TECH PUBLIC
台舟电子

TPM30NB7S8

Dual N-Channel Enhancement Mode Power MOSFET

www.sot23.com.tw

GENERAL FEATURES

- $R_{DS(ON)} \leqq 35\ m\Omega$ @VGS=10V
- $R_{DS(ON)} \leqq 45\ m\Omega$ @VGS=4.5V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

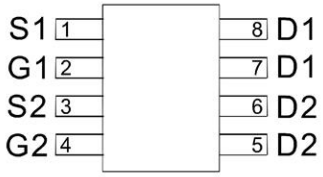
Application

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

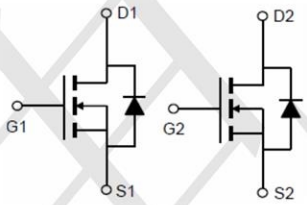
Package and Pin Configuration

(SOP-8)

Top View

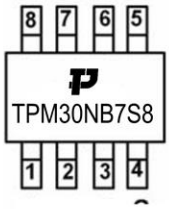


Circuit diagram



Schematic diagram

Marking:



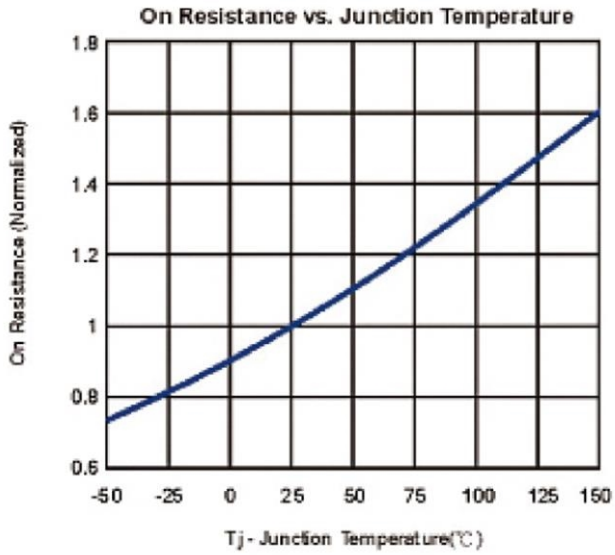
Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

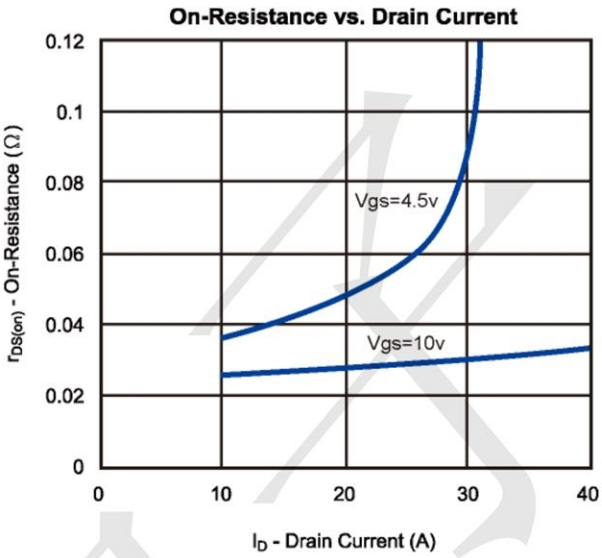
Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25℃	I_D	7	A
	T_A=70℃		4.8	
Pulsed Drain Current		I_{DM}	24	A
Maximum Power Dissipation	T_A=25℃	P_D	2	W
	T_A=70℃		1.3	
Operating Junction Temperature		T_J	-55 to 150	℃
Thermal Resistance-Junction to Ambient*		$R_{\theta JA}$	62.5	℃/W

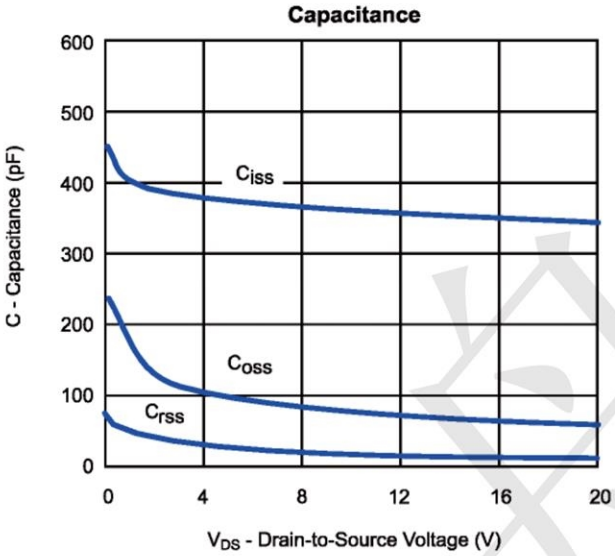
Electrical Characteristics (T_A=25℃unless otherwise noted)

