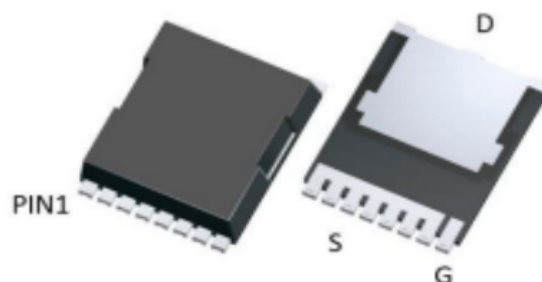
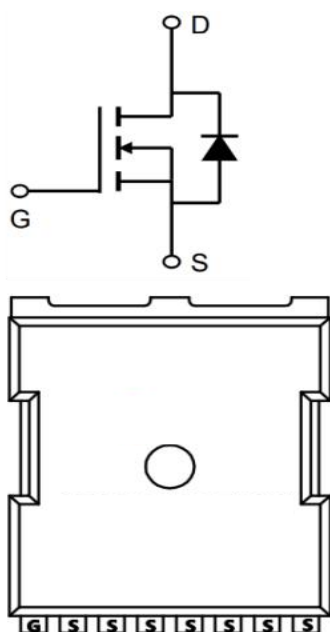


Description

The SX220N08TLG1 uses advanced technology

to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 10V.

This device is suitable for use as a Battery protection
or in other Switching application.



General Features

$$V_{DS} = 80V \quad I_D = 220A$$

$$R_{DS(ON)} < 3.2m\Omega \quad V_{GS}=10V$$

Application

Battery protection

Load switch

Uninterruptible power supply

Absolute Maximum Ratings (T_c=25°C unless otherwise noted)

Symbol	Parameter	Rating	Units
VDS	Drain-Source Voltage	80	V
VGS	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current, V _{GS} @ 10V	220	A
I _D @T _C =100°C	Continuous Drain Current, V _{GS} @ 10V	110	A
IDM	Pulsed Drain Current	480	A
EAS	Single Pulse Avalanche Energy	858	mJ
P _D @T _C =25°C	Total Power Dissipation ⁴	284	W
TSTG	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C
R _{θJA}	Thermal Resistance Junction-Ambient	0.53	°C/W
R _{θJC}	Thermal Resistance Junction-Case	62.5	°C/W

Electrical Characteristics (T_J=25°C, unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V(BR)DSS	Drain-source breakdown voltage	V _{GS} =0V, I _D =250uA	80	92		V
VGS(th)	Gate threshold voltage	V _{DS} =V _{GS} , I _D =250uA T _J =25°C	2.0	3.0	4.0	V
IDSS	Zero gate voltage drain current	V _{DS} =80V, V _{GS} =0V T _J =25°C	-		1	μA
IDSS	Zero gate voltage drain current	V _{DS} =80V, V _{GS} =0V T _J =125°C		- 5		μA
IGSS	Gate-source leakage current	V _{GS} =20V, V _{DS} =0V	-	-	100	nA
RDS(on)	Drain-source on-state resistance	V _{GS} =10V, I _D =50A, T _J =25°C	-	2.4	3.2	mΩ
gfs	Transconductance	V _{DS} =5V, I _D =40A	-	106	-	S
Ciss	Input Capacitance	V _{GS} =0V, V _{DS} =40V, f=1MHz	-	6813	-	pF
Coss	Output Capacitance		-	808	-	pF
Crss	Reverse Transfer Capacitance		-	48	-	pF
Q _G	Gate Total Charge	V _{GS} =10V, V _{DS} =40V, I _D =25A	-	91	-	nC
Q _{gs}	Gate-Source charge		-	37	-	nC
Q _{gd}	Gate-Drain charge		-	25	-	nC
td(on)	Turn-on delay time	T _J =25°C, V _{GS} =10V, V _{DS} =40V, R _L =3Ω	-	38	-	ns
t _r	Rise time		-	58	-	ns
td(off)	Turn-off delay time		-	63	-	ns
t _f	Fall time		-	32	-	ns
R _G	Gate resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz	-	2	-	Ω
VSD	Body Diode Forward Voltage	V _{GS} =0V, I _{SD} =50A	-	0.85	1.2	V
t _{rr}	Body Diode Reverse Recovery Time	I _F =20A, dI/dt=500A/μs	-	85	-	ns
Q _{rr}	Body Diode Reverse Recovery Charge		-	313	-	nC

