

### General Description

These P-Channel enhancement mode power field effect transistors use advanced trench technology and design to provide excellent RDS(ON) . This device is suitable for use as a load switch or in PWM applications.

### 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	-30	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D@T_C=25^{\circ}\text{C}$	Continuous Drain Current	-90	A
$I_{DM}$	Pulsed Drain Current	-270	A
EAS	Single Pulse Avalanche Energy	310	mJ
$P_D@T_C=25^{\circ}\text{C}$	Total Power Dissipation	90	W
$T_{STG}$	Storage Temperature Range	-55 to 175	$^{\circ}\text{C}$
$T_J$	Operating Junction Temperature Range	-55 to 175	$^{\circ}\text{C}$

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient	---	40	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case (Drain)	---	1.7	$^{\circ}\text{C}/\text{W}$

### Product Summary

BVDSS	RDSON	ID
-30V	6.4m $\Omega$	-90A

### Applications

- DC-DC Converters
- LCD Display inverter
- Power Management in Note book

### TO-252/251 Pin Configuration



Type	Package	Marking
CMD100P03D	TO-252	CMD100P03D
CMU100P03D	TO-251	CMU100P03D

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V$ , $I_D=-250\mu A$	-30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$ , $I_D=-25A$	---	---	6.4	$m\Omega$
		$V_{GS}=-4.5V$ , $I_D=-20A$	---	---	12	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$ , $I_D=-250\mu A$	-1	---	-3	V
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=-24V$ , $V_{GS}=0V$ , $T_J=25^{\circ}\text{C}$	---	---	-1	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V$ , $V_{DS}=0V$	---	---	$\pm 100$	nA
$g_{fs}$	Forward Transconductance	$V_{DS}=-10V$ , $I_D=-10A$	---	26	---	S
$R_g$	Gate Resistance	$V_{DS}=0V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	5	---	$\Omega$
$Q_g$	Total Gate Charge	$V_{DD}=-24V$ , $I_D=-80A$ $V_{GS}=0$ to $-10V$	---	64	---	nC
$Q_{gs}$	Gate-Source Charge		---	17	---	
$Q_{gd}$	Gate-Drain Charge		---	9	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-15V$ , $V_{GS}=-10V$ , $R_G=3.5\Omega$ $I_D=-80A$	---	9	---	ns
$T_r$	Rise Time		---	5	---	
$T_{d(off)}$	Turn-Off Delay Time		---	16	---	
$T_f$	Fall Time		---	61	---	
$C_{iss}$	Input Capacitance	$V_{DS}=-20V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	4800	---	pF
$C_{oss}$	Output Capacitance		---	1220	---	
$C_{rss}$	Reverse Transfer Capacitance		---	30	---	

### Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$I_S$	Continuous Source Current	$V_G=V_D=0V$ , Force Current	---	---	-90	A
$I_{SM}$	Pulsed Source Current		---	---	-270	A
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V$ , $I_F=-20A$	---	---	-1.2	V

Note :

This product has been designed and qualified for the consumer market.  
Cmos assumes no liability for customers' product design or applications.  
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