EVVOSEMI®
THINK CHANGE DO

ESD TVS MOS LDO Diode Sensor DC-DC

Product Specification

Domestic Part Number	IRFP260N
Overseas Part Number	IRFP260N
Equivalent Part Number	IRFP260N

N-Channel Enhancement Mode Power MOSFET

Description

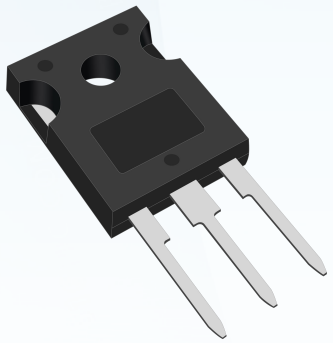
The IRFP260N uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate Charge It can be used in a wide variety of applications.

Application

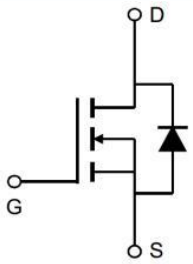
- ☐ Power switching application.
- ☐ Hard switched and high frequency circuits.
- ☐ Uninterruptible power supply.

Features

- ☐ VDS =200V,ID =50A
- ☐ RDS(ON) : 50mΩ @VGS=10V
- ☐ Low gate charge.
- ☐ Green device available.
- ☐ Advanced high cell denity trench technology for ultra low on-resistance.
- ☐ Excellent package for good heat dissipation.



Marking and pin assignment



N-Channel MOSFET

Package Marking and Ordering Information

Part NO.	Marking	Package	Qty(PCS)
IRFP260N	IRFP260N	TO-247	1000

Absolute Maximum Ratings (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain- Source Voltage	200	V
V_{GS}	Gate Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current[1]	50	A
I_D@T_C=100℃	Continuous Drain Current[1]	35	A
I_{DM}	Pulsed Drain Current[3]	200	A
E_{AS},E_{AR}	Avalanche Energy[5]	560	mJ
I_{AS},I_{AR}	Avalanche Current[5]	50	A
P_D@T_C=25℃	Total Power Dissipation[4]	300	W
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case[2]	0.5	℃/W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient [2]	40	℃/W

Electrical Characteristics (TC=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250uA	200	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=10V,I_D=10A	---	50	---	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS},I_D=250uA	2	3	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=200V,V_{GS}=0V,T_J=25℃	---	---	1	uA
		V_{DS}=160V,V_{GS}=0V,T_J=125℃	---	---	10	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V,V_{DS}=0V	---	---	±100	nA
g_{FS}	Forward Transconductance	V_{DS}=10V,I_D=10A	---	27	---	S
Q_g	Total Gate Charge	V_{DS}=160V,V_{GS}=10V,I_D=28A	---	234	---	nC
Q_{gs}	Gate-Source Charge		---	38	---	
Q_{gd}	Gate-Drain Charge		---	110	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=100V,I_{DS}=28A, V_{GEN}=10V,R_G=1.8Ω	---	17	---	nS
T_r	Rise Time		---	60	---	
$T_{d(off)}$	Turn-Off Delay Time		---	55	---	
T_f	Fall Time		---	48	---	
C_{iss}	Input Capacitance	V_{DS}=30V,V_{GS}=0V,f=1MHz	---	4057	---	pF
C_{oss}	Output Capacitance		---	603	---	
C_{rss}	Reverse Transfer Capacitance		---	161	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Curren[1,4]	VG=VD=0V	---	---	50	A
I_{SM}	Pulsed Source Current		---	---	200	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V,I_{SD}=28A,T_J=25℃	---	---	1.3	V
T_{rr}	Reverse Recovery Time	I_S=28A,V_{GS}=10V, di/dt=100A/μsTJ=25℃	---	268	---	nS
Q_{rr}	Reverse Recovery Charge		---	1.9	---	uC

