

General Description

The 75N06 uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. It can be used in a wide variety of applications

Features

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

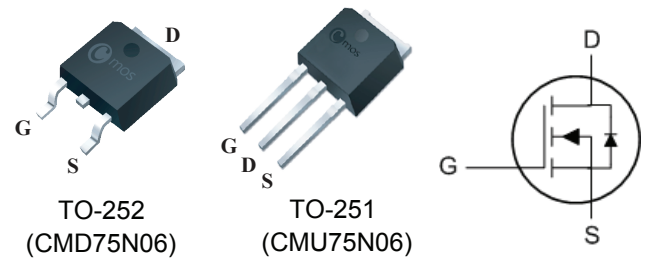
Product Summary

BVDSS	RDSON	ID
60V	12mΩ	75A

Applications

- Power switching application
- Uninterruptible Power Supply
- Hard Switched and High Frequency Circuits

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Value	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	75	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	50	A
I_{DM}	Pulsed Drain Current ¹	230	A
EAS	Single Pulse Avalanche Energy ²	250	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	110	W
T_{STG}	Storage Temperature Range	-55 to 175	°C
T_J	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance Junction-case ²	1.36	°C/W

N-Channel Enhancement Mode Field Effect Transistor

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 =20A	---	---	12	mΩ
		V _{GS} =4.5V , I _D =10A	---	---	16	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =48V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =20A	---	25	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	6	---	Ω
Q _g	Total Gate Charge	I _D =30A V _{DS} =30V V _{GS} = 10V	---	50	---	nC
Q _{gs}	Gate-Source Charge		---	12	---	
Q _{gd}	Gate-Drain Charge		---	15	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V, R _L =15Ω R _G =2.5Ω, I _D =2A V _{GS} =10V	---	16	---	ns
T _r	Rise Time		---	10	---	
T _{d(off)}	Turn-Off Delay Time		---	45	---	
T _f	Fall Time		---	12	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	3800	---	pF
C _{oss}	Output Capacitance		---	235	---	
C _{rss}	Reverse Transfer Capacitance		---	200	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	75	A
I _{SM}	Pulsed Source Current		---	---	230	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =20 A, T _J =25°C	---	---	1.2	V

Note :

- 1.Pulse width limited by safe operating area.
- 2.Starting T_J=25 °C , I_D=32 A, V_{DD}= 20V, L=0.5mH.
- 3.Surface mounted on 1 in² copper pad of FR4 board.

This product has been designed and qualified for the counsumer market.
Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihout notice.