

Description

The SX340N08MP 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

$V_{DS} = 85V$ $I_D = 340A$

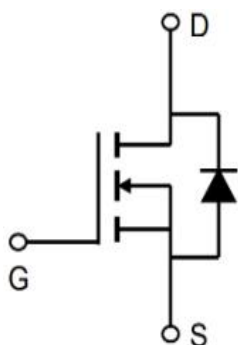
$R_{DS(ON)} < 1.8m\Omega$ @ $V_{GS}=10V$

Application

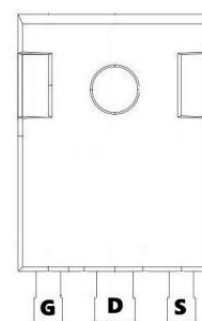
DC/DC Converter

LED Backlighting

Power Management Switches



TO-247-3L



Absolute Maximum Ratings ($T_c=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	85	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_c=25^\circ C$	Continuous Drain Current, V_{GS} @ 10V	340	A
$I_D @ T_c=100^\circ C$	Continuous Drain Current, V_{GS} @ 10V	220	A
I_{DM}	Pulsed Drain Current	960	A
E_{AS}	Single Pulse Avalanche Energy	2025	mJ
I_{AS}	Avalanche Current	53.4	A
$P_D @ T_c=25^\circ C$	Total Power Dissipation ⁴	313	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ C$
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	0.54	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case	40	$^\circ C/W$

Electrical Characteristics (T_C=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V(BR)DSS	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	85	92	-	V
IGSS	Gate-body Leakage current	V _{DS} = 0V, V _{GS} = ±20V	-	-	±100	nA
IDSS	Zero Gate Voltage Drain Current T _J =25°C	V _{DS} =85V, V _{GS} = 0V	-	-	1	μA
	Zero Gate Voltage Drain Current T _J =100°C		-	-	100	
VGS(th)	Gate-Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2.0	3.0	4.0	V
RDS(on)	Drain-Source on-Resistance ⁴	V _{GS} = 10V, I _D = 50A	-	1.5	1.8	mΩ
gfs	Forward Transconductance ⁴	V _{DS} = 5V, I _D = 40A	-	145	-	S
Ciss	Input Capacitance	V _{DS} = 50V, V _{GS} =0V, f =1MHz	-	13590	-	pF
Coss	Output Capacitance		-	2000	-	
Crss	Reverse Transfer Capacitance		-	586.2	-	
R _g	Gate Resistance	f =1MHz	-	2	-	Ω
Q _g	Total Gate Charge	V _{GS} = 10V, V _{DS} = 50V, I _D =20A	-	205	-	nC
Q _{gs}	Gate-Source Charge		-	54	-	
Q _{gd}	Gate-Drain Charge		-	46	-	
td(on)	Turn-on Delay Time	V _{GS} =10V, V _{DD} =40V, R _G =3Ω, I _D = 20A	-	38	-	ns
t _r	Rise Time		-	132	-	
td(off)	Turn-off Delay Time		-	126	-	
t _f	Fall Time		-	153	-	
trr	Body Diode Reverse Recovery Time	I _F =30A, dI/dt=500A/μs	-	112	-	ns
Q _{rr}	Body Diode Reverse Recovery Charge	I _F =30A, dI/dt=500A/μs	-	213	-	nC
VSD	Diode Forward Voltage ⁴	I _S =50A, V _{GS} = 0V	-	0.85	1.2	V
IS	Continuous Source Current T _C =25°C	-	-	-	300	A

Notes:

- 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 ≤ 300us , duty cycle ≤ 2%
- 3、The EAS data shows Max. rating . The test condition is V_{DD}=50V, V_{GS}=10V, L=0.5mH, I_{AS}=50A
- 4、The power dissipation is limited by 150°C junction temperature
- 5、The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