Note :

- 1、The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2、The data tested by pulsed , pulse width .The EAS data shows Max. rating .
- 3、The test cond ≅ 300us duty cycle ≅ 2%, duty cycle ition is V_{DD}=64V_{GS}=10V, L=0.1mH, I_{AS}=53.8A
- 4、The power dissipation is limited by 175°C junction temperature
- 5、The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

Typical Characteristics

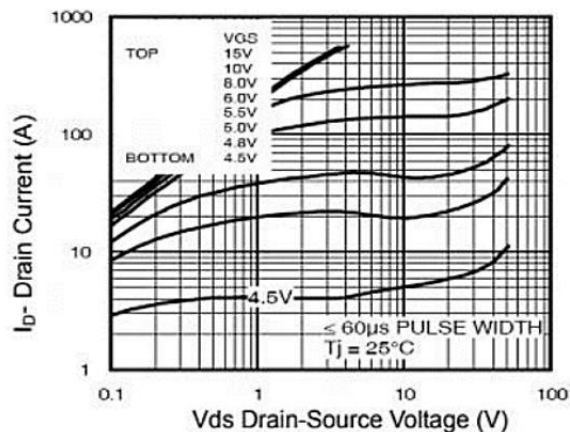


Figure 1 Output Characteristics

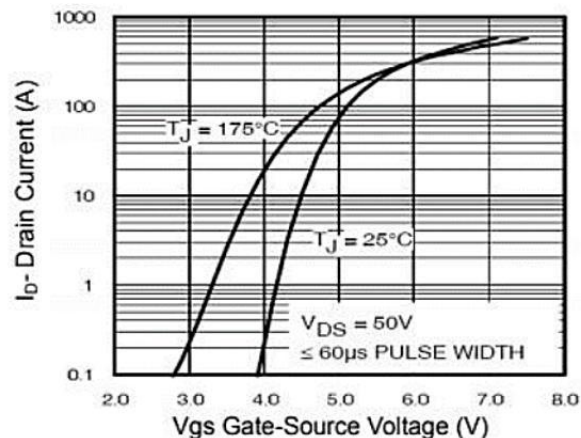


Figure 2 Transfer Characteristics

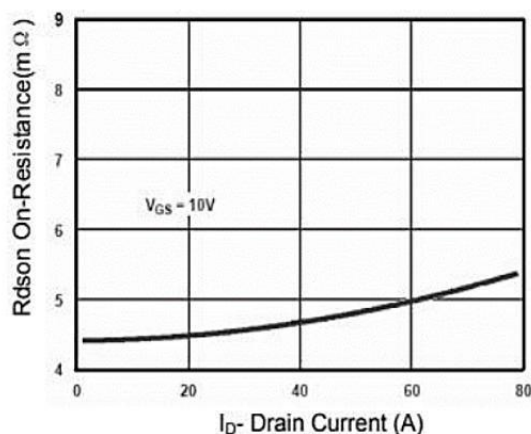


Figure 3 Rdson- Drain Current

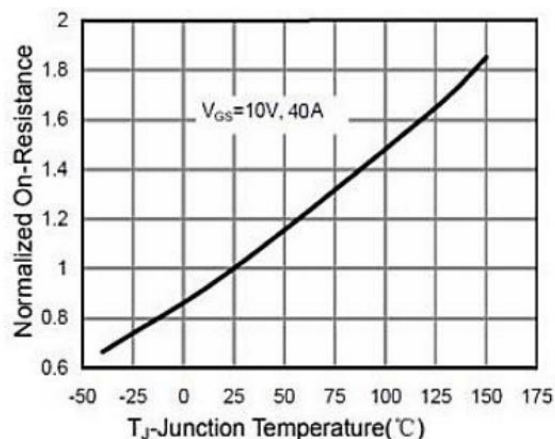


Figure 4 Rdson-Junction Temperature

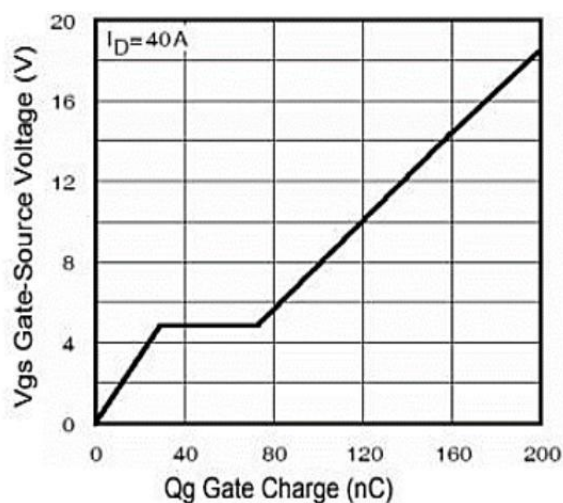


Figure 5 Gate Charge

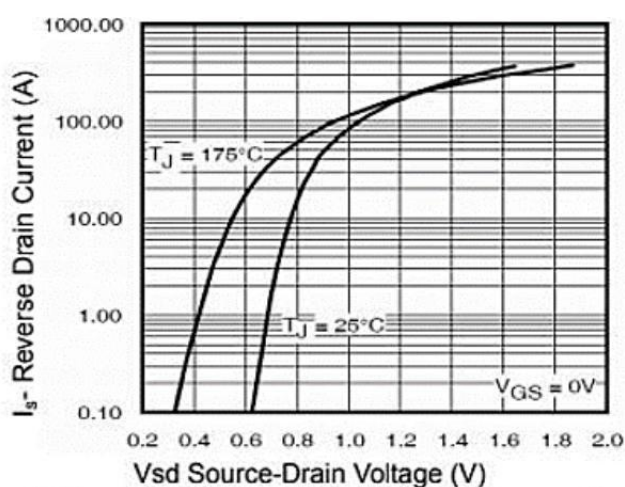


Figure 6 Source- Drain Diode Forward

Typical Characteristics

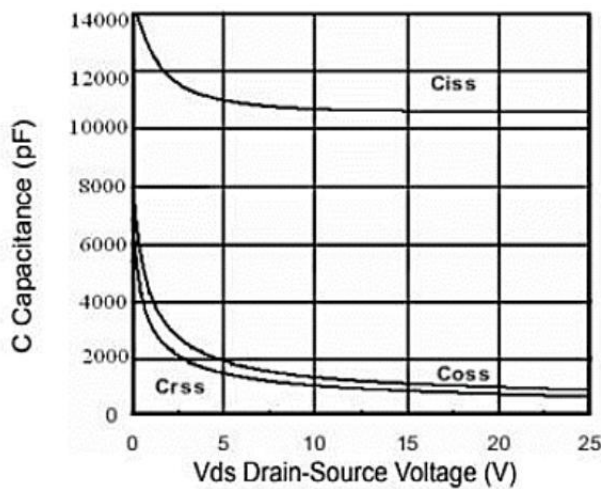


Figure 7 Capacitance vs Vds

