80V N Channel SGT

Feature

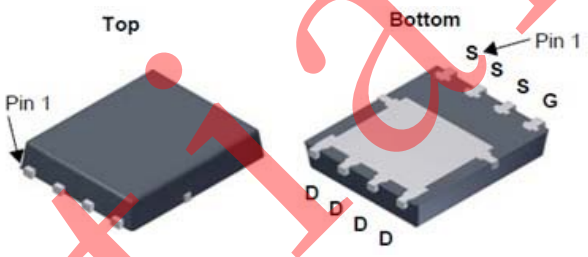
- Extra Low Qg
- Extra Low Ron

Applications

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Product information

V_{DSS}	80	V
$R_{DS(ON)-Max}$	1.86	mΩ
I_D	TBD	A



DFN5x6

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Absolute Maximum Ratings (T_c=25°C Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
V_{DSS}	Drain-Source Voltage		80	V
V_{GSS}	Gate-Source Voltage		±20	
I_{DM}④	Pulse Drain Current Tested		TBD	A
I_D④	Continuous Drain Current, Package Limited	Tc=25°C	TBD	A
		Tc=100°C	TBD	
P_D④	Maximum Power Dissipation		TBD	W
EAS③	Avalanche Energy, Single Pulse		433	mJ
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-50 to 150	°C

Thermal Characteristics

Symbol	Parameter		Rating	Unit
$Rthj_C$①	Thermal Resistance-Junction to Case max	Steady State	TBD	°C/W
$Rthj_A$①	Thermal Resistance-Junction to Ambient max	Steady State	TBD	°C/W

Electrical Characteristics (T_c=25°C Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Electrical Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=1mA	80			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=80V, V_{GS}=0V			1	uA
		V_{DS}=80V, V_{GS}=0V, Tj=125°C			100	uA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=250uA	2	3	4	V
I_{GSS}	Gate Leakage Current	V_{GS}=±20V, V_{DS}=0V		10	100	nA
$R_{DS(ON)}$ ②	Drain-Source On-state Resistance	V_{GS}=10V, I_{DS}=50A		1.55	1.86	mΩ
		V_{GS}=7V, I_{DS}=25A		1.84	2.21	
R_G	Gate Resistance⑤	Open Drain, f=1MHz		1.5	2	Ω
gfs	Transconductance	V_D =2 V , I_D=50A		TBD		S
Dynamic Characteristics						
C_{iss}	Input Capacitance⑤	V_{GS}=0V, V_{DS}=40V, Frequency=1MHz		5622		pF
C_{oss}	Output Capacitance⑤			1361		
C_{rss}	Reverse Transfer Capacitance⑤			17		
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=40V,I_D=25A, V_{GS}=10V, R_{GEN}=2.5Ω		21		nS
t_r	Turn-on Rise Time			74		
$t_{d(OFF)}$	Turn-off Delay Time			45		
t_f	Turn-off Fall Time			71		
Q_g	Total Gate Charge⑤	V_{DD}=40V,V_{GS}=0…10V, I_D=25A		77		nC
Q_{gs}	Gate-Source Charge			27		
Q_{gd}	Gate-Drain Charge⑤			17		
Source-Drain Characteristics						
Is	Diode continuous forward current	T_C =25°C			TBD	A
$I_{S,pulse}$	Diode pulse current	T_C =25°C			TBD	A
V_{SD}	Diode Forward Voltage	I_S=50A, V_{GS}=0V		0.8	1.0	V
t_{rr}	Reverse Recovery Time	I_F=80A,V_R=40V, di_F/dt=100A/us		80		nS
Q_{rr}	Reverse Recovery Charge			139		nC

Note ①：The device mounted on 1in² FR4 board with 2 oz copper.

Drain current limited by maximum junction temperature and package limited.

Note ②：Pulse test: pulse width≦300us, duty cycle≦2%, Guaranteed by design, not subject to production testing.

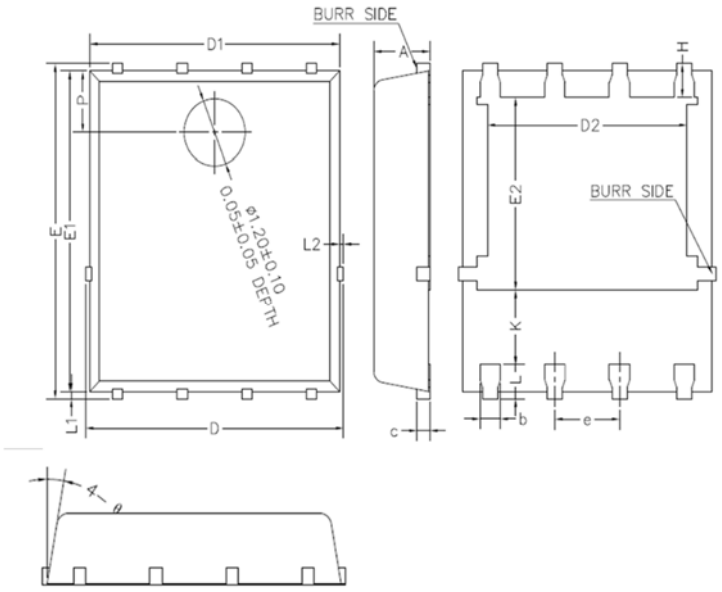
Note ③：VDD< 80V, R_G= 25Ω, Starting T_J= 25°C

Note ④：P_{tot}=(T_j-T_c)/ R_{thjc}; I_D= P_{tot}/ $R_{DS(ON)}$^0.5 ; I_{DM}= I_D x 4

Note ⑤：Defined by design. Not subject to production test.

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Package Outline:



Symbol	Dimensions(mm)		
	Min.	Typ.	Max.
A	1.0	1.10	1.20
b	0.35	0.40	0.45
c	0.21	0.25	0.34
D			5.10
D1	4,80	4.90	5.00
D2	3.91	4.01	4.11
e	1.17	1.27	1.37
E	5.90	6.00	6.10
E1	5.70	5.75	5.80
E2	3.34	3.44	3.54
H	0.51	0.61	0.71
K	1.10		
L	0.51	0.61	0.71
L1	0.06	0.13	0.20
L2			0.10
P	1.00	1.10	1.20
θ	8º	10º	12º

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Revision History:

Revision	Date	Description of change
P001	2025/10/09	Preliminary Datasheet

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