TECH PUBLIC
台舟电子

TPM20V7NBLS8

Dual N-Channel Power MOSFET

www.sot23.com.tw

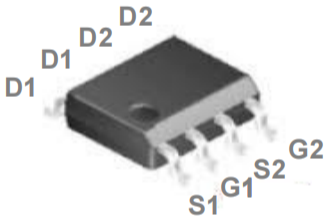
GENERAL FEATURES

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

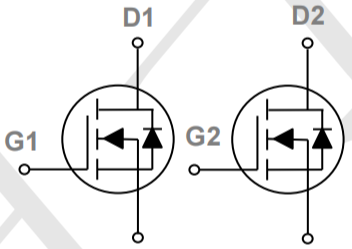
Application

- Battery protection
- Load switch

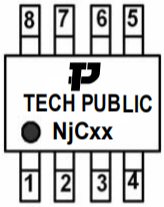
Package and Pin Configuration



Circuit diagram



Marking:



"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

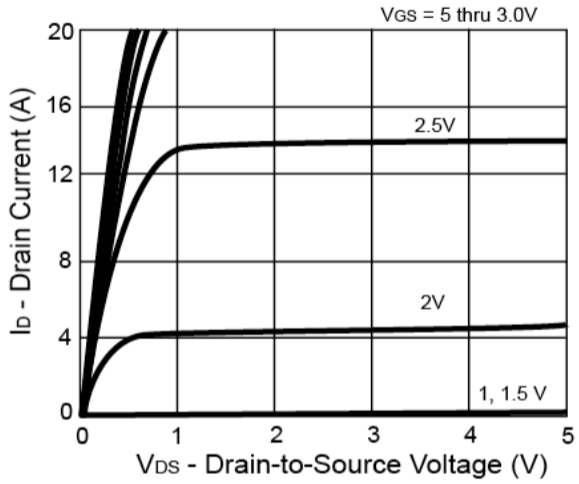
THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction to Case Thermal Resistance	$R_{\Theta JC}$	40	°C/W
Junction to Ambient Thermal Resistance	$R_{\Theta JA}$	77	°C/W

Electrical Characteristics (T_A=25℃unless otherwise noted)

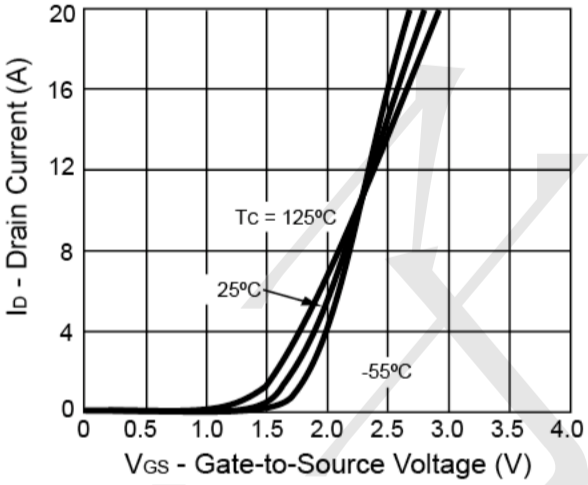
ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)						
PARAMETER	**CONDITIONS**	**SYMBOL**	**MIN**	**TYP**	**MAX**	**UNIT**
Static (Note 3)						
Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250μA	BV_{DSS}	20	--	--	V
Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	$V_{GS(TH)}$	0.6	--	--	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

