

General Description

The 035N06 uses advanced trench technology to provide excellent RDS (ON), low gate charge and minimize the loss of power conversion applications.

Features

- Low On-Resistance
- High Current Capability
- 100% avalanche tested
- RoHS Compliant

Product Summary

BVDSS	RDS(ON)	ID
60V	3.5mΩ	100A

Applications

- DC/DC Converters
- Power Supplies
- Power Motor Controls

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	100	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	70	A
I_{DM}	Pulsed Drain Current	400	A
EAS	Single Pulse Avalanche Energy ¹	722	mJ
$P_D @T_C=25^\circ C$	Total Power Dissipation	180	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient(6 cm ² cooling area)	---	40	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.9	°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 =250uA	60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =28A	---	3.2	3.5	mΩ
		V _{GS} =4.5V , I _D =25A	---	3.9	6	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =30V , V _{GS} =0V	---	---	1	uA
		V _{DS} =30V , V _{GS} =0V , T _J =55°C	---	---	5	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =20A	---	40	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	0.7	---	Ω
Q _g	Total Gate Charge	I _D =26A	---	41	---	nC
Q _{gs}	Gate-Source Charge	V _{DD} =30 V	---	14	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	12	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30 V	---	25	---	ns
T _r	Rise Time	I _D =26 A	---	43	---	
T _{d(off)}	Turn-Off Delay Time	R _G =4.7Ω	---	61	---	
T _f	Fall Time	V _{GS} =10V	---	23	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	4050	---	pF
C _{oss}	Output Capacitance		---	1150	---	
C _{rss}	Reverse Transfer Capacitance		---	30	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	100	A
I _{SM}	Pulsed Source Current		---	---	400	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =28A , T _J =25°C	---	0.84	1.2	V

Note :

