

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

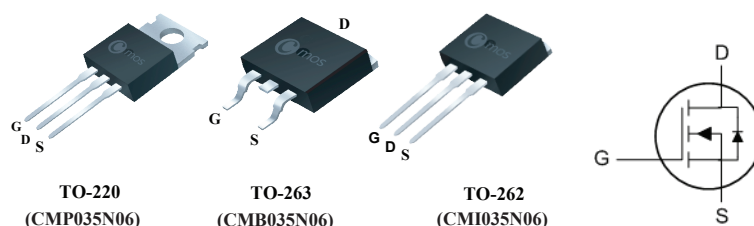
Product Summary

BVDSS	RDS(ON)	ID
60V	3.5mΩ	135A

Applications

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

TO-220/263/262 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D @ T_C = 25^\circ\text{C}$	Continuous Drain Current	135	A
$I_D @ T_C = 100^\circ\text{C}$	Continuous Drain Current	95	A
I_{DM}	Pulsed Drain Current	405	A
EAS	Single Pulse Avalanche Energy ¹	756	mJ
$P_D @ T_C = 25^\circ\text{C}$	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	---	85	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	3.4	°C/W

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=20A$	---	3	3.5	$m\Omega$
		$V_{GS}=4.5V$, $I_D=20A$	---	3.6	6	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=30V$, $V_{GS}=0V$	---	---	1	μA
		$V_{DS}=30V$, $V_{GS}=0V$, $T_J=55^{\circ}\text{C}$	---	---	5	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=20A$	---	35	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1.2	---	Ω
Q_g	Total Gate Charge	$I_D=26A$	---	41	---	nC
Q_{gs}	Gate-Source Charge	$V_{DD}=30V$	---	14	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	12	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V$	---	25	---	ns
T_r	Rise Time	$I_D=26A$	---	43	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=4.7\Omega$	---	61	---	
T_f	Fall Time	$V_{GS}=10V$	---	23	---	
C_{iss}	Input Capacitance	$V_{DS}=30V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	4200	---	pF
C_{oss}	Output Capacitance		---	780	---	
C_{rss}	Reverse Transfer Capacitance		---	12	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	135	A
I_{SM}	Pulsed Source Current		---	---	405	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_F=20A$, $T_J=25^{\circ}\text{C}$	---	0.8	1	V

Note :

