

General Description

The 150N03 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

- Simple Drive Requirement
- Fast Switching
- Low On-Resistance

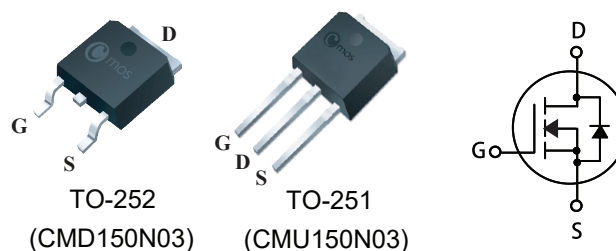
Product Summary

BVDSS	RDSON	ID
30V	2.6mΩ	150A

Applications

- Uninterruptible Power Supply
- DC Motor Control
- Load Switch

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	150	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current ¹	105	A
I_{DM}	Pulsed Drain Current ¹	600	A
EAS	Single Pulse Avalanche Energy ²	506	mJ
P_D	Total Power Dissipation	130	W
T_{STG}	Storage Temperature Range	-55 to 175	°C
T_J	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JC}$	Thermal Resistance Junction-case ¹	---	1.15	°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	$V_{GS}=0V$, $I_D=250\mu A$	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=28A$	---	2.3	2.6	$m\Omega$
		$V_{GS}=4.5V$, $I_D=25A$	---	---	3.5	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	2.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=24V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=20A$	---	52	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1MHz$	---	5	---	Ω
Q_g	Total Gate Charge	$I_D=30A$	---	40	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=15V$	---	10	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	15	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=15V$, $I_D=2A$	---	26	---	ns
T_r	Rise Time	$R_G=2.5\Omega$, $R_L=15\Omega$	---	24	---	
$T_{d(off)}$	Turn-Off Delay Time	$V_{GS}=10V$	---	90	---	
T_f	Fall Time		---	40	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	8500	---	pF
C_{oss}	Output Capacitance		---	1140	---	
C_{rss}	Reverse Transfer Capacitance		---	570	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	150	A
I_{SM}	Pulsed Source Current		---	---	600	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_F=20A$, $T_J=25^{\circ}\text{C}$	---	---	1.3	V

Note :

- 1.Specified by design. Not subject to production test.
- 2.The EAS data shows Max. rating .The test condition is $V_{DS}=25V$, $V_{GS}=10V$, $L=0.5mH$, $I_{AS}=45A$.

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