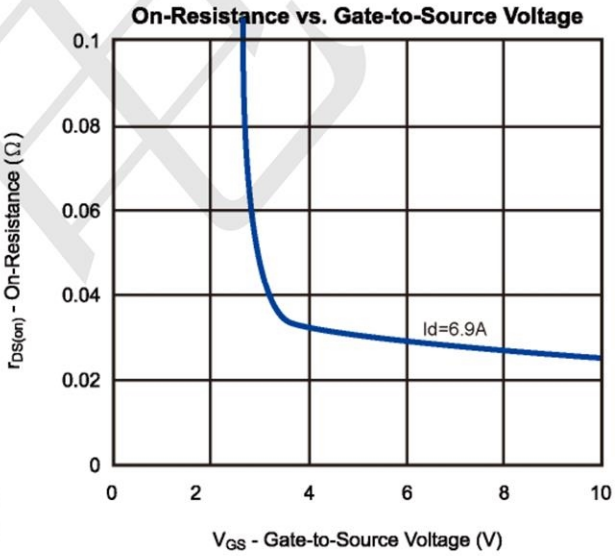
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	30			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1		3	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V, V_{GS}=0V			1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D= 6.9A		18	35	mΩ
		V_{GS}=4.5V, I_D= 5.8A		24	45	
V_{SD}	Diode Forward Voltage	I_S=1.7A, V_{GS}=0V		0.75	1.2	V
DYNAMIC						
Qg	Total Gate Charge	V_{DS}=15V, V_{GS}=10V, I_D=6.9A		11.5		nC
Qgs	Gate-Source Charge			2.7		
Qgd	Gate-Drain Charge			2.3		
Ciss	Input Capacitance	V_{DS}=15V, V_{GS}=0V,f=1MHz		350		pF
Coss	Output Capacitance			65		
Crss	Reverse Transfer Capacitance			16		
td(on)	Turn-On Delay Time	V_{DD}=15V, R_L =15Ω I_D=1A, V_{GEN}=10V R_G=6Ω		9		ns
tr	Turn-On Rise Time			10		
td(off)	Turn-Off Delay Time			32		
tf	Turn-Off Fall Time			3.5		

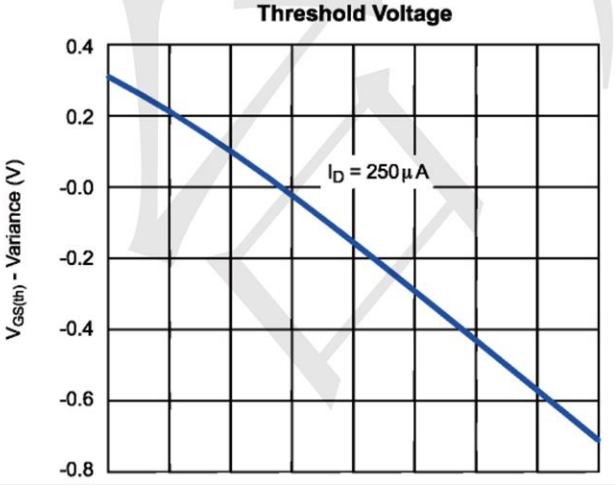
Typical Electrical and Thermal Characteristics

