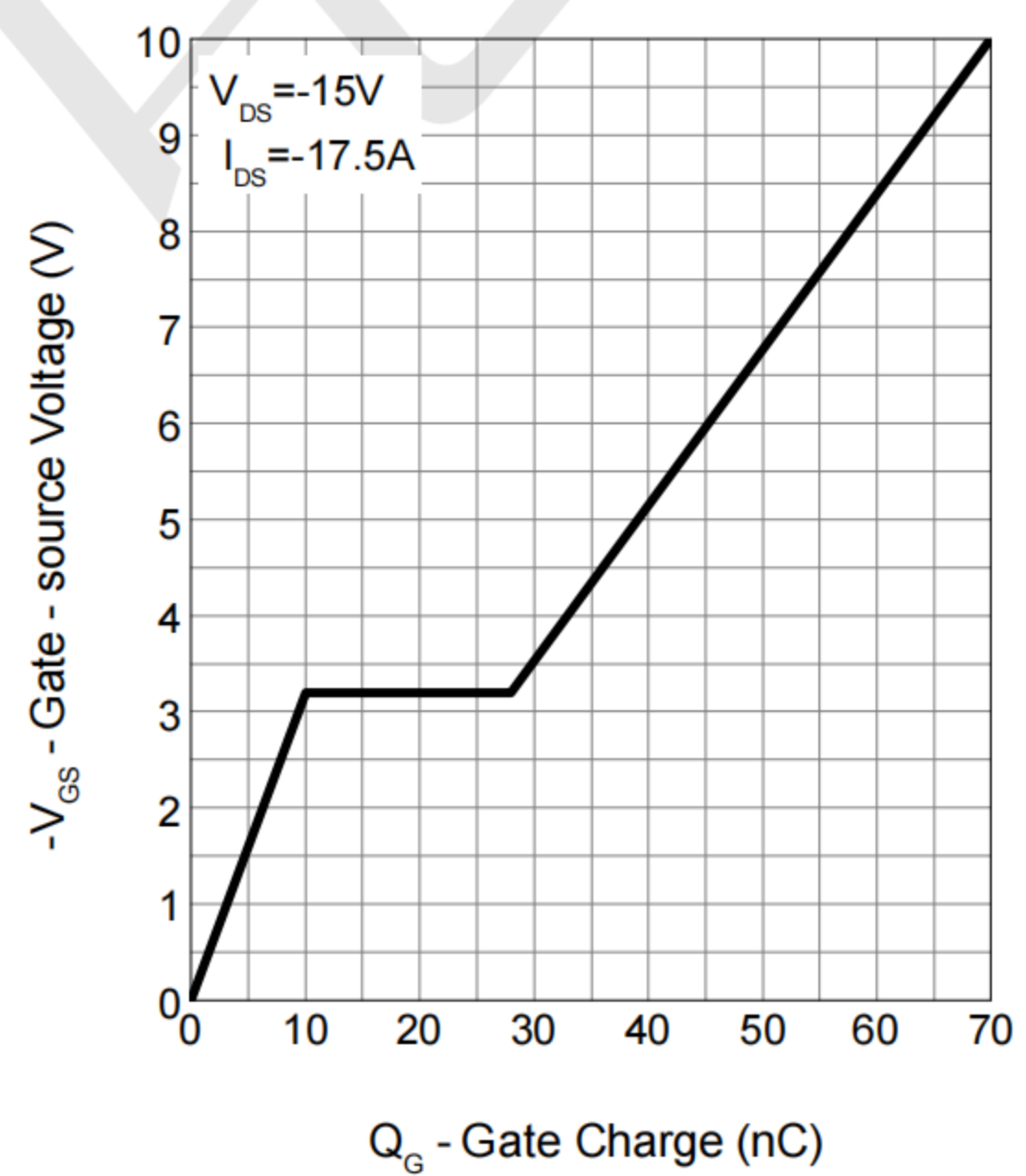
Source-Drain Diode Forward



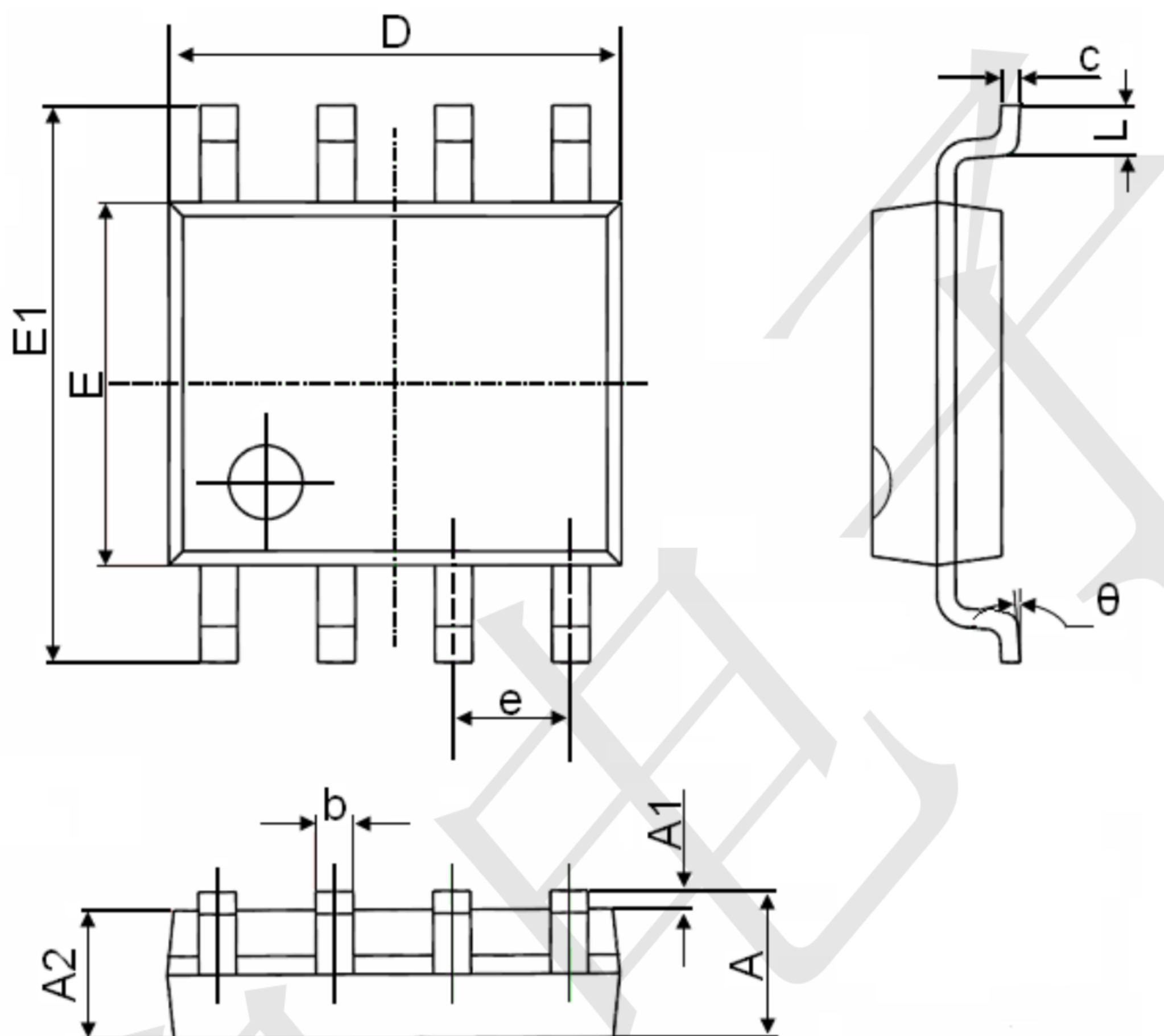
Capacitance



Gate Charge



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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