

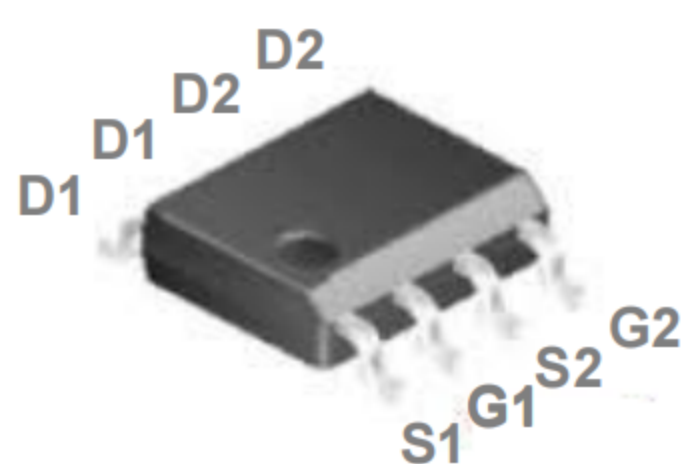
### GENERAL FEATURES

PARAMETER	VALUE	UNIT
$V_{DS}$	20	V
$R_{DS(on)}$ (max)	$V_{GS} = 4.5V$	30
	$V_{GS} = 2.5V$	40
$Q_g$	4.86	nC

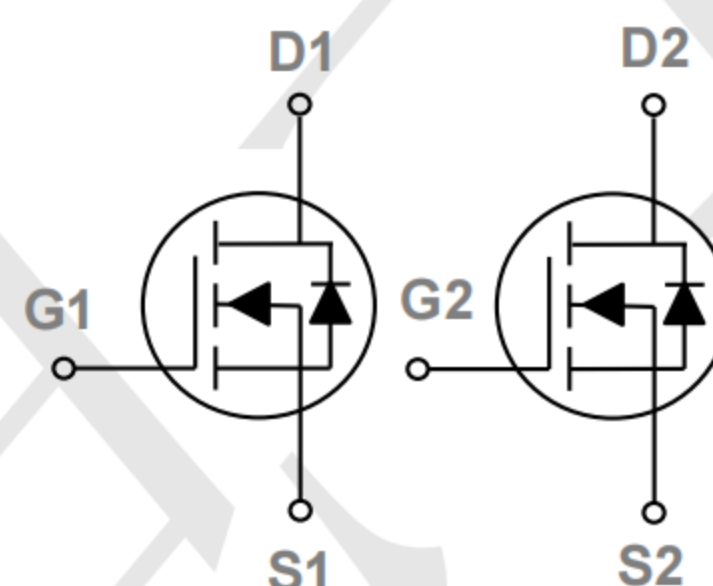
### Application

- Battery protection
- Load switch

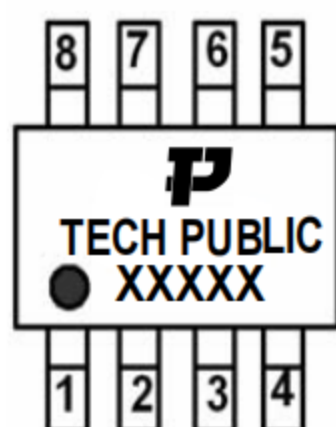
### Package and Pin Configuration



### Circuit diagram



### Marking:



“P” is TECHPUBLIC LOGO

“XXXXX” Marking ID (Please see the last page for details)

### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current (Note 1)	$I_D$	6	A
Pulsed Drain Current (Note 2)	$I_{DM}$	30	A
Continuous Source Current (Diode Conduction)	$I_S$	1.7	A
Total Power Dissipation	$P_{DTOT}$	$T_A = 25^\circ C$	1.6
		$T_A = 75^\circ C$	1.1
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	- 55 to +150	$^\circ C$

### THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction to Case Thermal Resistance	$R_{\theta JC}$	40	$^\circ C/W$
Junction to Ambient Thermal Resistance	$R_{\theta JA}$	77	$^\circ C/W$