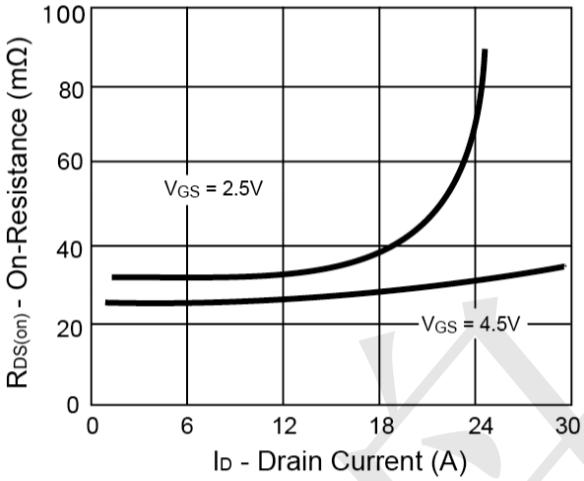
Output Characteristics



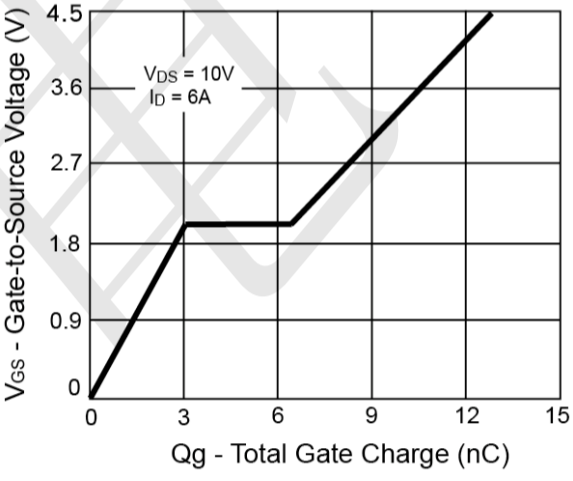
Transfer Characteristics



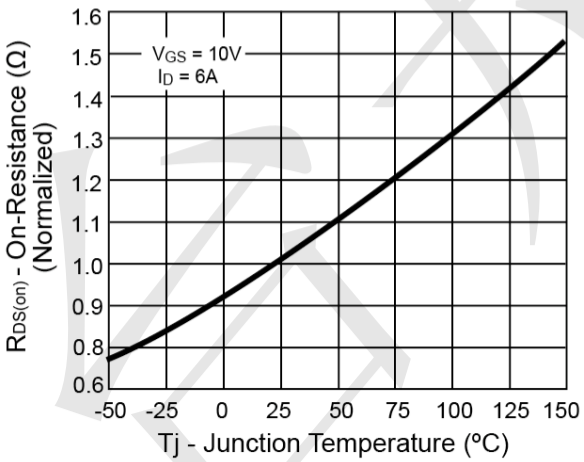
On-Resistance vs. Drain Current



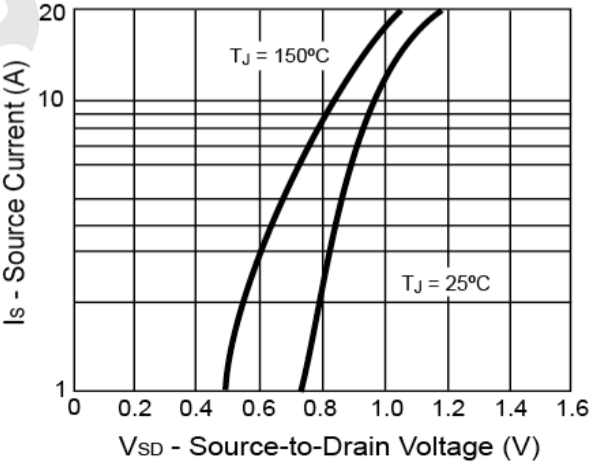
Gate Charge



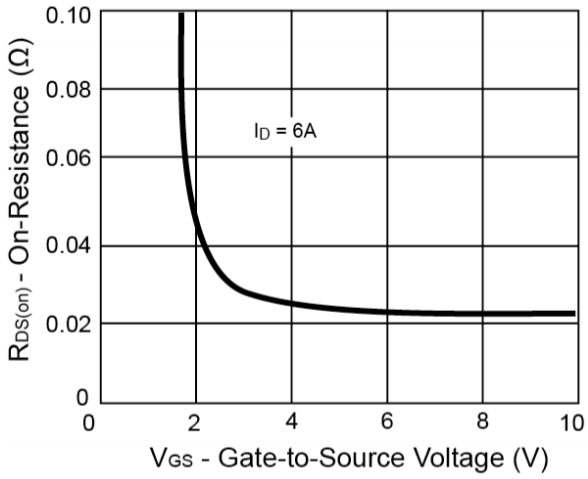
On-Resistance vs. Junction Temperature