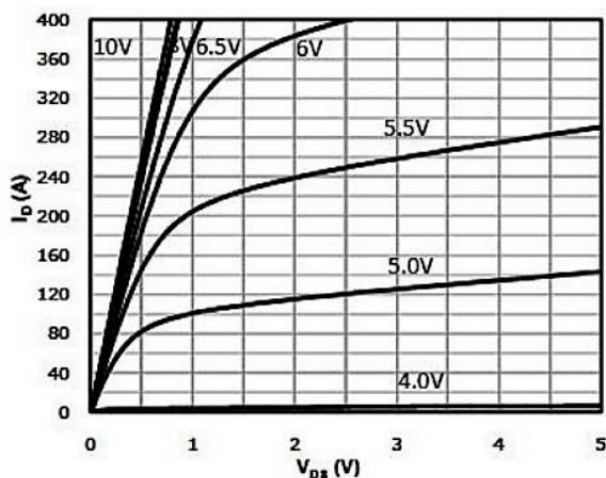


Figure 1. Output Characteristics

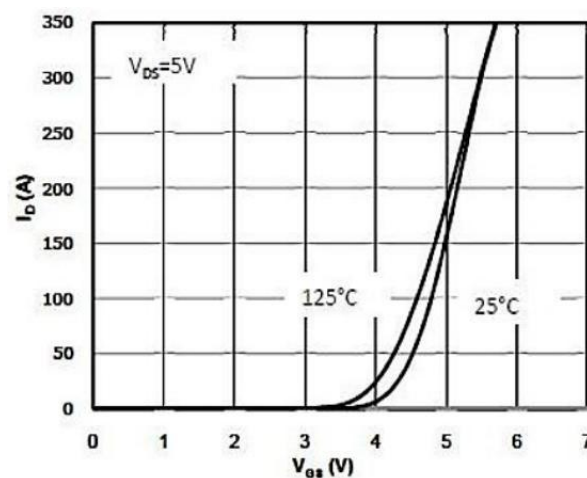


Figure 2. Transfer Characteristics

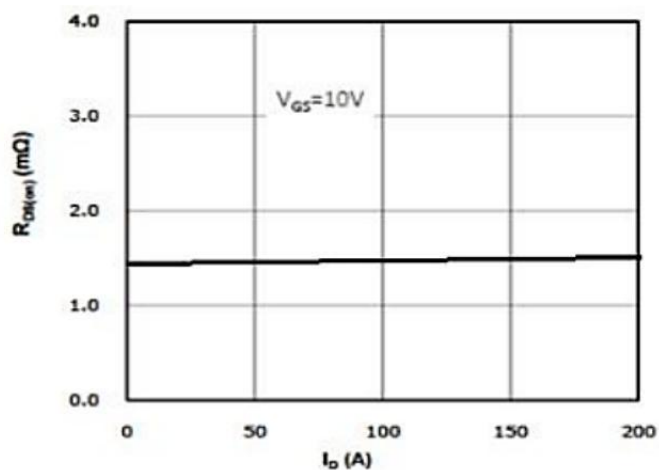


Figure 3. R_DS (ON) VS Drain Current and V_GS

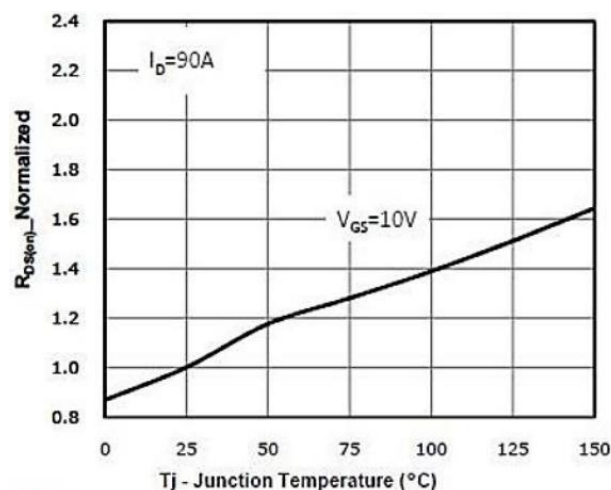


Figure 4. R_DS(ON) vs. V_GS

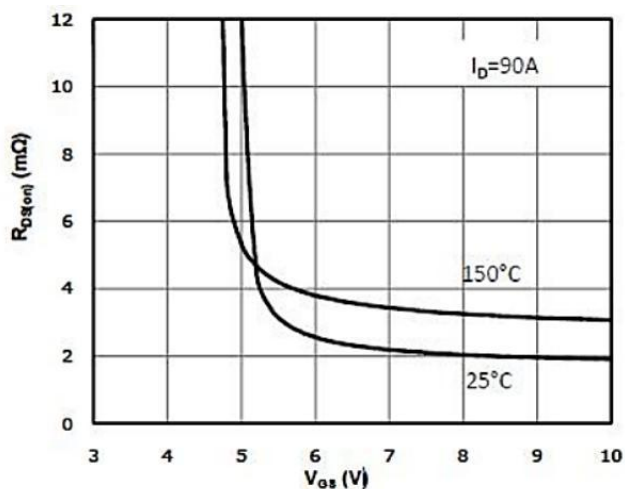


Figure 5. R_DS(ON) vs. Temperature

