CMD5941/CMU5941

-100V, 103mΩ typ., -25A P-Channel Silicon MOSFET

General Description

The 5941 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.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-100V	125mΩ	-25A

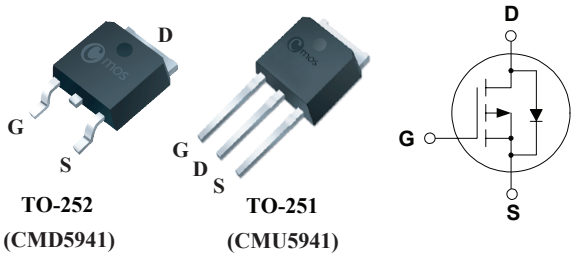
Applications

- Inverters
- Motor drive
- DC / DC converter

Features

- Low ON-resistance
- 100% avalanche tested
- Simple Drive Requirements
- RoHS Compliant

TO-252/251 Pin Configuration



TO-252 (CMD5941)

TO-251 (CMU5941)

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℃	Continuous Drain Current	-25	A
I_D@T_C=100℃	Continuous Drain Current	-17	A
I_{DM}	Pulsed Drain Current	-100	A
EAS	Single Pulse Avalanche Energy [1]	171	mJ
P_D@T_C=25℃	Total Power Dissipation	50	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	2.5	℃/W

-100V, 103mΩ typ., -25A P-Channel Silicon MOSFET

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=-250μA	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-4.5V , I_D=-20A	---	103	125	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-2	---	-4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-85V, V_{GS}=0V , T_J=25℃	---	---	-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	---	13	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	100	---	Ω
Q_g	Total Gate Charge	V_{DS}=-50V , I_D=-20A V_{GS} =-10V	---	65	---	nC
Q_{gs}	Gate-Source Charge		---	10	---	
Q_{gd}	Gate-Drain Charge		---	16	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=-50V, V_{GS}=-10V I_D=-10A , R_L =5.6Ω	---	20	---	ns
T_r	Rise Time		---	100	---	
$T_{d(off)}$	Turn-Off Delay Time		---	280	---	
T_f	Fall Time		---	150	---	
C_{iss}	Input Capacitance	V_{DS}=-25V , V_{GS}=0V , f=1MHz	---	2800	---	pF
C_{oss}	Output Capacitance		---	95	---	
C_{rss}	Reverse Transfer Capacitance		---	50	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	-25	A
I_{SM}	Pulsed Source Current		---	---	-100	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_F=-10A	---	-0.88	-1.3	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=-30V , V_{GS}=-10V , L=1mH , I_{AS}=-18.5A.

This product has been designed and qualified for the counsumer market.
Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.