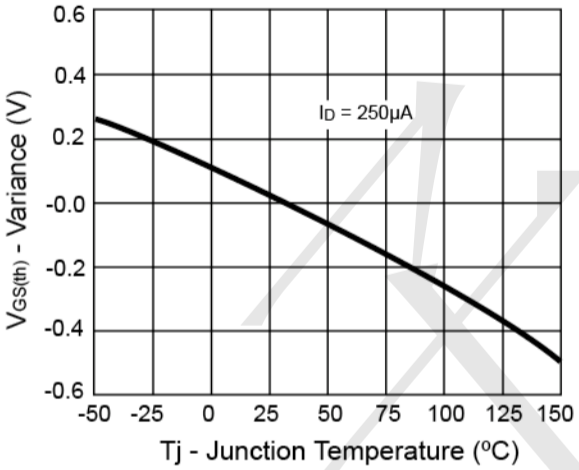
Source-Drain Diode Forward Voltage



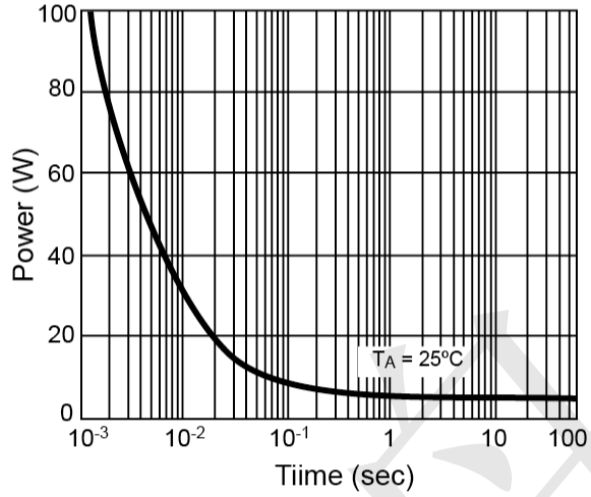
On-Resistance vs. Gate-Source Voltage



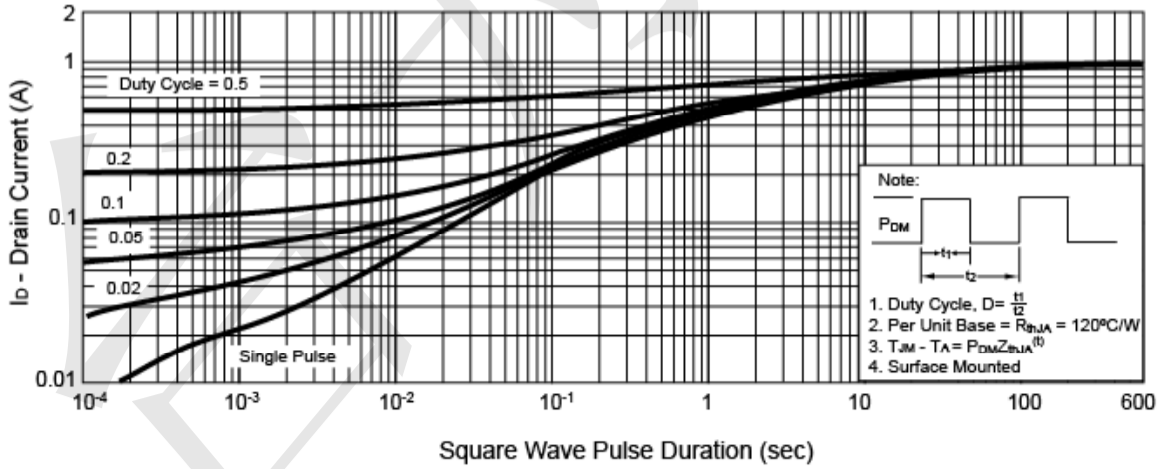
Threshold Voltage



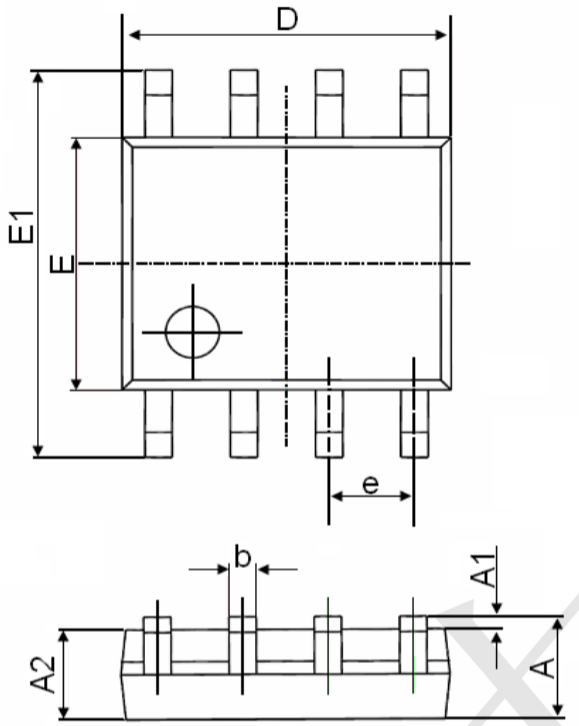
Single Pulse Power



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
θ	0°	8°	0°	8°