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤2 %.
4. The data is theoretically the same as I D and I DM , in real applications , should be limited by total power dissipation.
5. The EAS test condition is VDD =30V,VGS =10V,L=1.5mH,IAS =50A

N-Ch 200V Fast Switching MOSFETs

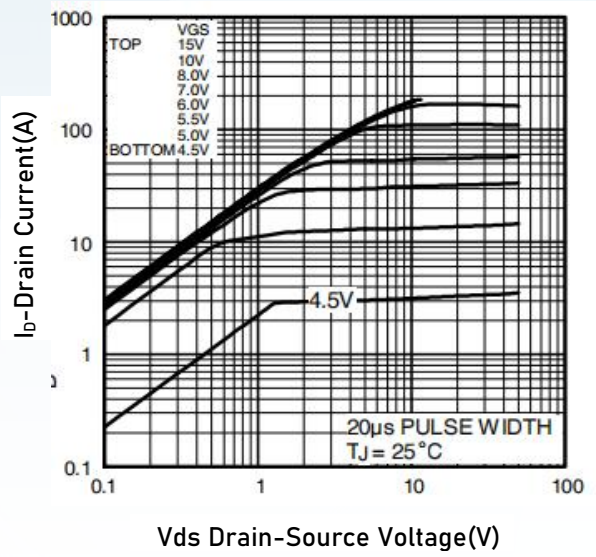