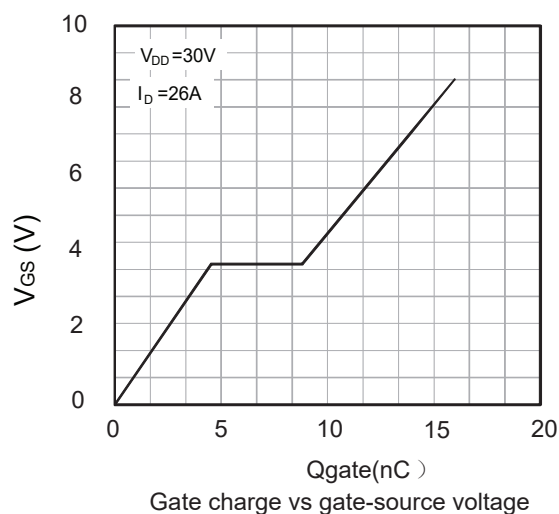
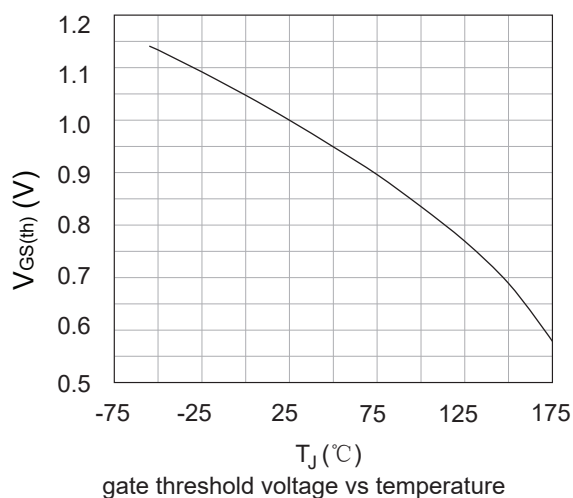
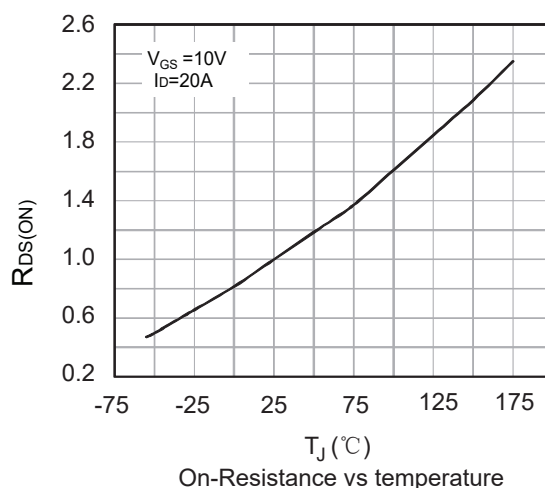
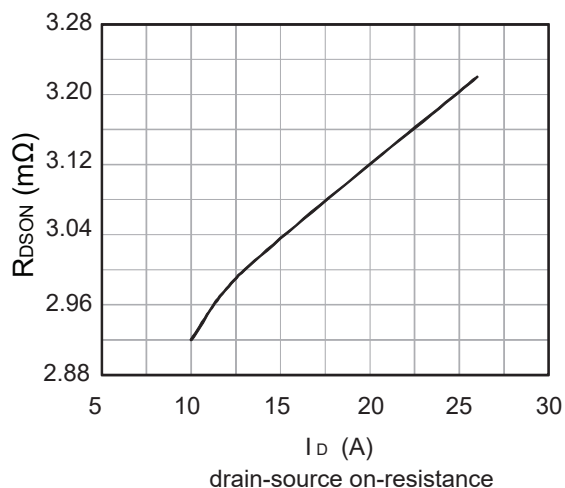
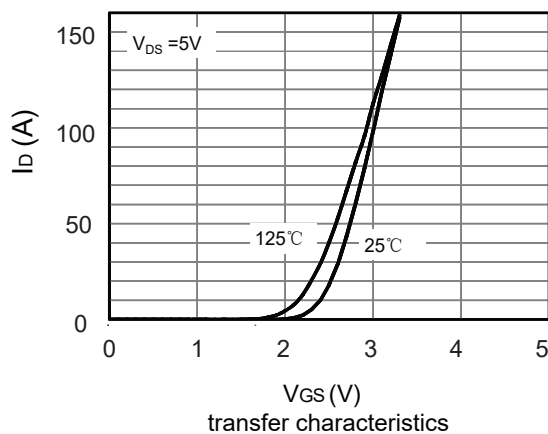
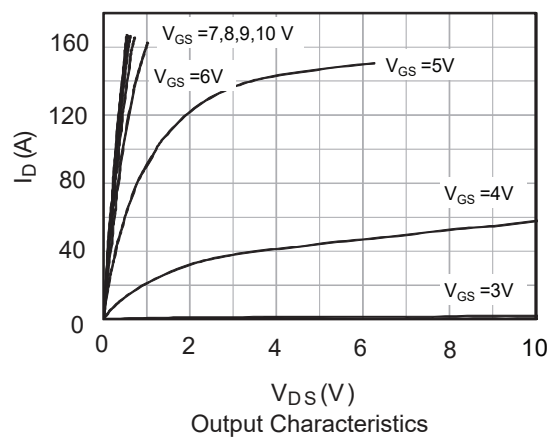
1.The EAS data shows Max. rating . The test condition is $V_{DD}=30V$, $V_{GS}=10V$, $L=0.5mH$, $I_{AS}=55A$