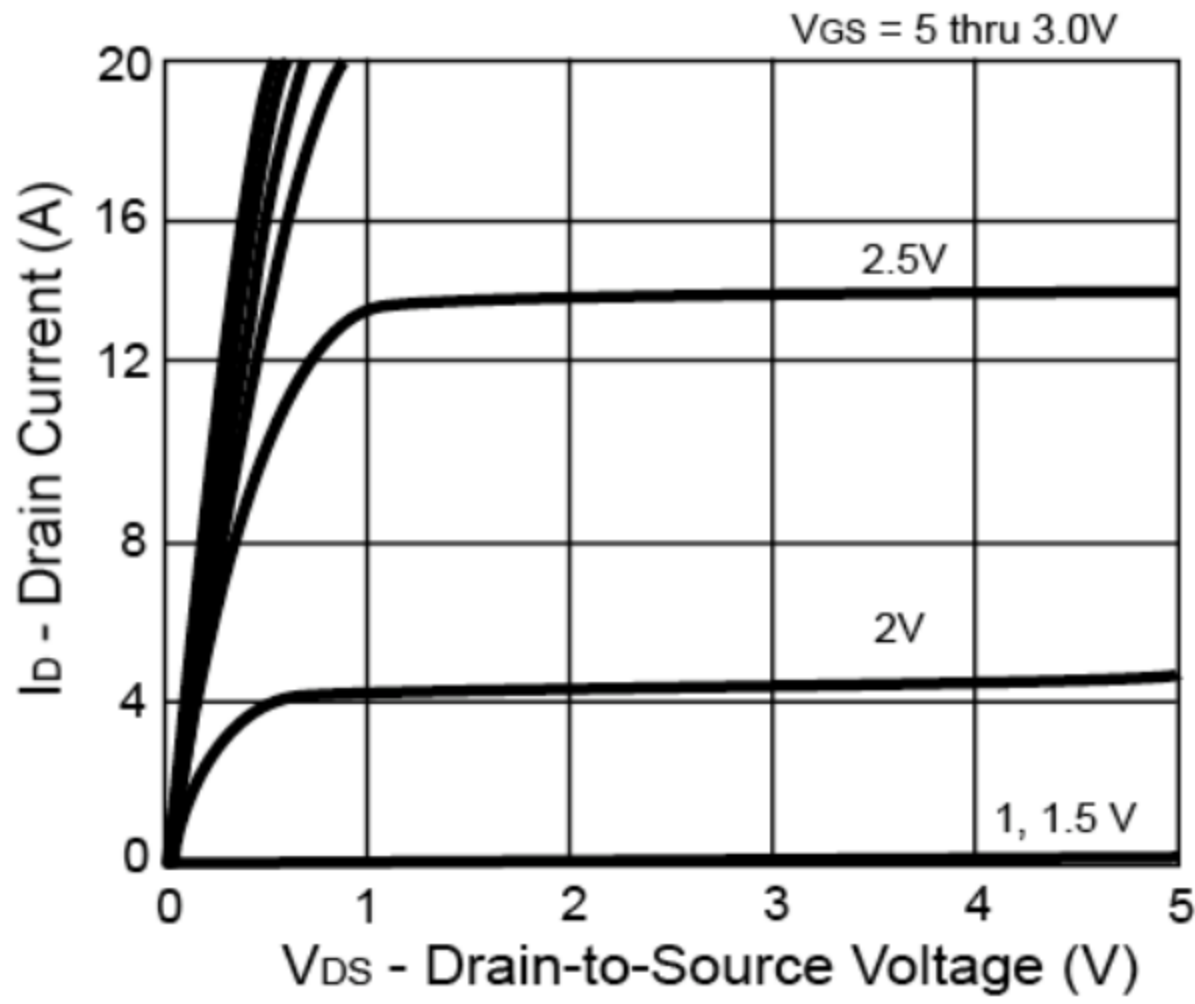
Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
<b>Static</b> <sup>(Note 3)</sup>						
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	$BV_{DSS}$	20	--	--	V
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	$V_{GS(TH)}$	0.6	--	--	V
Gate Body Leakage	$V_{GS} = \pm 12V, V_{DS} = 0V$	$I_{GSS}$	--	--	$\pm 100$	nA
Zero Gate Voltage Drain Current	$V_{DS} = 20V, V_{GS} = 0V$	$I_{DSS}$	--	--	1	$\mu A$
On-State Drain Current	$V_{DS} = 5V, V_{GS} = 4.5V$	$I_{D(ON)}$	30	--	--	A
Drain-Source On-State Resistance	$V_{GS} = 4.5V, I_D = 6.0A$	$R_{DS(ON)}$	--	21	30	m $\Omega$
	$V_{GS} = 2.5V, I_D = 5.2A$		--	30	40	
Forward Transconductance	$V_{DS} = 10V, I_D = 6A$	$g_{fs}$	--	30	--	S
<b>Dynamic</b> <sup>(Note 4)</sup>						
Total Gate Charge	$V_{DS} = 10V, I_D = 6A,$ $V_{GS} = 4.5V$	$Q_g$	--	4.86	--	nC
Gate-Source Charge		$Q_{gs}$	--	0.92	--	
Gate-Drain Charge		$Q_{gd}$	--	1.4	--	
Input Capacitance	$V_{DS} = 8V, V_{GS} = 0V,$ $F = 1.0\text{MHz}$	$C_{iss}$	--	562	--	pF
Output Capacitance		$C_{oss}$	--	106	--	
Reverse Transfer Capacitance		$C_{rss}$	--	75	--	
<b>Switching</b> <sup>(Note 5)</sup>						
Turn-On Delay Time	$V_{DD} = 10V,$ $R_{GEN} = 6\Omega,$ $I_D = 1A, V_{GS} = 4.5V,$	$t_{d(on)}$	--	8.1	--	ns
Turn-On Rise Time		$t_r$	--	9.95	--	
Turn-Off Delay Time		$t_{d(off)}$	--	21.85	--	
Turn-Off Fall Time		$t_f$	--	5.35	--	
<b>Source-Drain Diode</b> <sup>(Note 3)</sup>						
Forward Voltage	$I_S = 1.7A, V_{GS} = 0V$	$V_{SD}$	--	0.7	1.2	V