Fig.1 Typical Output Characteristics

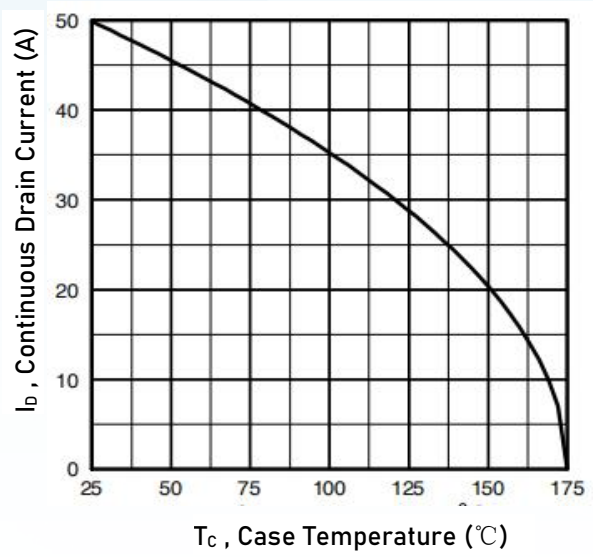


Fig.2 Drain Current

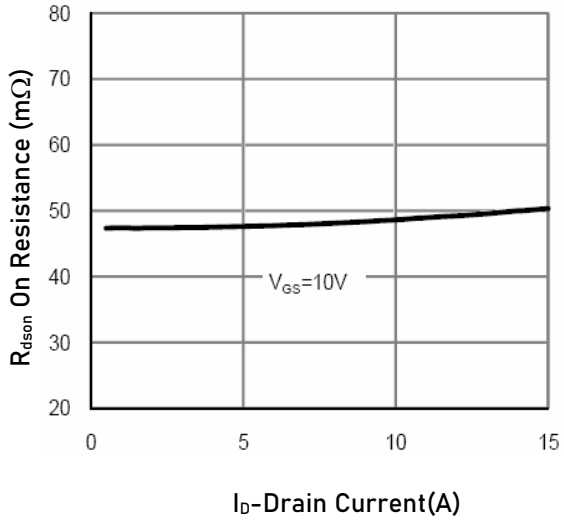


Fig.3 Drain-Source On Resistance

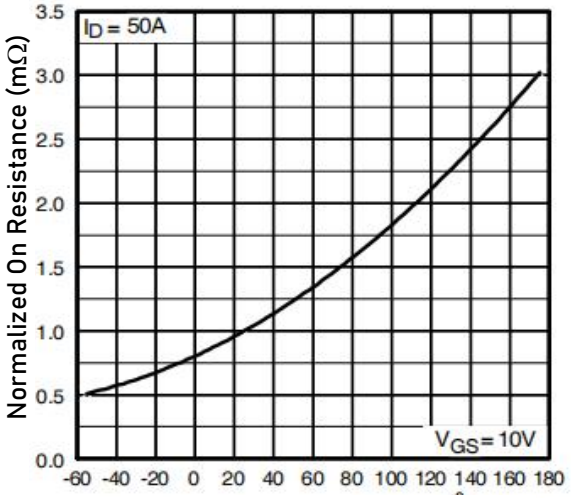


Fig.4 Normalized RDSON vs. T_J

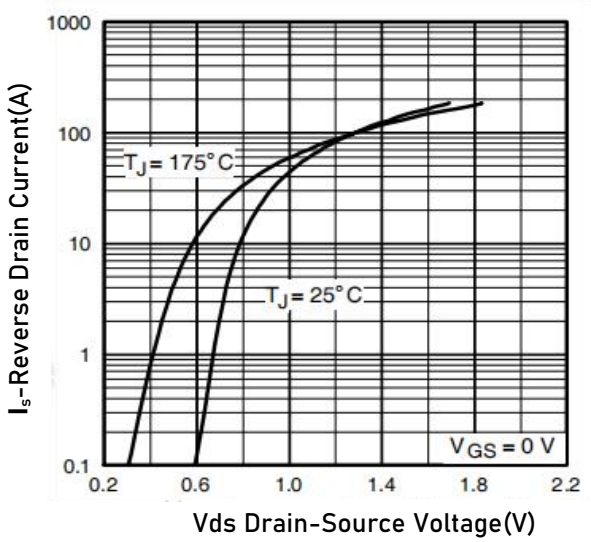