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

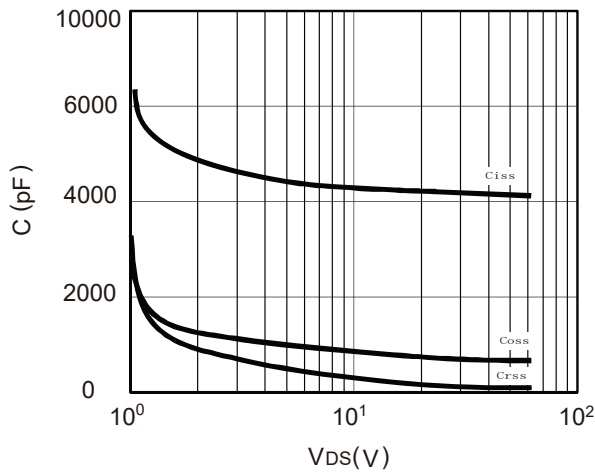
Cmos assumes no liability for customers' product design or applications.

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

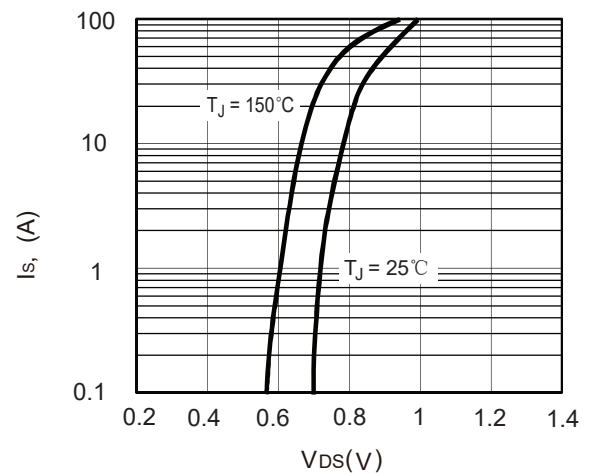
Typical Characteristics



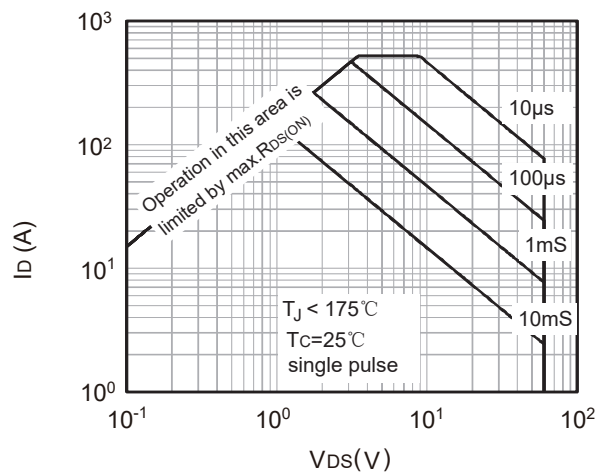
Typical Characteristics



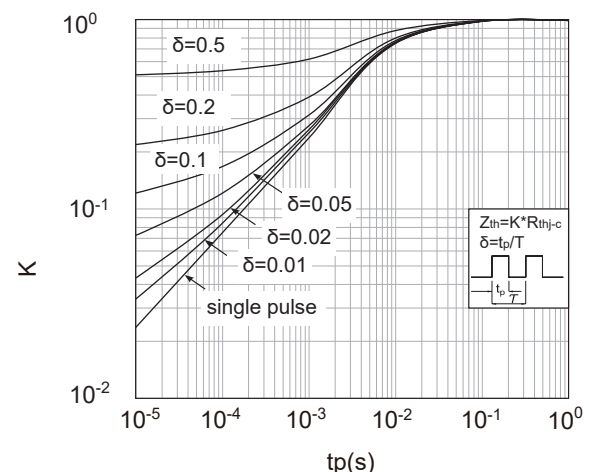
Capacitance Characteristics



Body-Diode Characteristics



Safe operating area



Thermal impedance