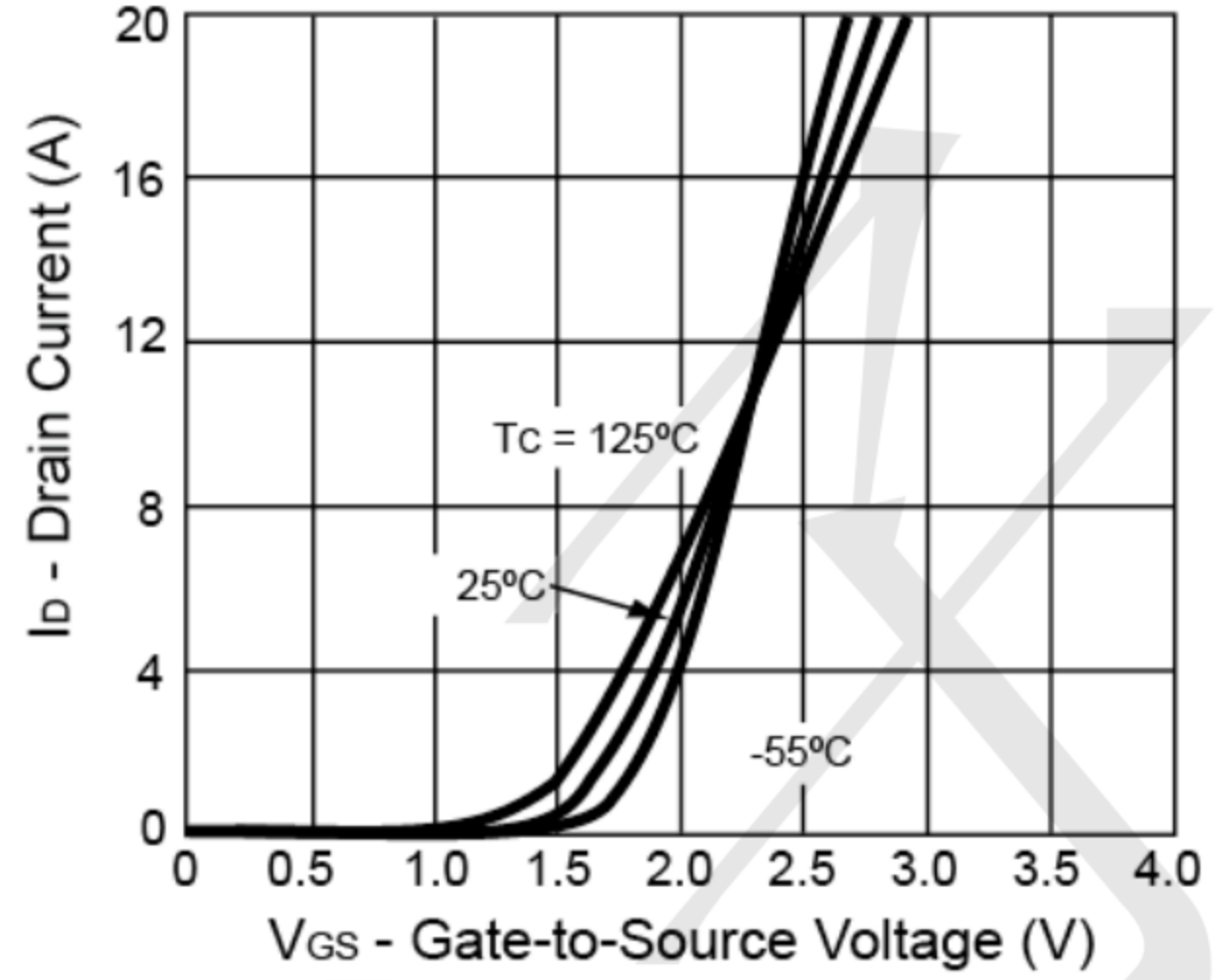


**Typical Electrical and Thermal Characteristics**

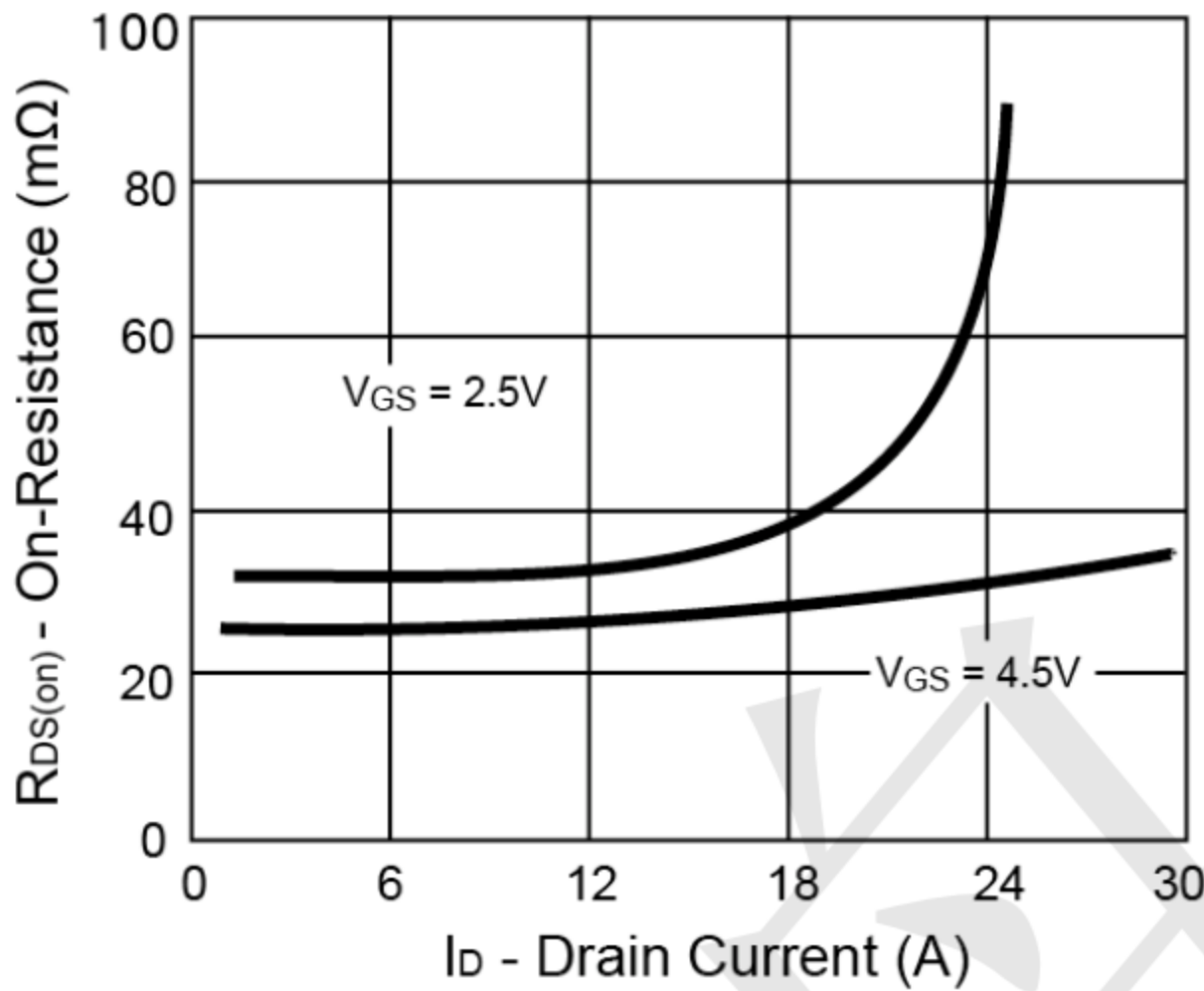
