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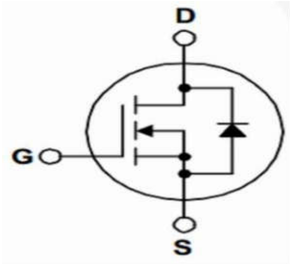
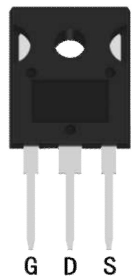
IRFP260N

Silicon N-Channel Power MOSFET

Description

IRFP260N the silicon N-channel Enhanced MOSFETs, is obtained by advanced MOSFET technology which reduce the conduction loss, improve switching performance and enhance the avalanche energy. The transistor is suitable device for SMPS, high speed switching and general purpose applications.





TO247

General Features

① V_{DS}=200V, R_{dson}<50mΩ @V_{GS}=10V, I_D=50A (Typ:40mΩ)
② Fast switching
③ 100% avalanche tested
④ Improved dv/dt capability

Application

① Switch Mode Power Supply (SMPS)
② Uninterruptible Power Supply (UPS)
③ Power Factor Correction (PFC)

Package Marking And Ordering Information：

Ordering Codes	Package	Product Code	Packing
IRFP260N	TO-247	IRFP260N	Tube

Absolute Maximum Ratings TC = 25ºC, unless otherwise noted

Parameter	Symbol	Value	Unit
		TO-247	
Drain-Source Voltage	V_{DSS}	200	V
Continuous Drain Current	I_D	50	A
Pulsed Drain Current(note2)	I_{DM}	200	A
Gate-Source Voltage	V_{GSS}	±20	V
Single Pulse Avalanche Energy (note2)	E_{AS}	780	mJ
Avalanche Current (note1)	I_{AR}	39.5	V/ns
Repetitive Avalanche Energy (note1)	E_{AR}	468	W
Power Dissipation (TC = 25ºC)	P_D	250	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to175	ºC

Thermal Resistance

Parameter	Symbol	Value	Unit
		TO-247	
Thermal Resistance, Junction-to-Case	R_{thJC}	0.5	℃/W
Thermal Resistance, Junction-to-Ambient	R_{thJA}	45	

Specifications TJ = 25ºC, unless otherwise noted

Parameter	Symbol	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	200	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 200V, V_{GS} = 0V, T_J = 25℃	--	--	1	μA
Gate-Source Leakage	I_{GSS}	V_{GS} = +20V,V_{DS}=0V	--	--	100	nA
		V_{GS}=-20V, V_{DS}=0V	--	--	-100	
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = VGS, I_D = 250μA	2.0	--	4.0	V
Drain-Source On-Resistance (Note3)	$R_{DS(on)}$	V_{GS} = 10V, I_D = 25A	--	40	50	mΩ
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1.0MHz	--	3538	--	pF
Output Capacitance	C_{oss}		--	657	--	
Reverse Transfer Capacitance	C_{rss}		--	280	--	
Total Gate Charge	Q_g	V_{DD} =160V, I_D = 25A, V_{GS} = 0 to 10V	--	244	--	nC
Gate-Source Charge	Q_{gs}		--	16	--	
Gate-Drain Charge	Q_{gd}		--	144	--	
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = 100V, I_D =25A, V_{GS}= 10V R_G = 25 Ω	--	53	--	ns
Turn-on Rise Time	t_r		--	65	--	
Turn-off Delay Time	$t_{d(off)}$		--	689	--	
Turn-off Fall Time	t_f		--	230	--	
Continuous Body Diode Current	I_S	T_C = 25℃	--	--	50	A
Pulsed Diode Forward Current	I_{SM}		--	--	200	
Body Diode Voltage	V_{SD}	T_J = 25℃, I_{SD} = 25A, V_{GS} = 0V	--	--	1.5	V
Reverse Recovery Time	t_{rr}	V_{GS} = 0V,I_S = 25A, $d_{iF/dt}$ =100A /μs	--	208	--	ns
Reverse Recovery Charge	Q_{rr}		--	2.04	--	μC

