

General Description

The IRF4905 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
- Fast Switching
- Simple Drive Requirements
- RoHS Compliant

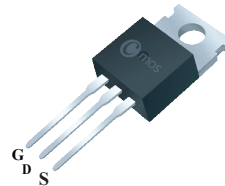
Product Summary

BVDSS	RDSON	ID
-60V	9mΩ	-75A

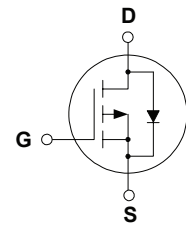
Applications

- Inverters
- Motor drive
- DC / DC converter

TO-220 Pin Configuration



TO-220
(IRF4905)



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	-75	A
I_{DM}	Pulsed Drain Current	-225	A
EAS	Single Pulse Avalanche Energy	1150	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	200	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.75	$^\circ C/W$

Electrical Characteristics (T_J=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =-250uA	-60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V, I _D =-20A	---	---	9	mΩ
		V _{GS} =-4.5V, I _D =-10A	---	---	11	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250 uA	-1	---	-2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-60V , V _{GS} =0V	---	---	-100	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-10V, I _D =-15A	---	27	---	S
Q _g	Total Gate Charge	I _D =-38A V _{DS} =-44V V _{GS} =-10V	---	150	---	nC
Q _{gs}	Gate-Source Charge		---	25	---	
Q _{gd}	Gate-Drain Charge		---	70	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =-28V I _D =-38A R _G =2.5Ω R _D =0.72Ω	---	20	---	ns
T _r	Rise Time		---	100	---	
T _{d(off)}	Turn-Off Delay Time		---	60	---	
T _f	Fall Time		---	95	---	
C _{iss}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V , f=1MHz	---	12000	---	pF
C _{oss}	Output Capacitance		---	1000	---	
C _{rss}	Reverse Transfer Capacitance		---	450	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	-75	A
I _{SM}	Pulsed Source Current		---	---	-225	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =-10A , T _J =25°C	---	---	1.2	V
t _{rr}	Reverse Recovery Time	I _F =-38V , T _J =25°C di _F /dt =100 A/μs	---	90	---	ns
Q _{rr}	Reverse Recovery Charge		---	230	---	nC

Notes

1.The EAS data shows Max. rating . The test condition is VD=-30V, L=3mH, I AS=29A

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Cmos reserves the right to improve product design ,functions and reliability without notice.