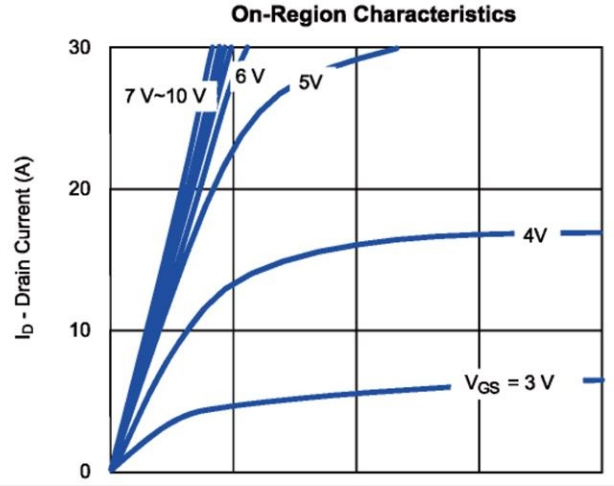




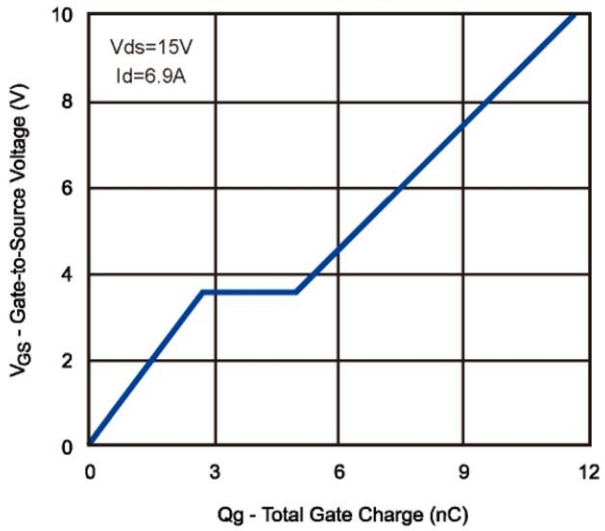




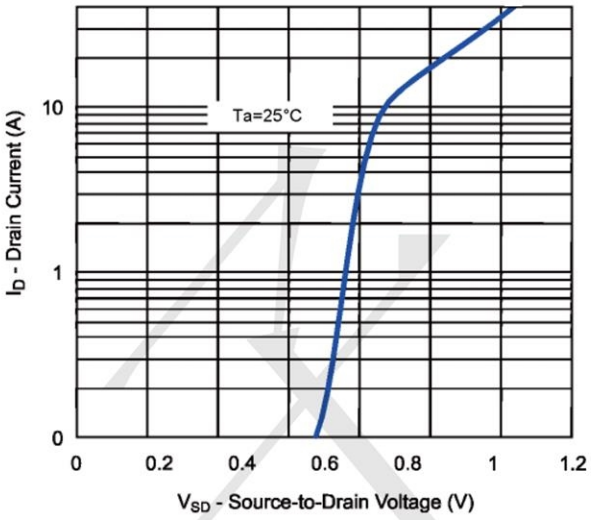




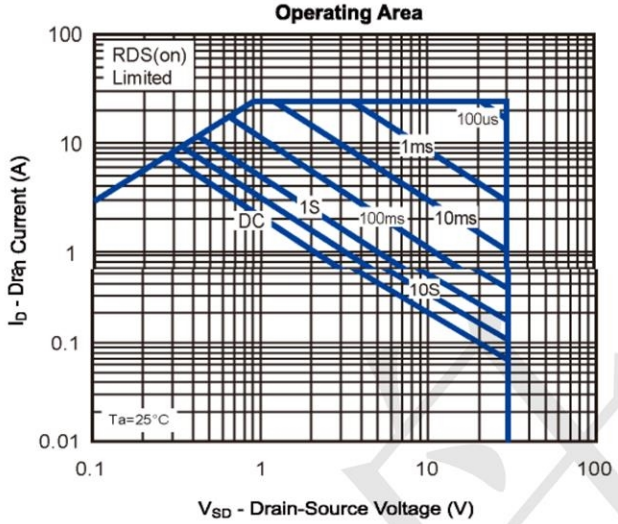
Gate Charge