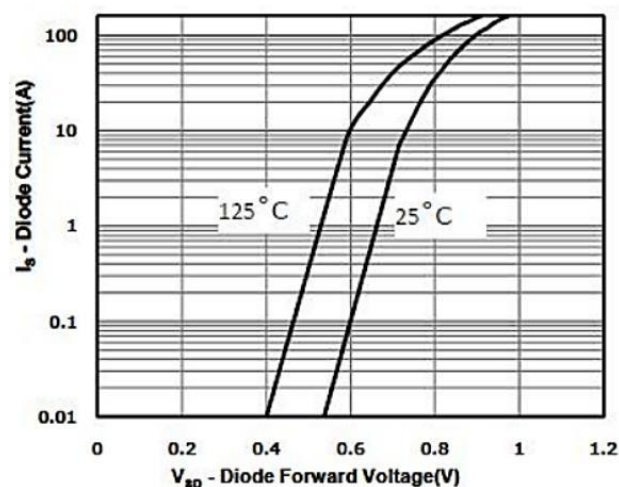


Figure 6. Capacitance Characteristics

Typical Characteristics

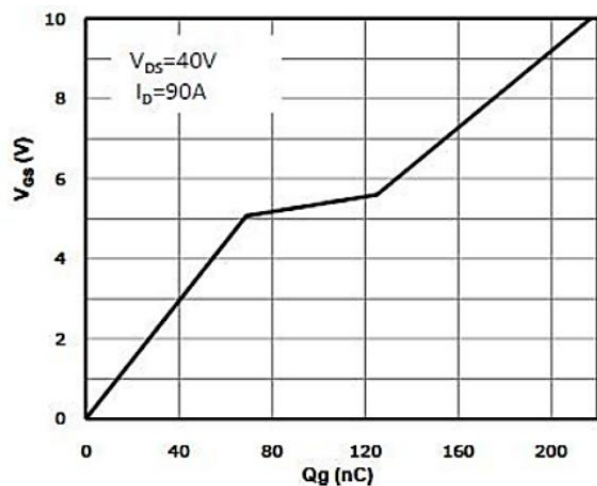


Figure 7. Gate Charge Characteristics

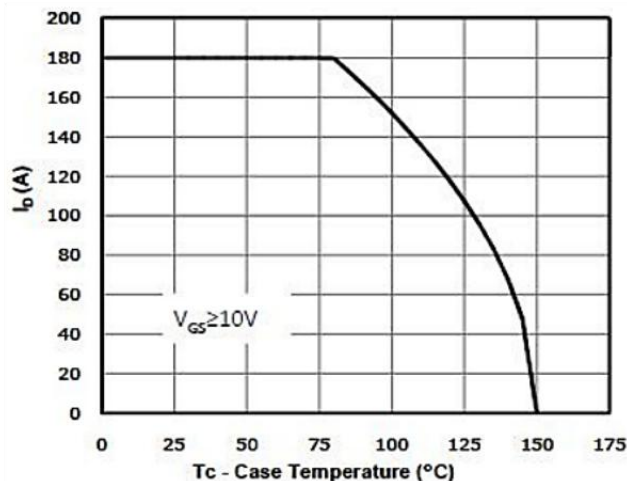


Figure 8. Body-Diode Forward Characteristics

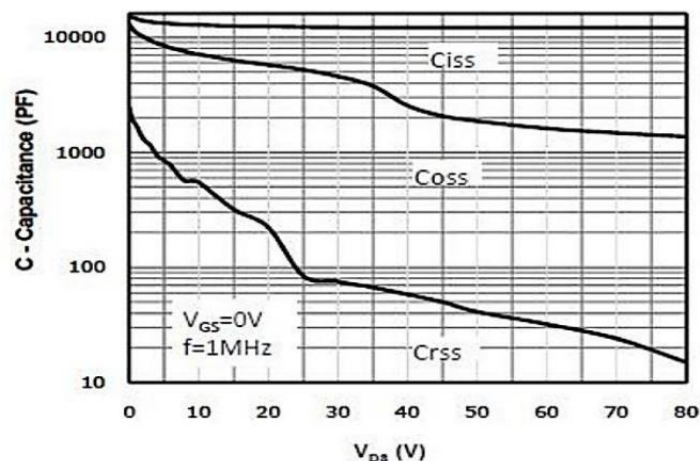


Figure 9. Capacitance Characteristics

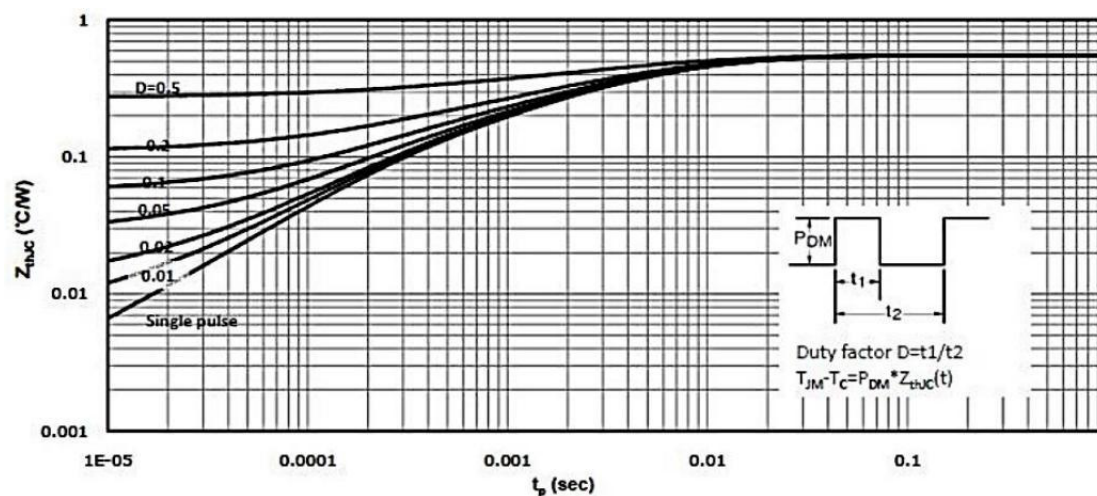