Fig.5 Forward Characteristics Of Reverse

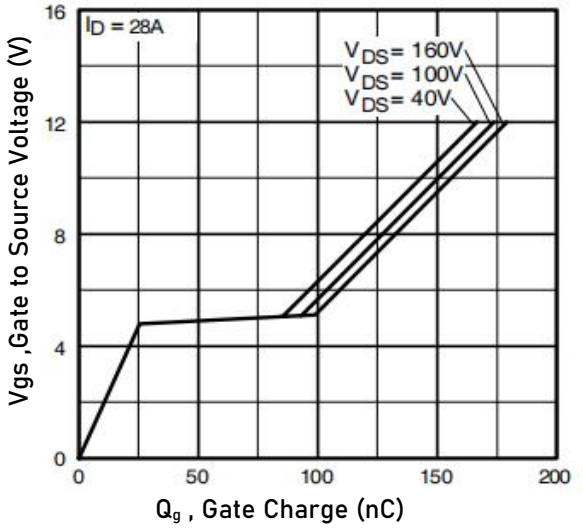


Fig.6 Gate-Charge Characteristics

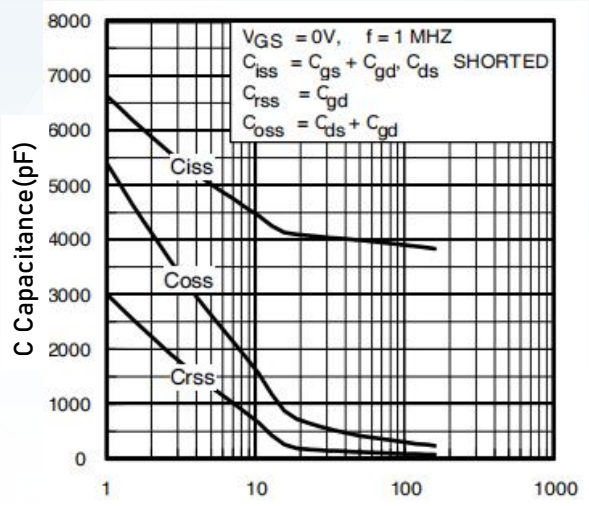


Fig.7 Capacitance

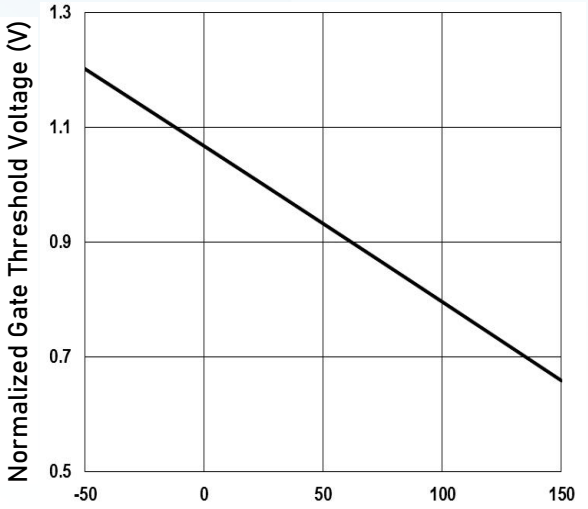


Fig.8 Normalized Vth vs. TJ

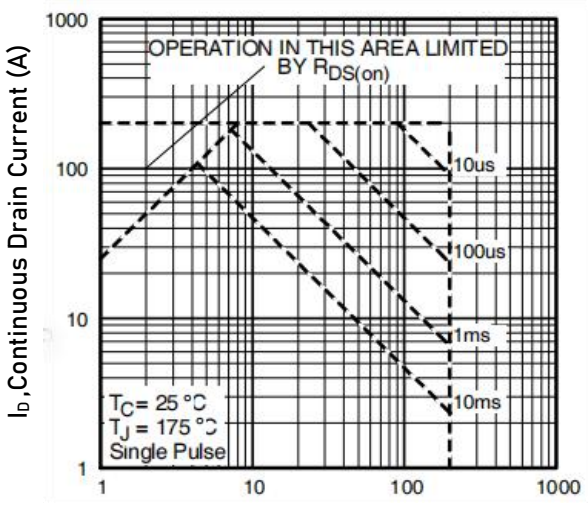