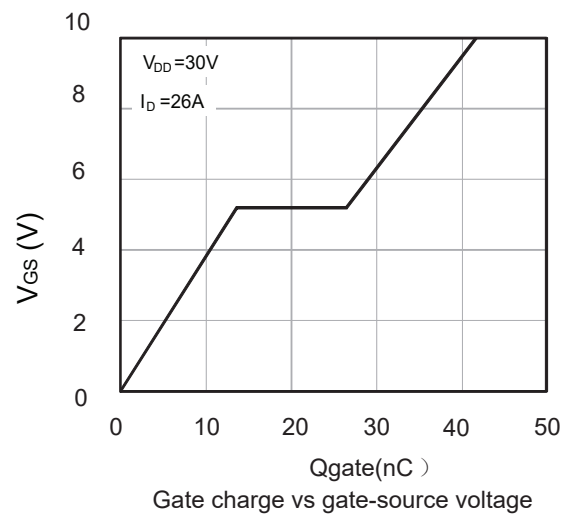
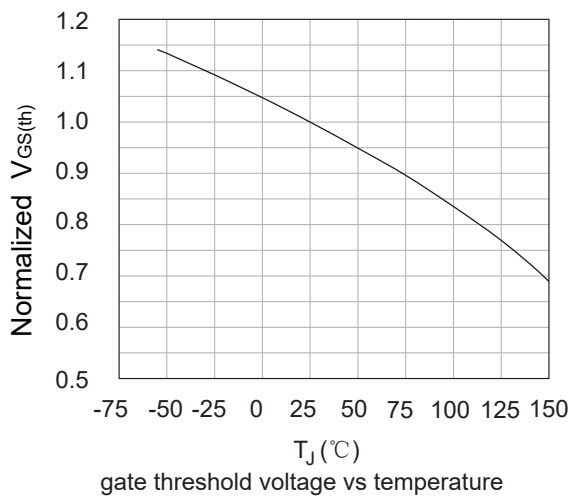
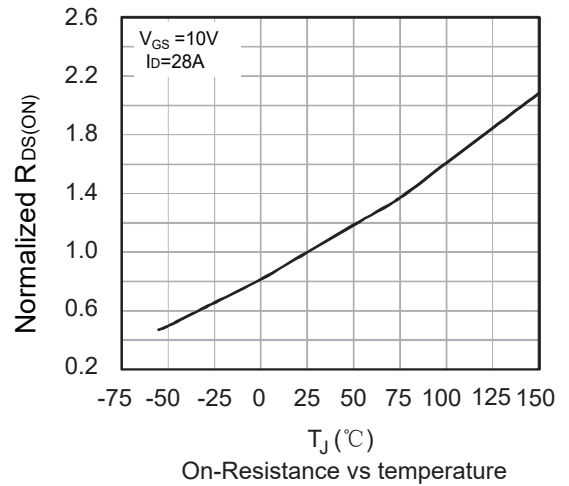
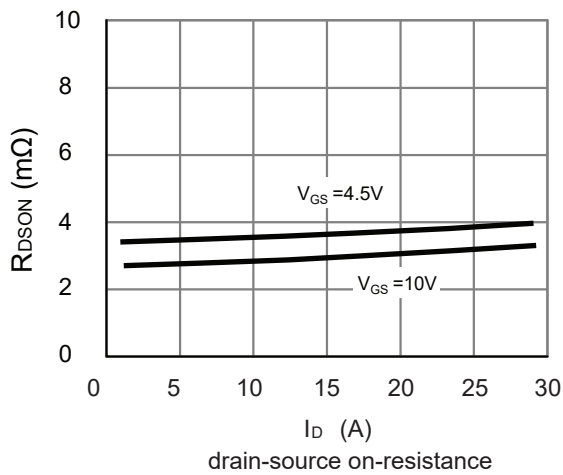
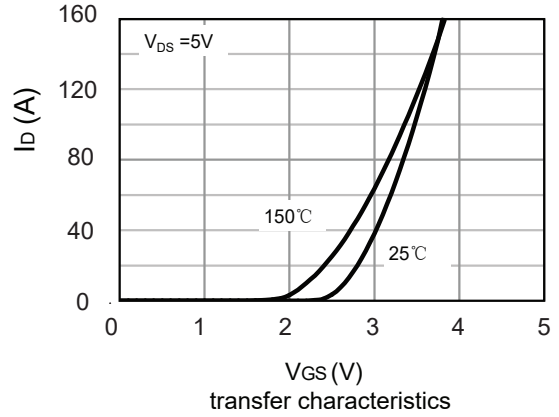
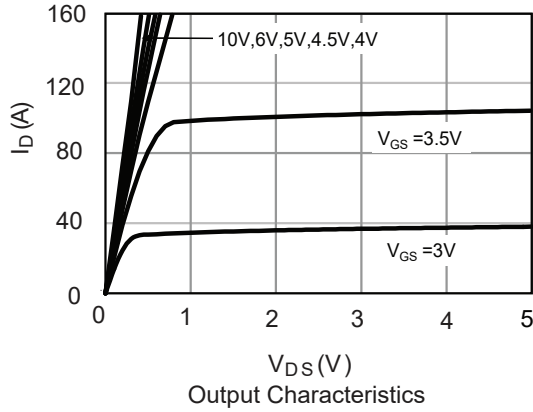
1.The EAS data shows Max. rating . The test condition is V_{DD}=30V,V_{GS}=10V , L=1mH , I_{AS}=38A

This product has been designed and qualified for the consumer market.