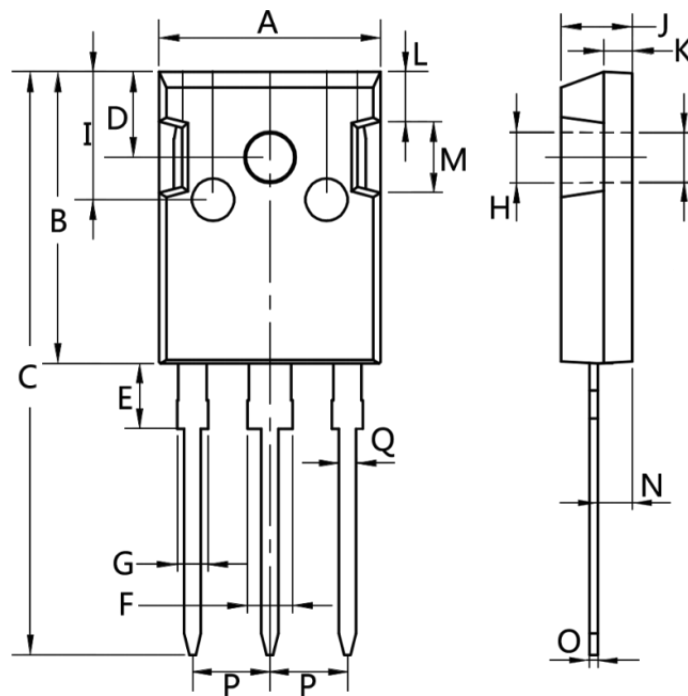


Figure 10. Normalized Maximum Transient Thermal Impedance

Package Mechanical Data-TO-247-3L



Dim.	Min.	Max.
A	15.0	16.0
B	20.0	21.0
C	41.0	42.0
D	5.0	6.0
E	4.0	5.0
F	2.5	3.5
G	1.75	2.5
H	3.0	3.5
I	8.0	10.0
J	4.9	5.1
K	1.9	2.1
L	3.5	4.0
M	4.75	5.25
N	2.0	3.0
O	0.55	0.75
P	Typ 5.08	
Q	1.2	1.3

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
TAPING	TO-247-3L		330