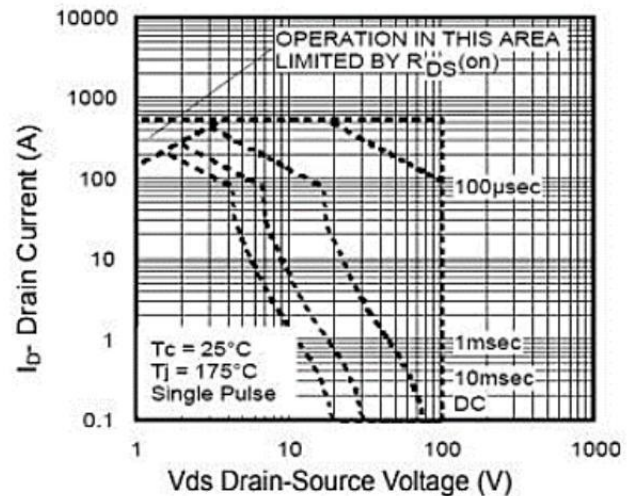


Figure 8 Safe Operation Area

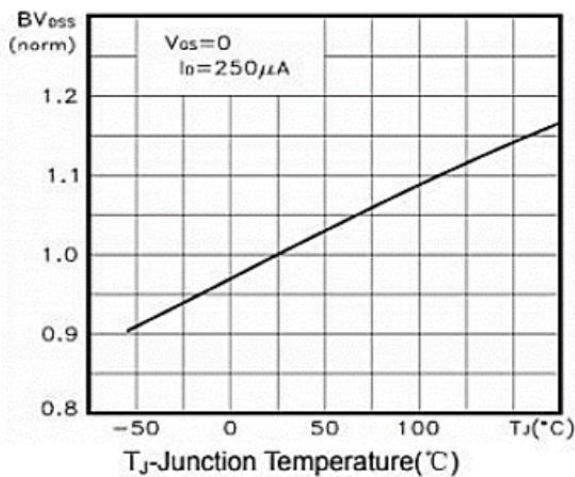


Figure 9 BV_{DSS} vs Junction Temperature

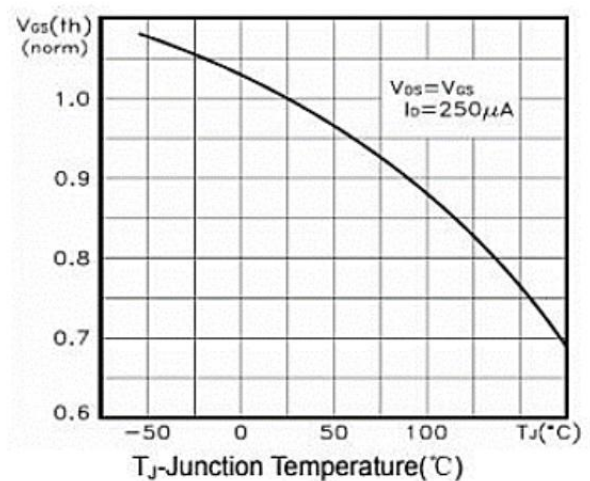


Figure 10 V_{GS(th)} vs Junction Temperature

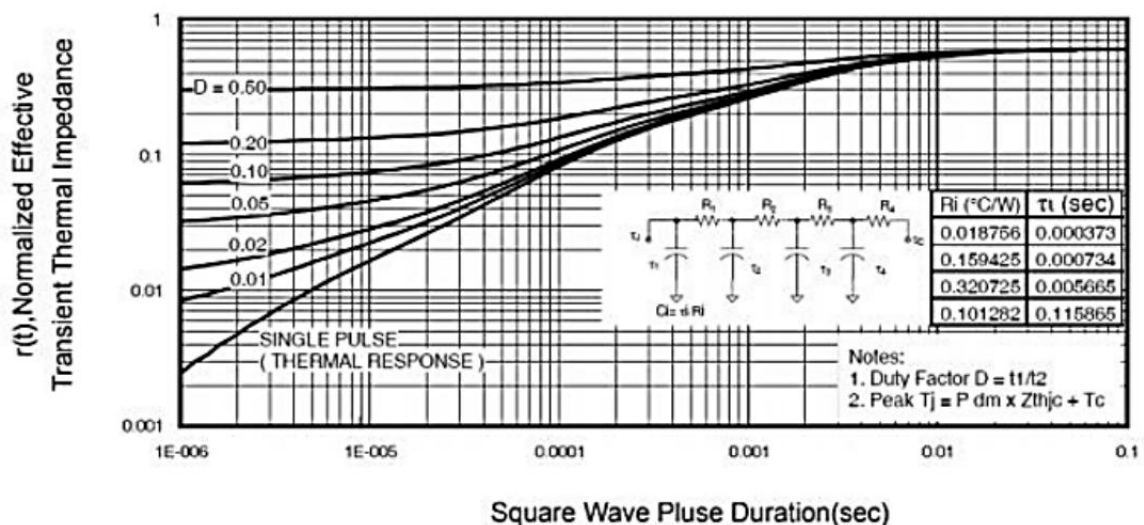
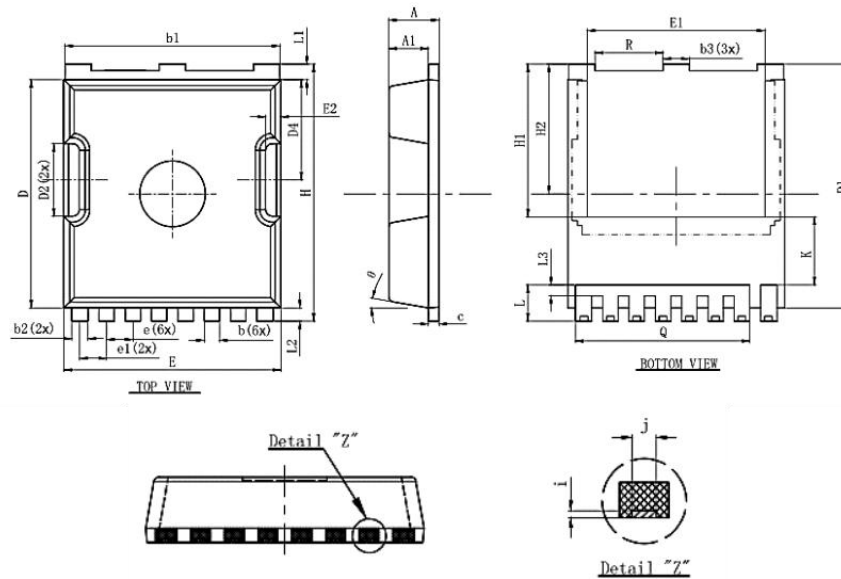


Figure 11 Normalized Maximum Transient Thermal Impedance

Package Mechanical Data-TOLLA-8-XZ Single



Symbol	Dimensions In Millimeters		
	Min.	Nom	Max.
A	2.2	2.3	2.4
A1	1.7	1.8	1.9
b	0.6	0.7	0.8
b1	9.7	9.8	9.9
b2	0.65	0.75	0.85
b3	1.1	1.2	1.3
C	0.4	0.5	0.6
D	10.3	10.4	10.5
D1	11.0	11.1	11.2
D2	3.2	3.3	3.4
D4	4.47	4.57	4.67
E	9.8	9.9	10.0
E1	8.0	8.1	8.2
E2	0.5	0.6	0.7
e	1.200 (BSC)		
e1	1.225 (BSC)		
H	11.6	11.7	11.8
H1	6.95BSC		
H2	5.9BSC		
i	0.1REF		
j	0.350REF		
K	3.100REF		
L	1.55	1.65	1.75
L1	0.6	0.7	0.8
L2	0.5	0.6	0.7
L3	0.4	0.5	0.6
Q	7.95REF		
R	3.0	3.1	3.2
θ	10°REG		

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
TAPING	TOLLA-8L		2000