Fig.9 Safe Operating Area

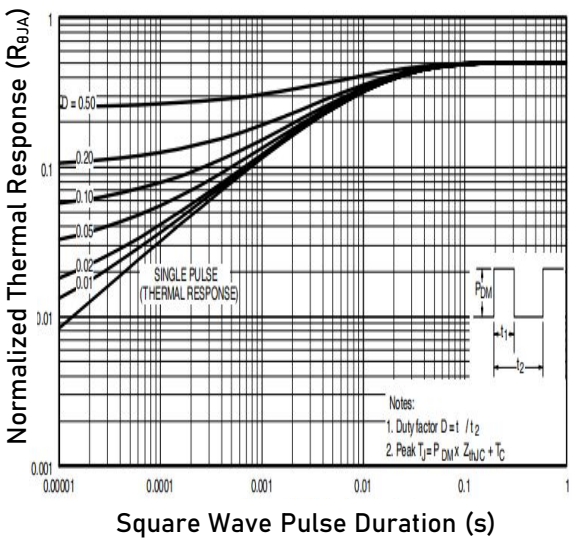
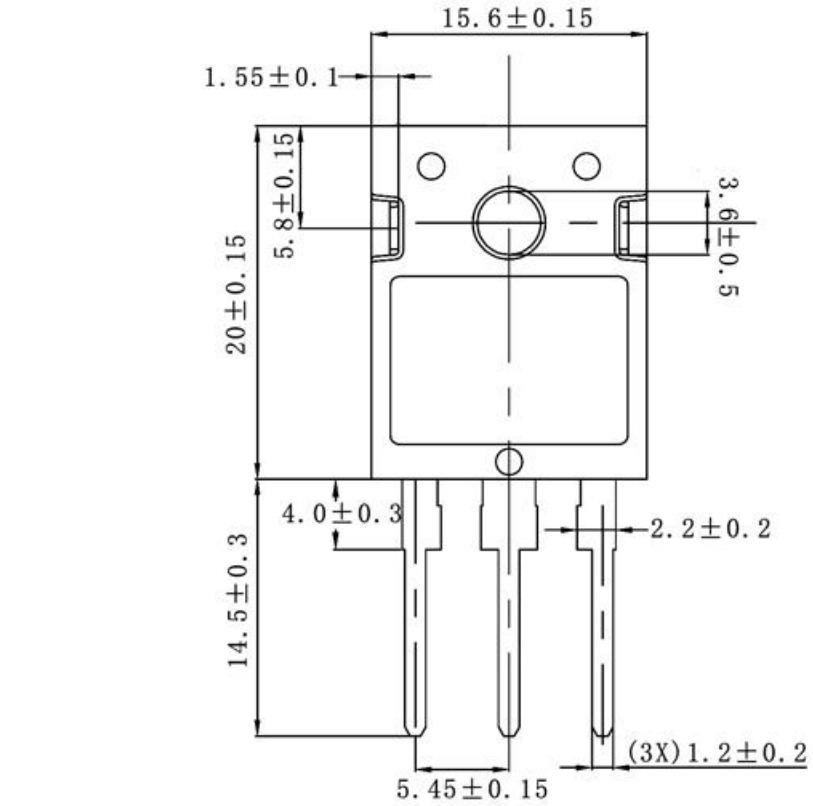
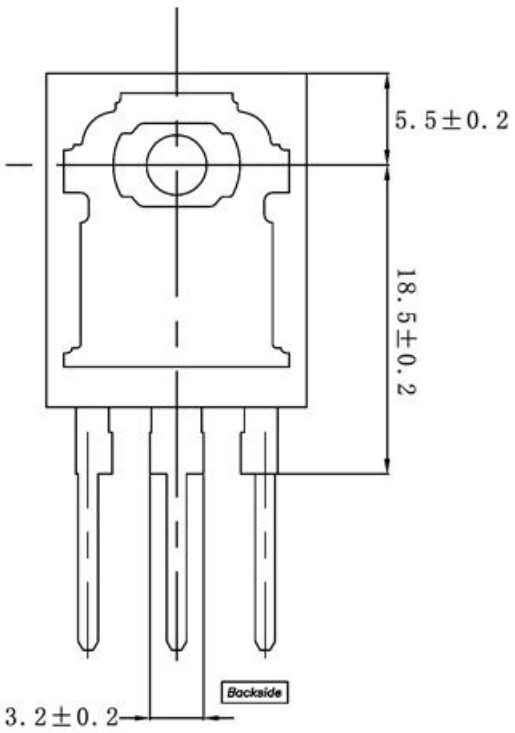
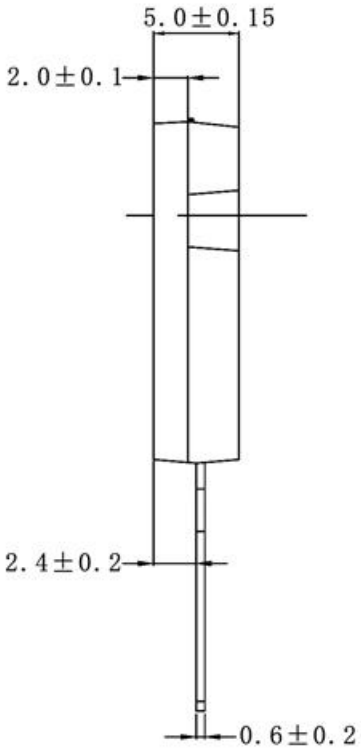


Fig.10 Transient Thermal Impedance

TO-247 Package Information







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