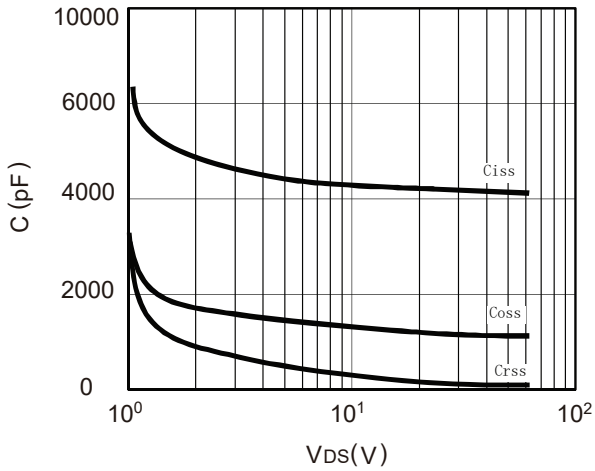
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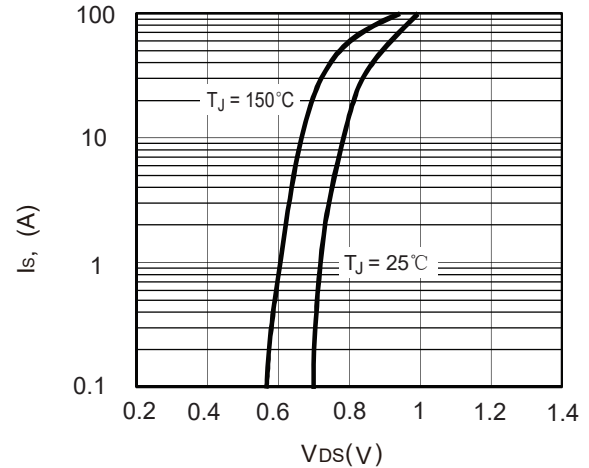
Typical Characteristics



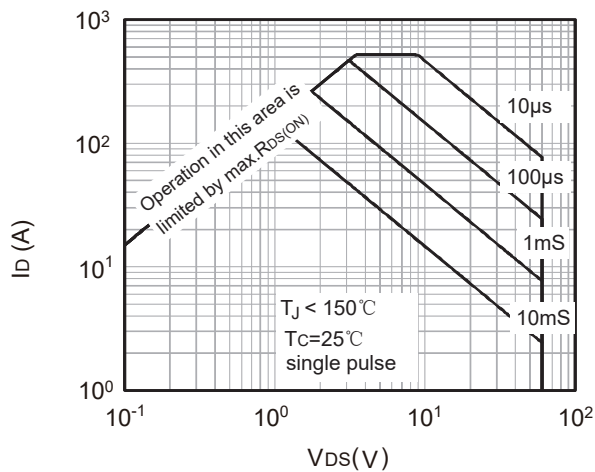
Typical Characteristics



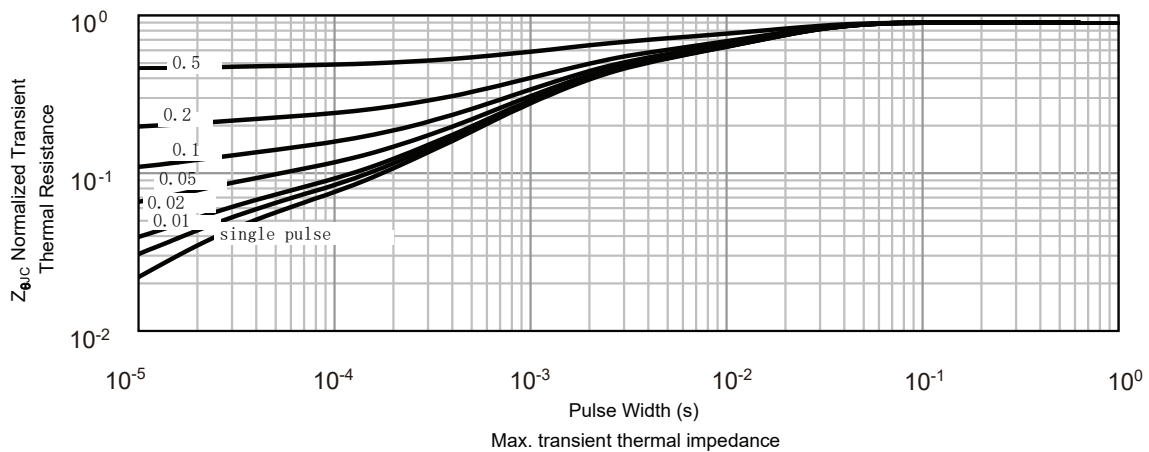
Capacitance Characteristics



Body-Diode Characteristics



Safe operating area



Max. transient thermal impedance