CMD5940A/CMU5940A

P-Channel Silicon MOSFET

General Description

The 5940A 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.
- Fast Switching
- 100% avalanche tested

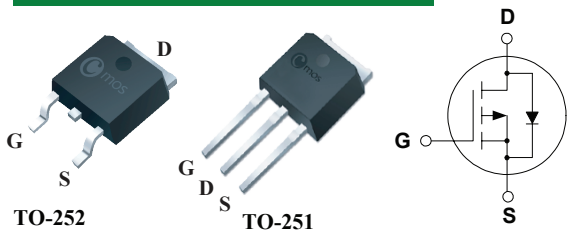
Product Summary

BVDSS	RDSON	ID
-100V	78mΩ	-25A

Applications

- Inverters
- Motor drive
- DC / DC converter

TO-252/251 Pin Configuration



Type	Package	Marking
CMD5940A	TO-252	CMD5940A
CMU5940A	TO-251	CMU5940A

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°C	Continuous Drain Current	-25	A
I_{DM}	Pulsed Drain Current	-75	A
EAS	Single Pulse Avalanche Energy	160	mJ
P_D@T_C=25°C	Total Power Dissipation	65	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.4	°C/W

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250uA	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-6A	---	---	78	mΩ
		V_{GS}=-4.5V , I_D=-6A	---	---	90	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250 uA	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-80V , V_{GS}=0V	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-10V, I_D=-10A	---	18	---	S
Q_g	Total Gate Charge	I_D=-18A V_{DS}=-80V V_{GS}=-10V	---	51	---	nC
Q_{gs}	Gate-Source Charge		---	8	---	
Q_{gd}	Gate-Drain Charge		---	16	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=-50V I_D=-18A R_L=3.3Ω V_{GS}=-10V	---	13	---	ns
T_r	Rise Time		---	34	---	
$T_{d(off)}$	Turn-Off Delay Time		---	60	---	
T_f	Fall Time		---	79	---	
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V , f=1MHz	---	3000	---	pF
C_{oss}	Output Capacitance		---	186	---	
C_{rss}	Reverse Transfer Capacitance		---	140	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
t_{rr}	Reverse Recovery Time	I_S=-18A dI/dt=-100A/μs	---	54	---	ns
Q_{rr}	Reverse Recovery Charge		---	125	---	nC
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=-10A	---	---	-1.2	V

Note :

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