Notes

1.Repetitive Rating: Pulse width limited by maximum junctiontemperature
2.I_{AS} = 30A, V_{DD} = 30V, R_G = 25 Ω, Starting T_J = 25ºC
Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤1%

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Typical Characteristics TJ = 25℃, unless otherwise noted

Figure 1. Output Characteristics (T_J = 25ºC)

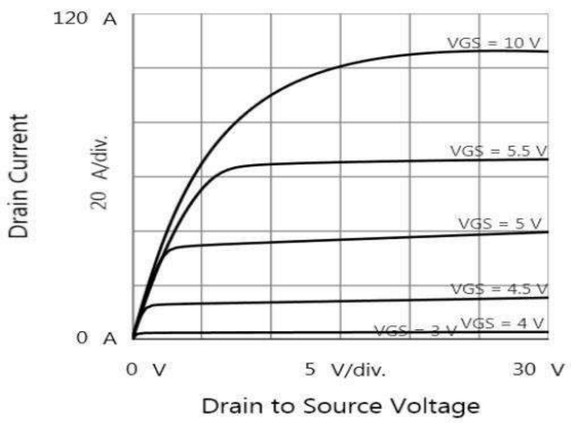


Figure 2. Transfer Characteristics

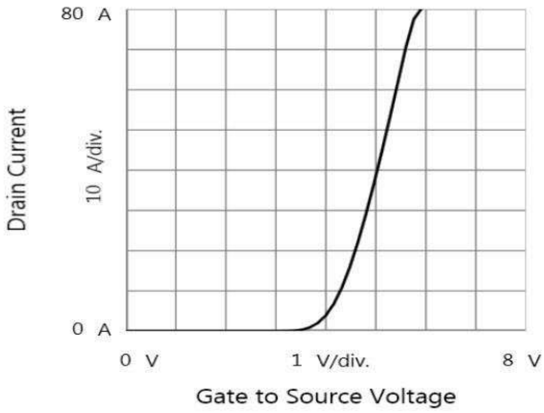


Figure3. Maximum Continuous Drain Current vs Case Temperature

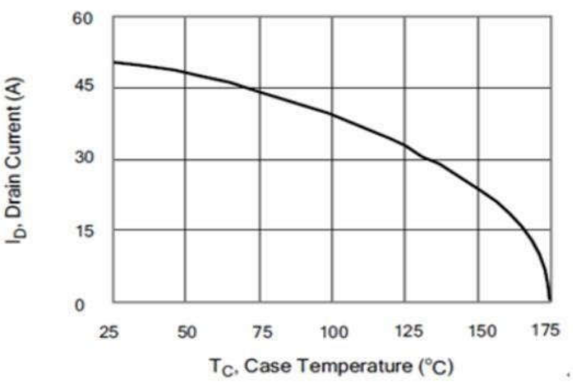


