TECH PUBLIC
台舟电子

GENERAL FEATURES

PARAMETER		VALUE	UNIT
V_{DS}		20	V
$R_{DS(on)}$ (max)	V_{GS} = 4.5V	30	mΩ
	V_{GS} = 2.5V	40	
Q_g		4.86	nC
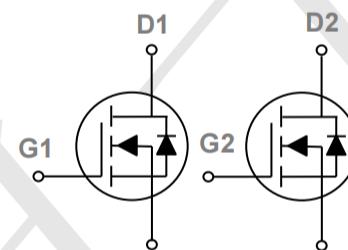
Application
■ Battery protection
■ Load switch
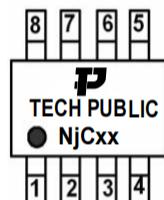
Package and Pin Configuration

D2
D2
D1
D1
S1 G1 S2 G2

Circuit diagram

D1   D2
G1   G2

Marking:

8 7 6 5
TECH PUBLIC
● NjCxx
1 2 3 4

"P" is TECHPUBLIC LOGO
"NJC" is Part number,fixed
"xx"is internal code

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [Note 1]	T_C = 25°C	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	T_A = 25°C	P_{DTOT}	1.6	W
	T_A = 75°C		1.1	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	- 55 to +150	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction to Case Thermal Resistance	$R_{ΘJC}$	40	°C/W
Junction to Ambient Thermal Resistance	$R_{ΘJA}$	77	°C/W
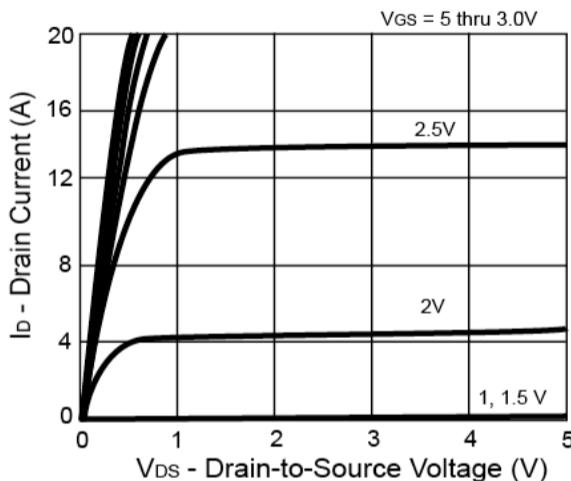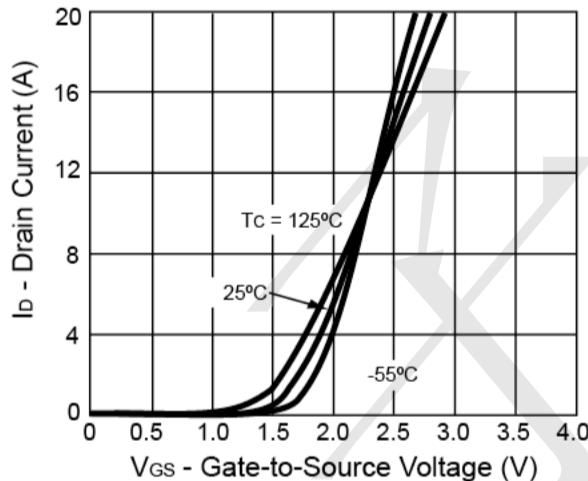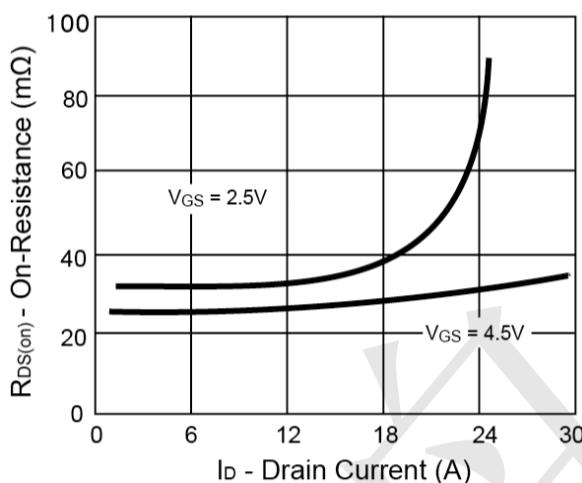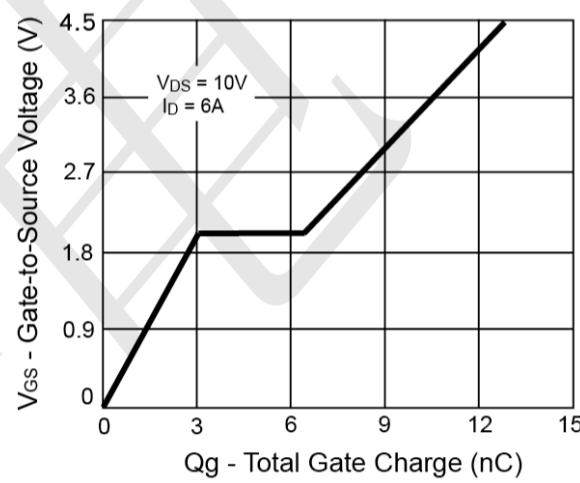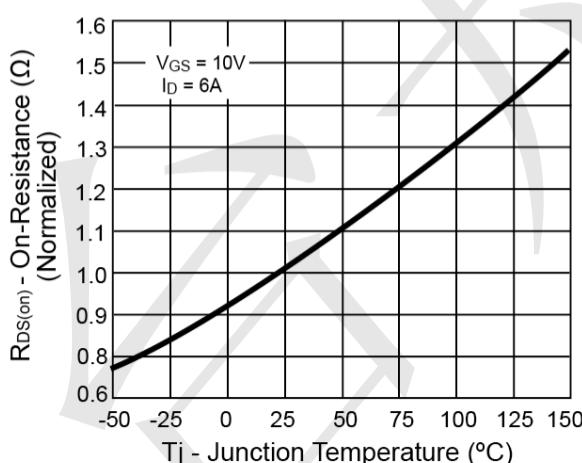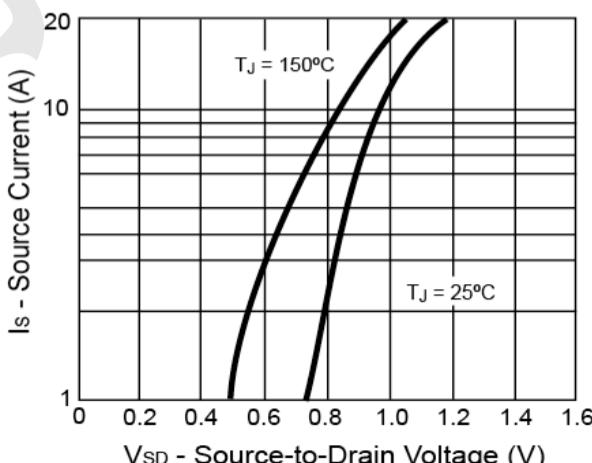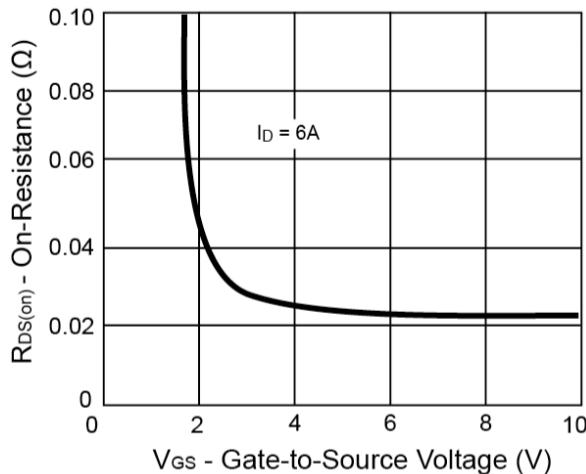
Electrical Characteristics (T$_A$=25℃ unless otherwise noted)