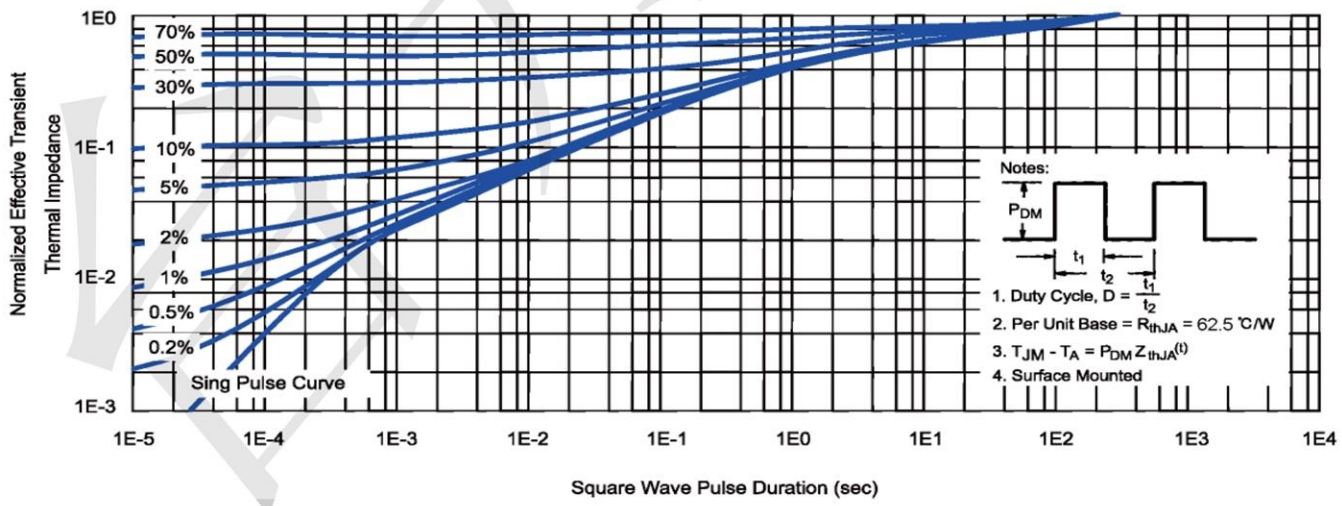
Body-diode characteristics



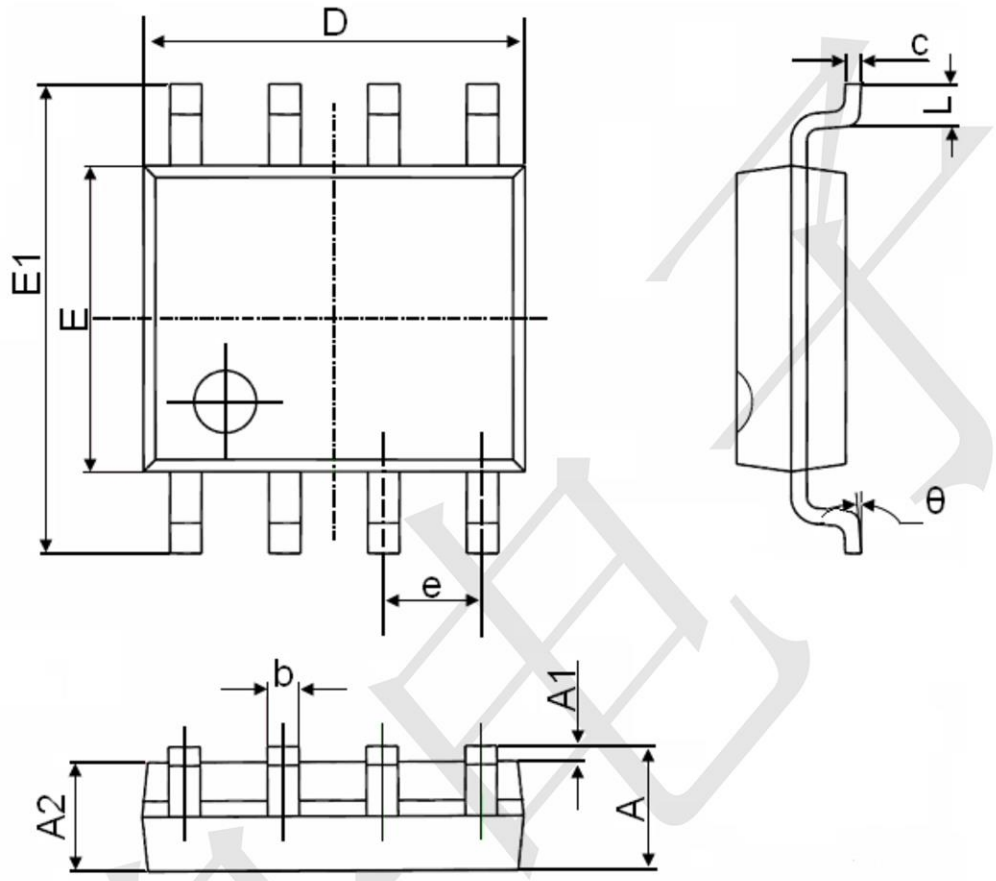
Maximum Forward Biased Safe Operating Area



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°