**Output Characteristics**



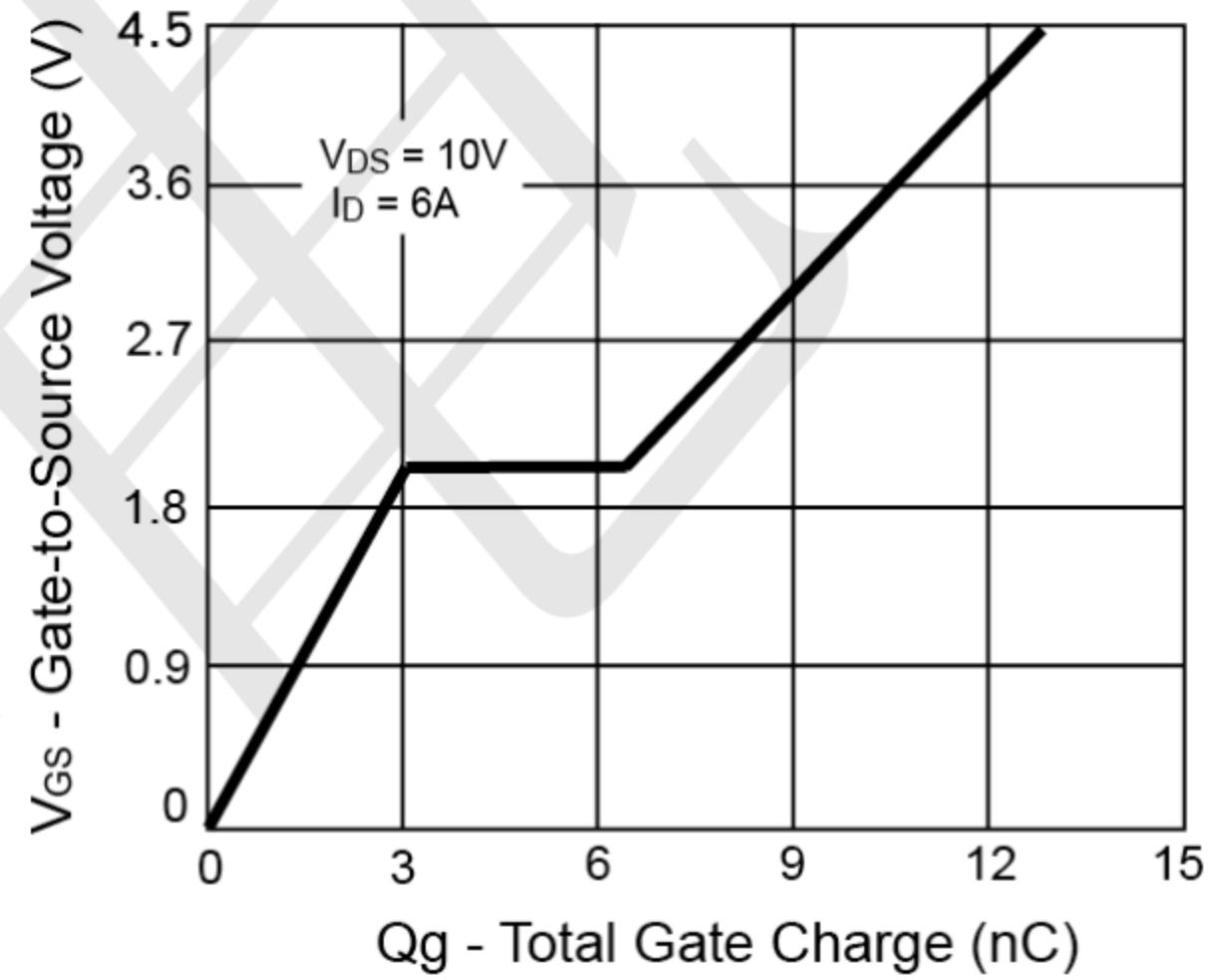
**Transfer Characteristics**



