

General Description

The 12P10S 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

- P-Channel
- Low ON-resistance.
- 100% avalanche tested
- RoHS Compliant

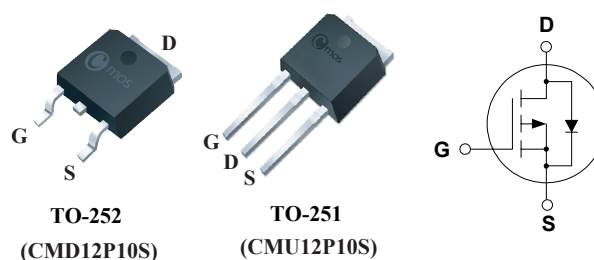
Product Summary

BVDSS	RDSON	ID
-100V	0.24Ω	-9A

Applications

- Power Switch
- DC / DC converter

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	-9	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current	-6.5	A
I_{DM}	Pulsed Drain Current	-36	A
EAS	Single Pulse Avalanche Energy ¹	67	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	40	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	---	50	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	3.1	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-6A$	---	170	240	$m\Omega$
		$V_{GS}=-4.5V$, $I_D=-5A$	---	180	250	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-100V$, $V_{GS}=0V$	---	---	-1	μA
		$V_{DS}=-80V$, $T_C=125^\circ\text{C}$	---	---	-10	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-5V$, $I_D=-10A$	---	20	---	S
Q_g	Total Gate Charge	$I_D=-8A$	---	18	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-80V$	---	5	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=-4.5V$	---	9	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-50V$	---	13	---	ns
T_r	Rise Time	$I_D=-9A$	---	140	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=25\Omega$	---	30	---	
T_f	Fall Time		---	50	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1500	---	pF
C_{oss}	Output Capacitance		---	50	---	
C_{rss}	Reverse Transfer Capacitance		---	40	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	-9	A
I_{SM}	Pulsed Source Current		---	---	-36	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_F=-12A$	---	-0.94	-1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=-50V$, $V_{GS}=-10V$, $L=1mH$, $I_{AS}=-11.6A$.

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Typical Characteristics