ELECTRICAL SPECIFICATIONS (T$_A$ = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static (Note 3)						
Drain-Source Breakdown Voltage	V$_{GS}$ = 0V, I$_D$ = 250µA	BV$_{DSS}$	20	--	--	V
Gate Threshold Voltage	V$_{DS}$ = V$_{GS}$, I$_D$ = 250µA	V$_{GS(TH)}$	0.6	--	--	V
Gate Body Leakage	V$_{GS}$ = ±12V, V$_{DS}$ = 0V	I$_{GSS}$	--	--	±100	nA
Zero Gate Voltage Drain Current	V$_{DS}$ = 20V, V$_{GS}$ = 0V	I$_{DSS}$	--	--	1	µA
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	mΩ
	V$_{GS}$ = 2.5V, I$_D$ = 5.2A		--	30	40	
Forward Transconductance	V$_{DS}$ = 10V, I$_D$ = 6A	g$_{fs}$	--	30	--	S
Dynamic (Note 4)						
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 = 1.0MHz	C$_{iss}$	--	562	--	pF
Output Capacitance		C$_{oss}$	--	106	--	
Reverse Transfer Capacitance		C$_{rss}$		75		
Switching (Note 5)						
Turn-On Delay Time	V$_{DD}$ = 10V, R$_{GEN}$ = 6Ω, 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	--	
Source-Drain Diode (Note 3)						
Forward Voltage	I$_S$ = 1.7A, V$_{GS}$ = 0V	V$_{SD}$	--	0.7	1.2	V
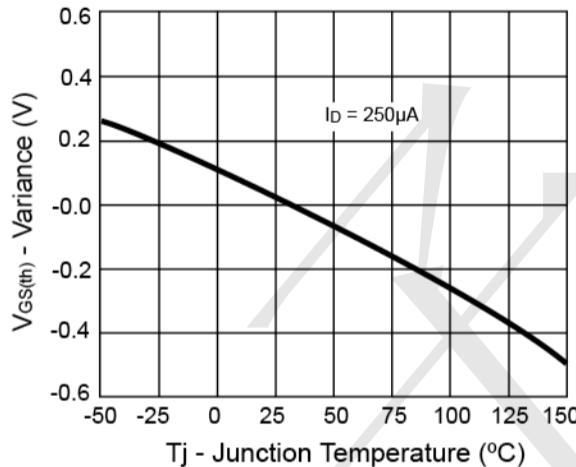
## Typical Electrical and Thermal Characteristics

Output Characteristics


Transfer Characteristics


On-Resistance vs. Drain Current


**Gate Charge**

On-Resistance vs. Junction Temperature

Source-Drain Diode Forward Voltage
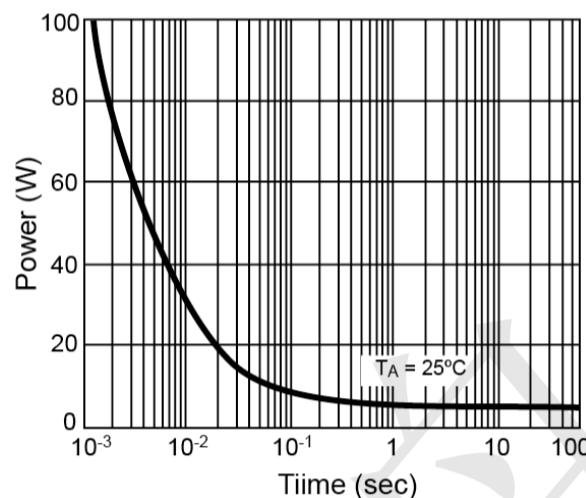
On-Resistance vs. Gate-Source Voltage