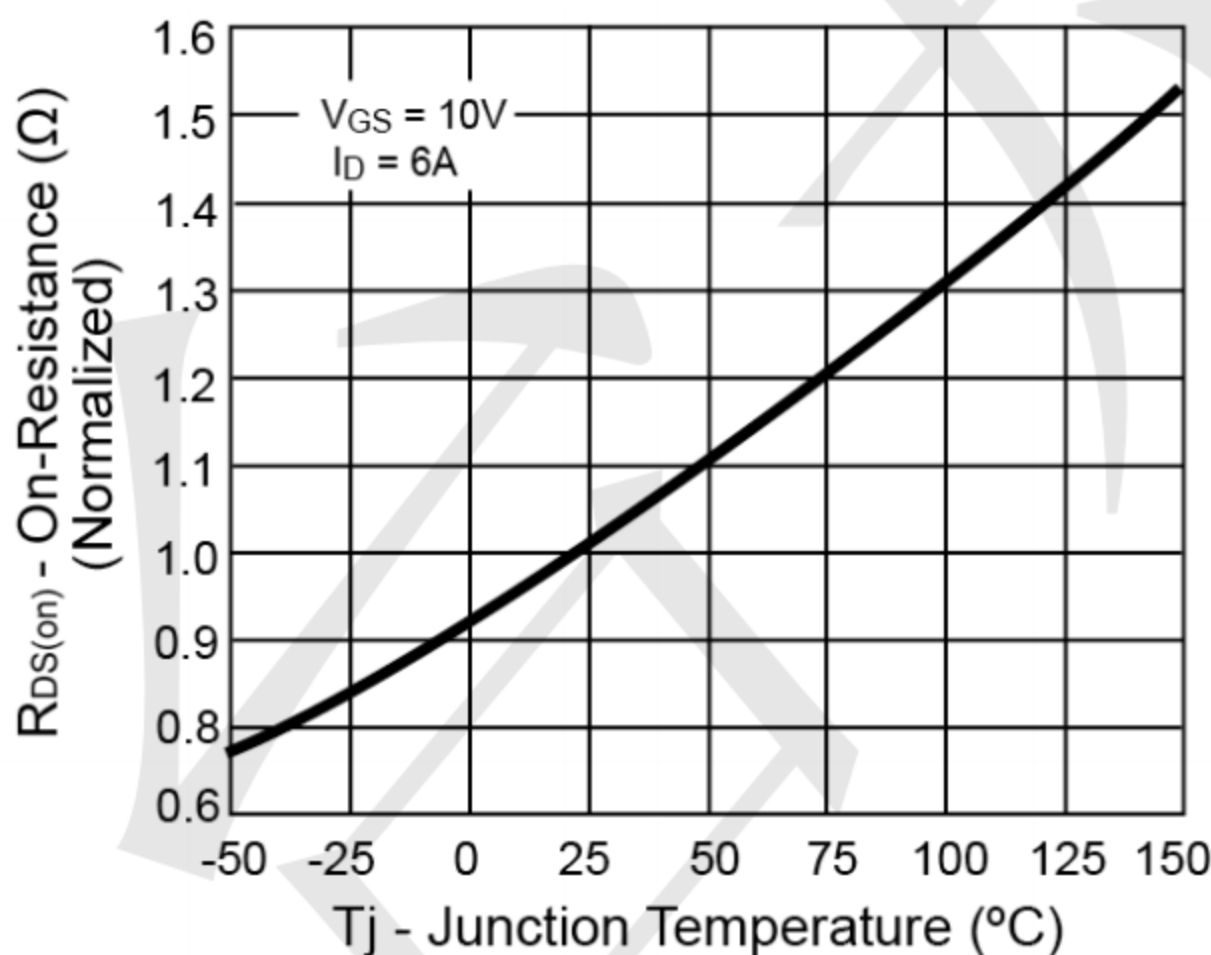
**On-Resistance vs. Drain Current**



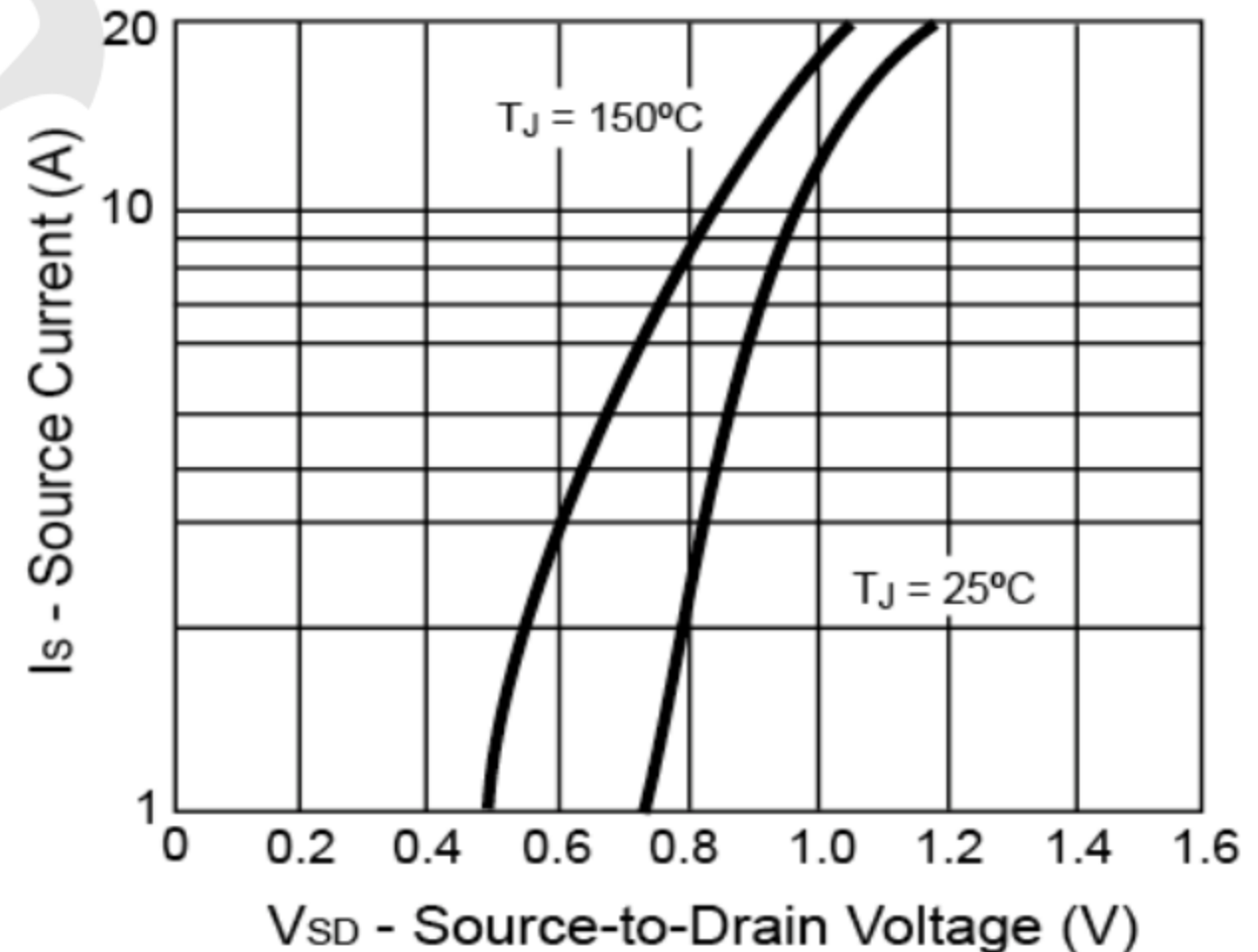
