

General Description

The 010N10A uses advanced SGT technology to provide excellent RDS (ON), low gate charge and minimize the loss of power conversion applications. This device is suitable to be used as the low side FET in SMPS, load switching and general purpose.

Product Summary

BVDSS	R _{DS(on)} max.	ID
100V	10mΩ	60A

Applications

- High Frequency Switching
- Synchronous Rectification

TO-252/251 Pin Configuration



Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	100	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	60	A
I _D @T _C =100°C	Continuous Drain Current	38	A
I _{DM}	Pulsed Drain Current	240	A
EAS	Single Pulse Avalanche Energy ¹	220	mJ
P _D @T _C =25°C	Total Power Dissipation	75	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance, Junction-to-Ambient	---	50	°C/W
R _{θJC}	Thermal Resistance Junction -Case	---	1.67	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250μA	100	---	---	V
R _{DS(on)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =20A	---	8.4	10	mΩ
		V _{GS} =4.5V , I _D =15A	---	10.7	13	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250μA	1	1.5	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =100V , V _{GS} =0V	---	---	1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =10A	---	19	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	1.6	---	Ω
Q _g	Total Gate Charge	V _{DD} =50V , I _D =30A V _{GS} =0 to 10V	---	22	---	nC
Q _{gs}	Gate-Source Charge		---	7.5	---	
Q _{gd}	Gate-Drain Charge		---	4.7	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =50V , V _{GS} =10V , R _G =3Ω I _D =30A	---	10	---	ns
T _r	Rise Time		---	5	---	
T _{d(off)}	Turn-Off Delay Time		---	17	---	
T _f	Fall Time		---	4	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	1500	---	pF
C _{oss}	Output Capacitance		---	750	---	
C _{rss}	Reverse Transfer Capacitance		---	30	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Diode continuous forward current	V _G =V _D =0V , Force Current	---	---	60	A
I _{S,pulse}	Diode pulse current		---	---	240	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =15A , T _j =25°C	---	0.84	1.2	V

Notes:

1.The EAS data shows Max. rating . The test condition is V_{DD}=50V , V_{GS}=10V , L=1mH , I_{AS}=21A

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CMOS reserves the right to improve product design ,functions and reliability without notice.

Typical Characteristics