$I_D = 6A$

Threshold Voltage

$I_D = 250\mu A$
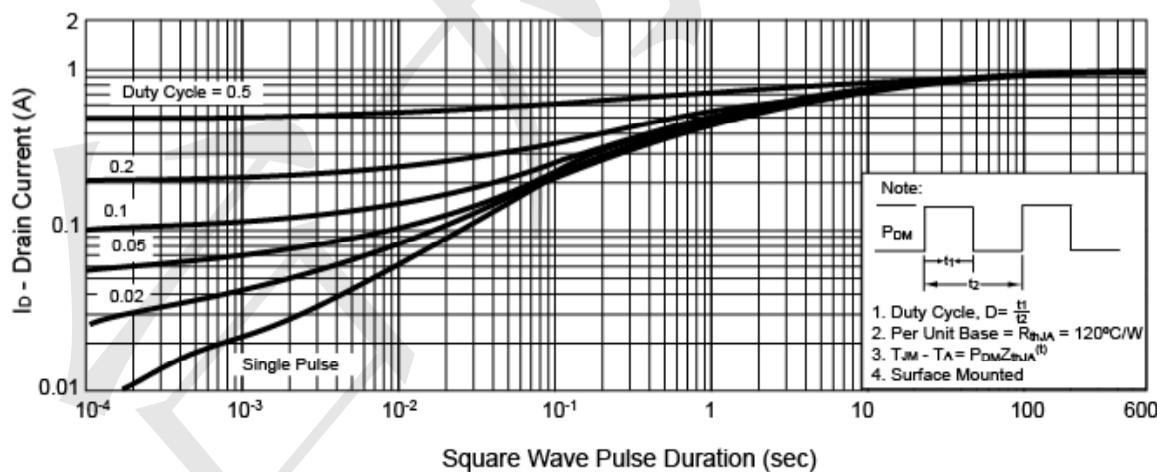
Single Pulse Power

$T_A = 25^\circ C$
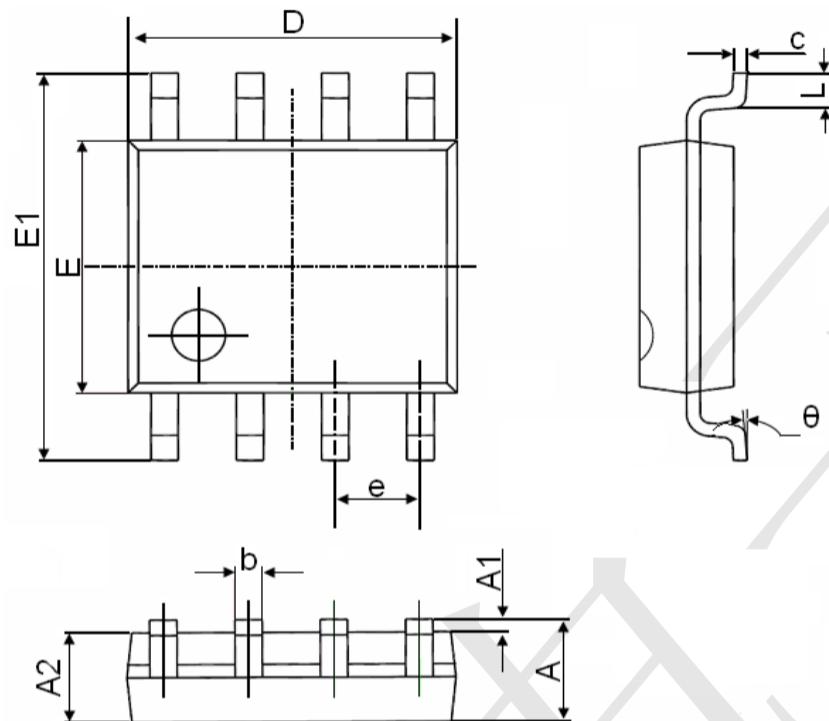
Normalized Thermal Transient Impedance, Junction-to-Ambient

Duty Cycle = 0.5
0.2
0.1
0.05
0.02

Single Pulse

Note:

P_{DM}

t_1

t_2

1. Duty Cycle, D= $\frac{t_1}{t_2}$
2. Per Unit Base = R_{thJA} = 120ºC/W
3. $T_{JM} - T_A = P_{DM} Z_{thJA}^{(t)}$
4. Surface Mounted

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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