**Gate Charge**



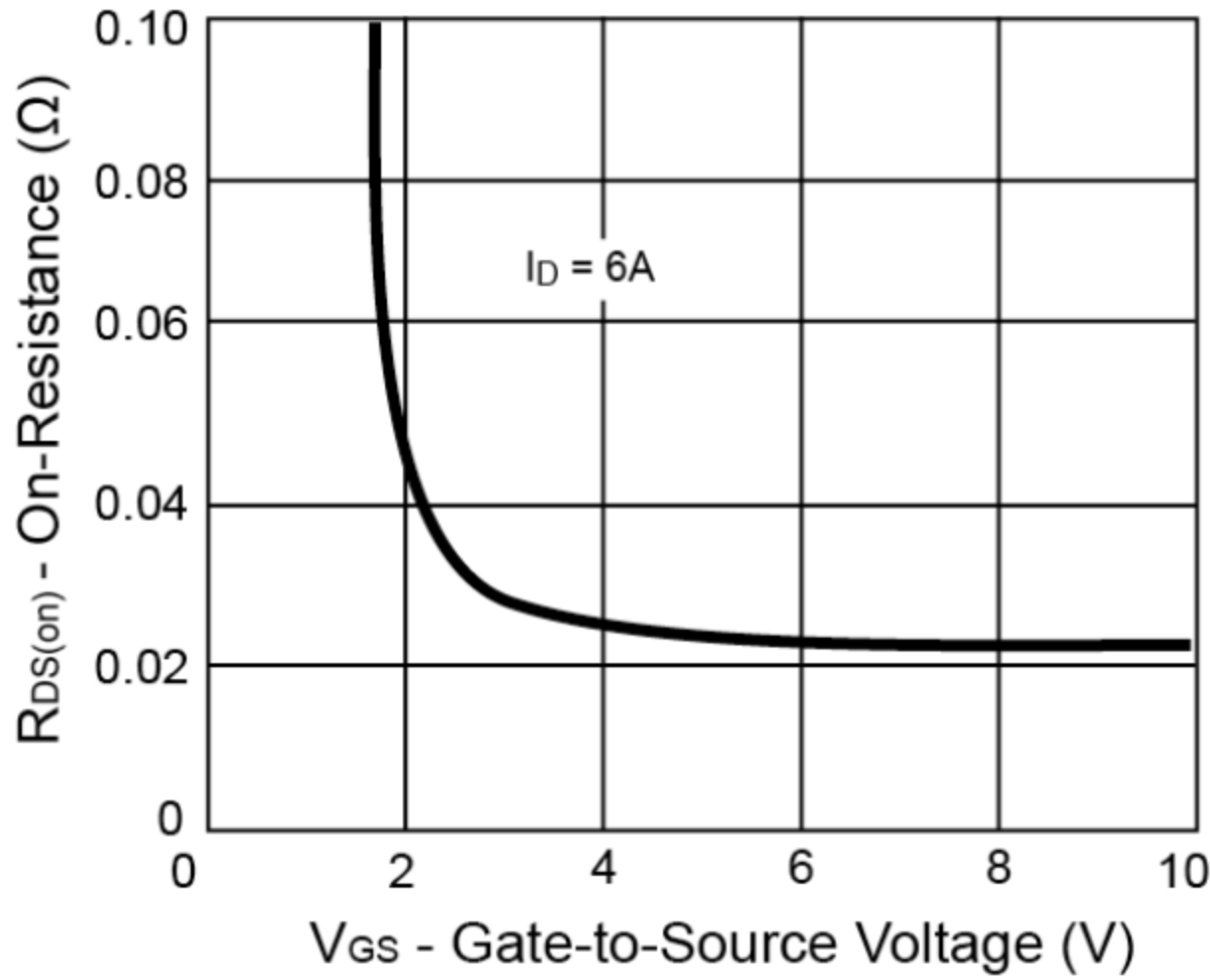
**On-Resistance vs. Junction Temperature**



