

### 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

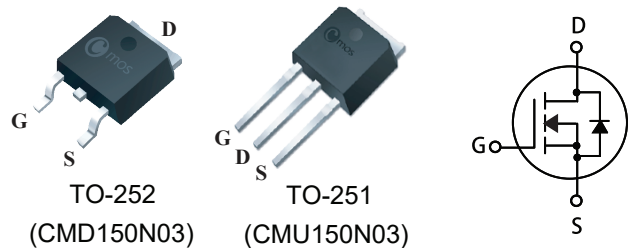
### Product Summary

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 <sup>1</sup>	105	A
$I_{DM}$	Pulsed Drain Current <sup>1</sup>	600	A
EAS	Single Pulse Avalanche Energy <sup>2</sup>	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 <sup>1</sup>	---	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	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	$\pm 100$	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	---	$\Omega$
$Q_g$	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		---	8500	---	pF
$C_{oss}$	Output Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	---	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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