

General Description

These P-Channel enhancement mode power field effect transistors use advanced trench technology and design to provide excellent RDS(ON) . this device ideal for use in power management circuitry. Typical applications are PWM DC-DC converters, power management in portable and battery-powered products such as computers, printers, battery charger, telecommunication power system, and telephones power system.

Features

- Fast switching speed
- Lower On-resistance
- 100% EAS Guaranteed
- Simple Drive Requirement

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	-50	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	-40	A
I_{DM}	Pulsed Drain Current	-150	A
EAS	Single Pulse Avalanche Energy ¹	340	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	100	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient	---	62	$^\circ\text{C/W}$
$R_{\theta JC}$	Junction-to-Case (Drain)	---	1.22	$^\circ\text{C/W}$

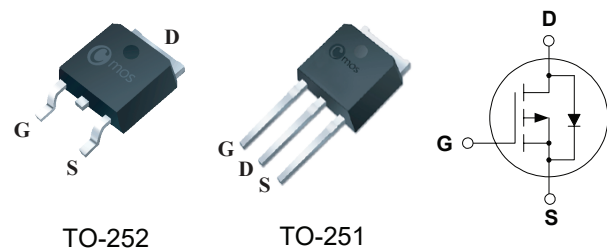
Product Summary

BVDSS	RDSON	ID
-60V	21m Ω	-50A

Applications

- DC-DC Converters
- Power Management in Note book
- Load Switch

TO-252/251 Pin Configuration



Type	Package	Marking
CMD60P06	TO-252	CMD60P06
CMU60P06	TO-251	CMU60P06

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0\text{V}$, $I_D=-250\mu\text{A}$	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10\text{V}$, $I_D=-20\text{A}$	---	---	21	$\text{m}\Omega$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-4.5\text{V}$, $I_D=-15\text{A}$	---	---	24	$\text{m}\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu\text{A}$	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-60\text{V}$, $V_{GS}=0\text{V}$, $T_J=25^{\circ}\text{C}$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20\text{V}$, $V_{DS}=0\text{V}$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-5\text{V}$, $I_D=-10\text{A}$	---	35	---	S
Q_g	Total Gate Charge	$V_{DS}=-48\text{V}$, $I_D=-10\text{A}$ $V_{GS}=-10\text{V}$	---	38	---	nC
Q_{gs}	Gate-Source Charge		---	7	---	
Q_{gd}	Gate-Drain Charge		---	11	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-48\text{V}$, $V_{GS}=-10\text{V}$, $R_G=25\Omega$ $I_D=-5\text{A}$	---	23	---	ns
T_r	Rise Time		---	72	---	
$T_{d(off)}$	Turn-Off Delay Time		---	104	---	
T_f	Fall Time		---	25	---	
C_{iss}	Input Capacitance	$V_{DS}=-25\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	---	4600	---	pF
C_{oss}	Output Capacitance		---	315	---	
C_{rss}	Reverse Transfer Capacitance		---	127	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0\text{V}$, Force Current	---	---	-50	A
I_{SM}	Pulsed Source Current		---	---	-150	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0\text{V}$, $I_F=-20\text{A}$	---	---	-1.2	V

Notes:

1.The test condition is $V_{DD}=-30\text{V}$, $L=0.5\text{mH}$, $I_D=-37\text{A}$.

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.