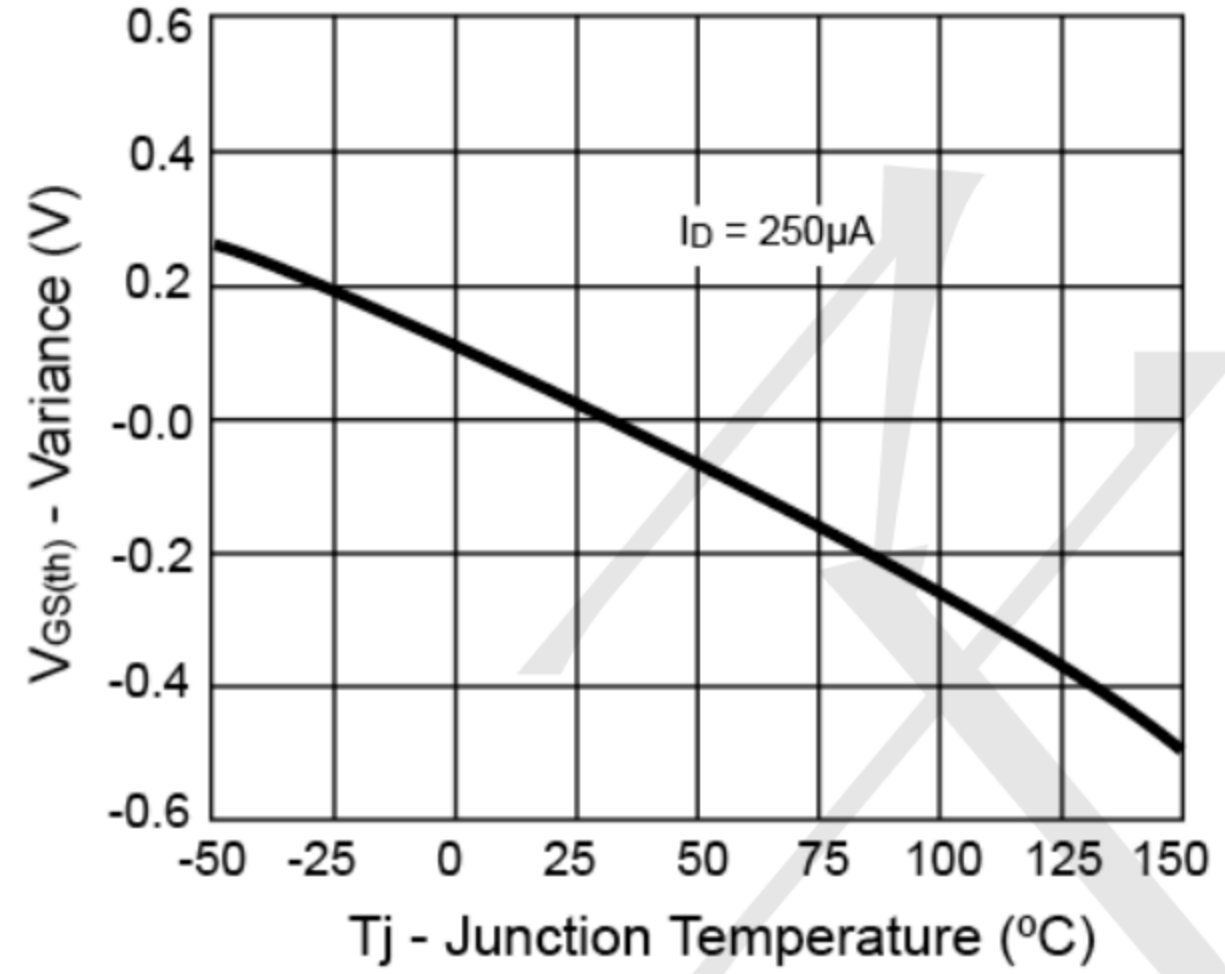
**Source-Drain Diode Forward Voltage**



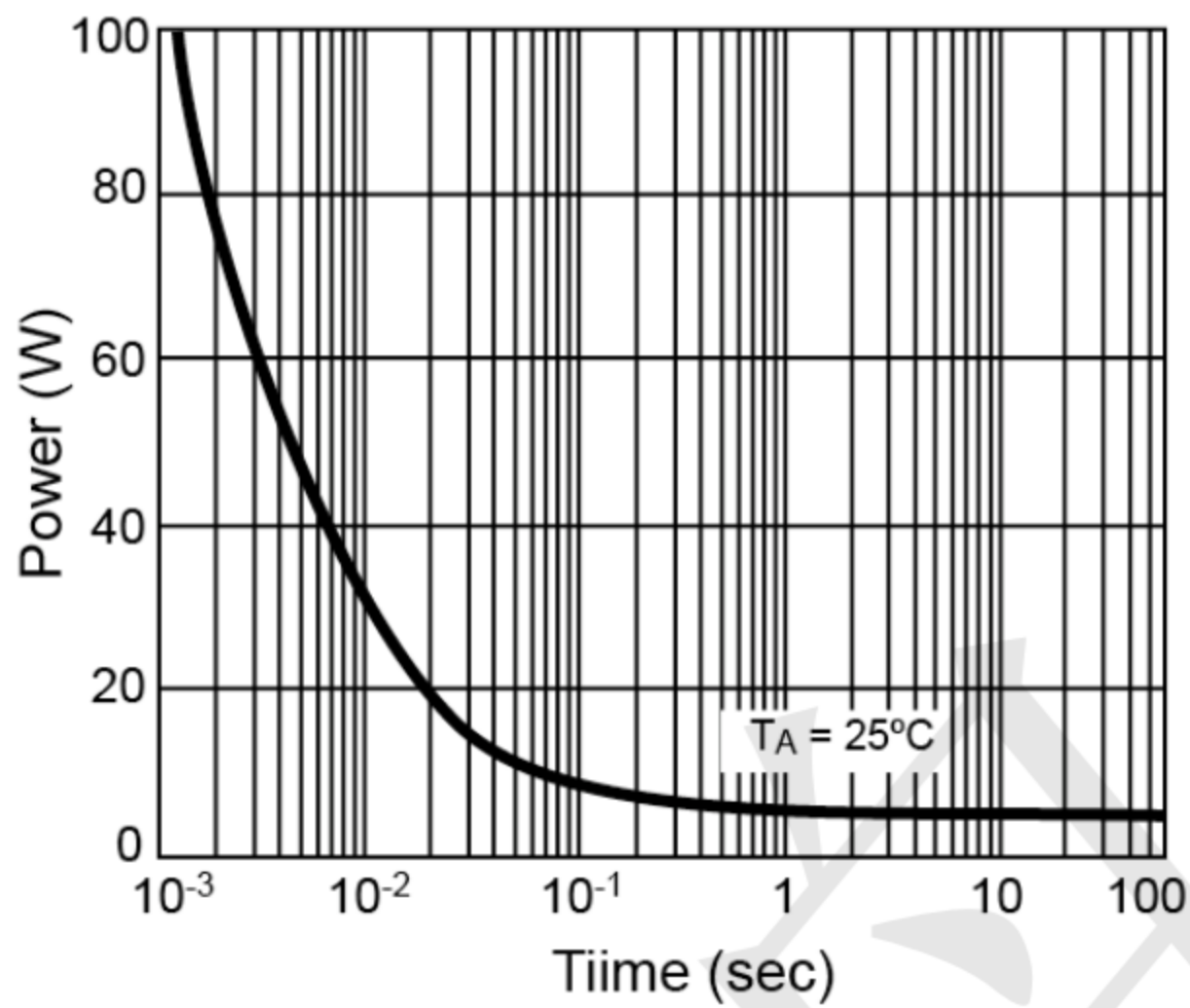
**On-Resistance vs. Gate-Source Voltage**



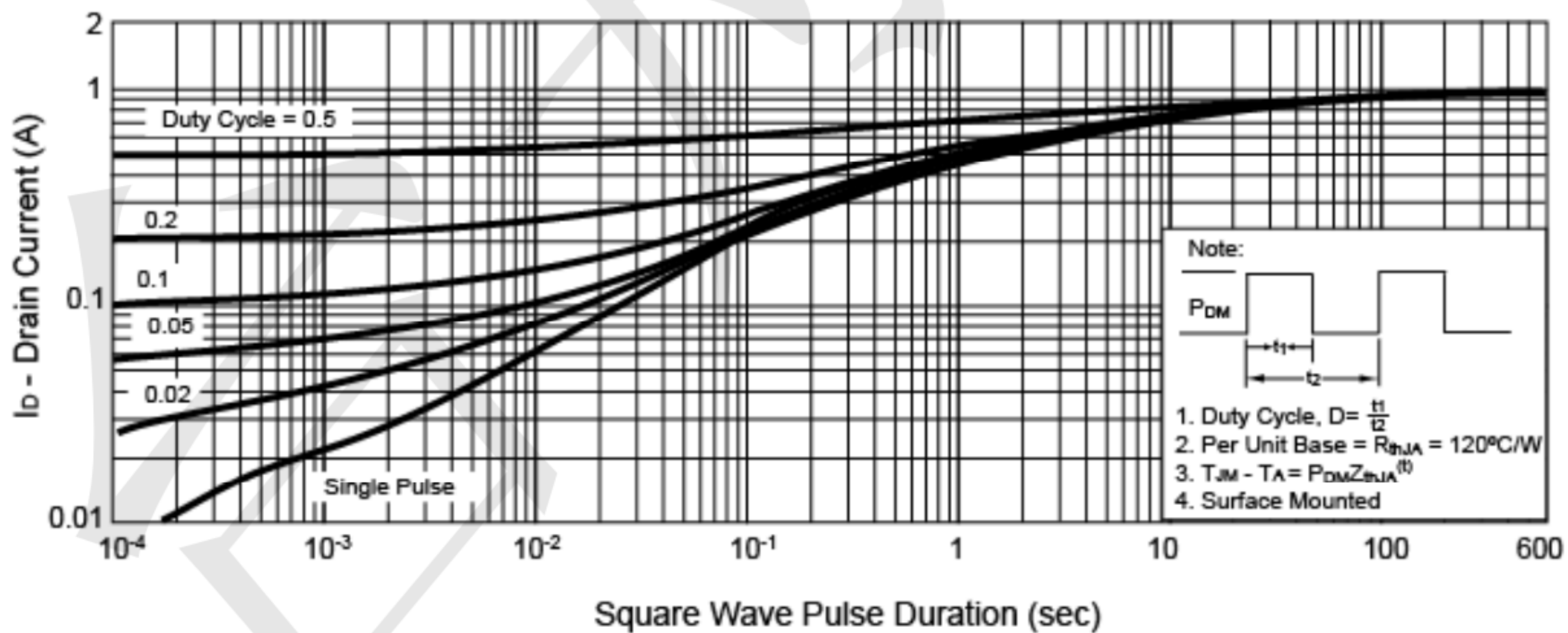
**Threshold Voltage**



**Single Pulse Power**

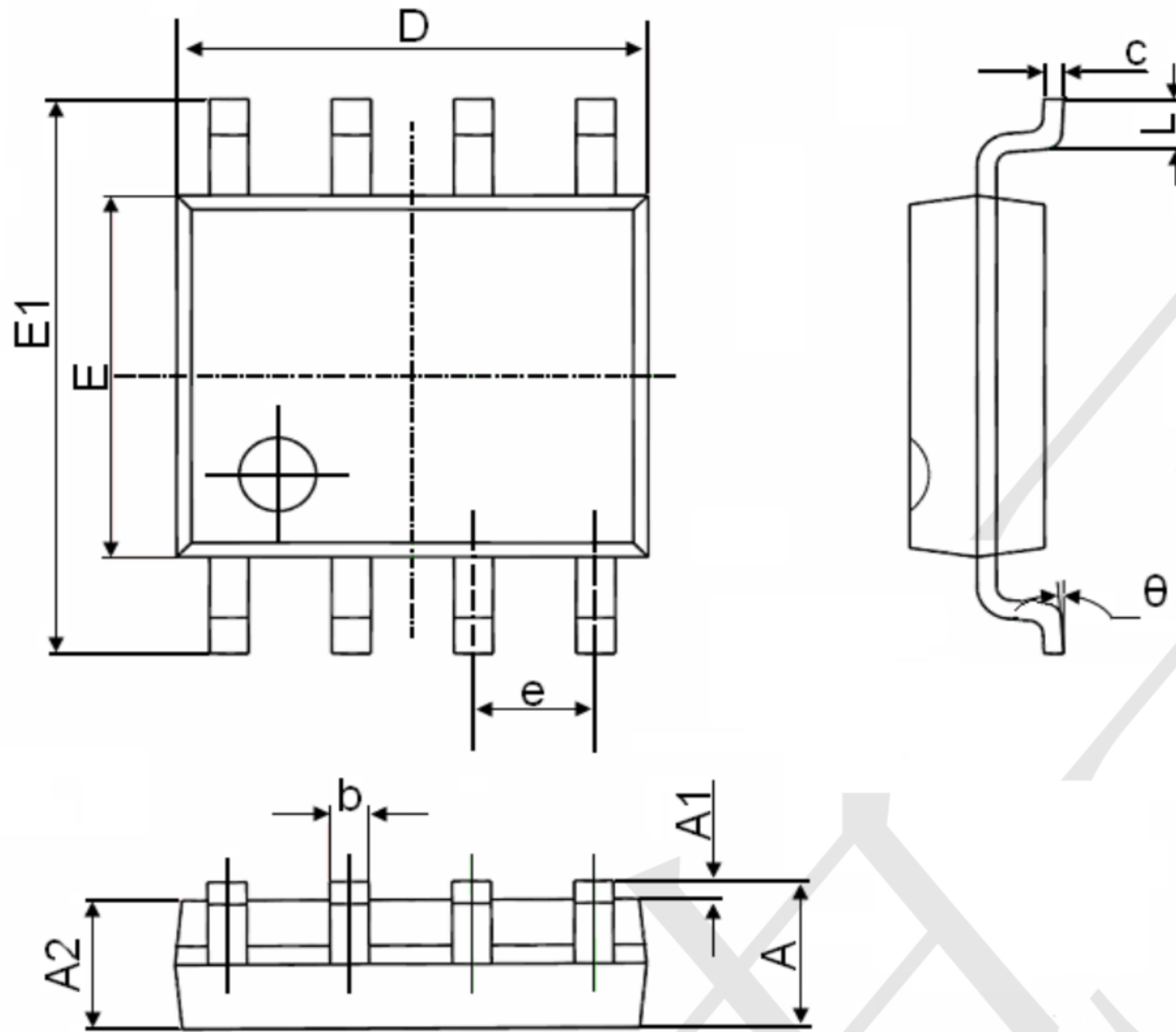


**Normalized Thermal Transient Impedance, Junction-to-Ambient**



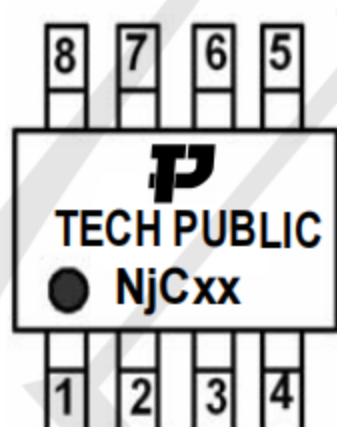


### SOP-8 Package Information



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
$\theta$	0°	8°	0°	8°

### Marking:



“P” is TECHPUBLIC LOGO  
 “NYT” is Part number, fixed  
 “xx” is internal code

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