Figure 4. Drain to Source Voltage vs. Gate to Source Voltage

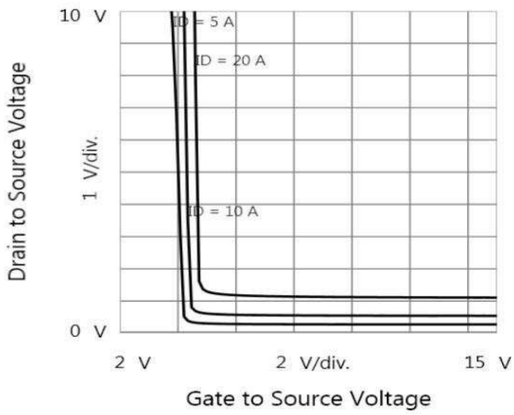


Figure 5 . Typical Breakdown Voltage vs Junction Temperature

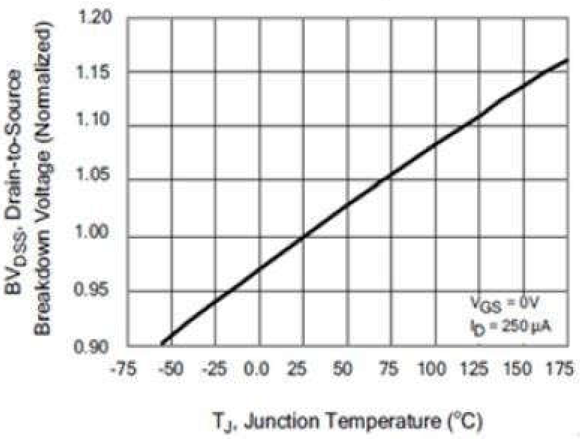
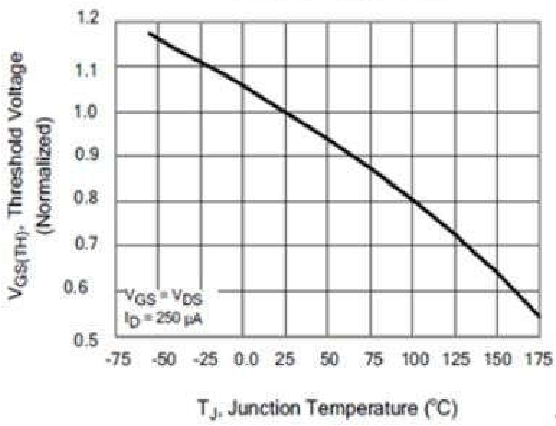


Figure 6 . Typical Threshold Voltage vs Junction Temperature



Typical Characteristics TJ = 25℃, unless otherwise noted

Figure 7. Capacitance

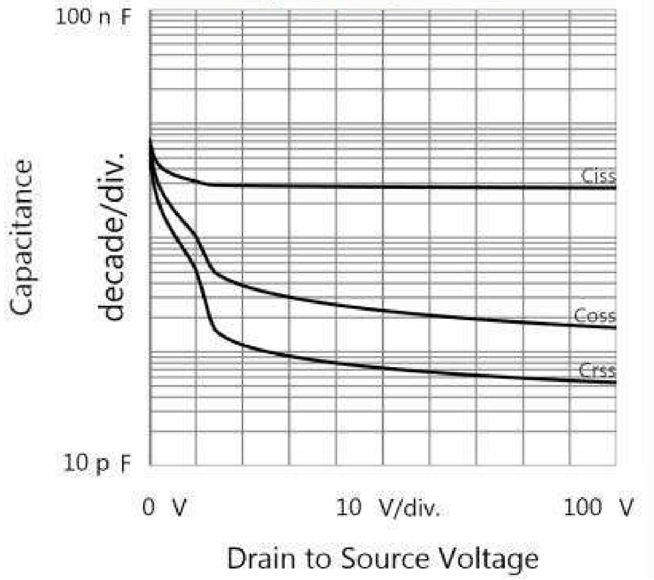


Figure 8. Gate Charge

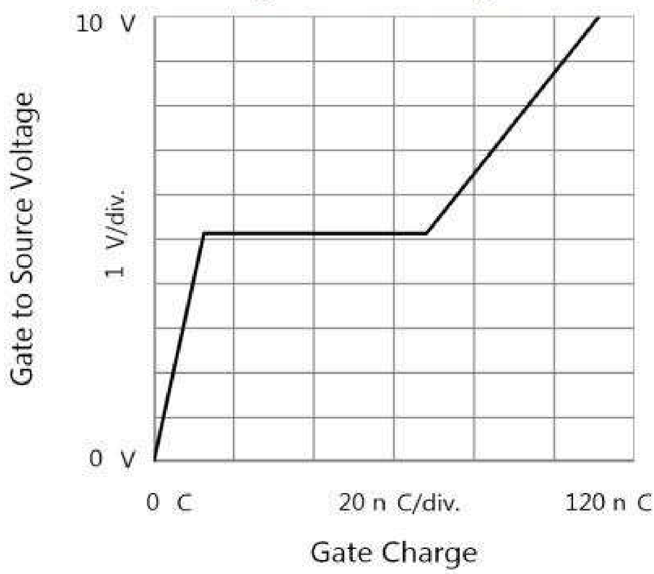


Figure 9. Transient Thermal Impedance TO-247,TO-3P

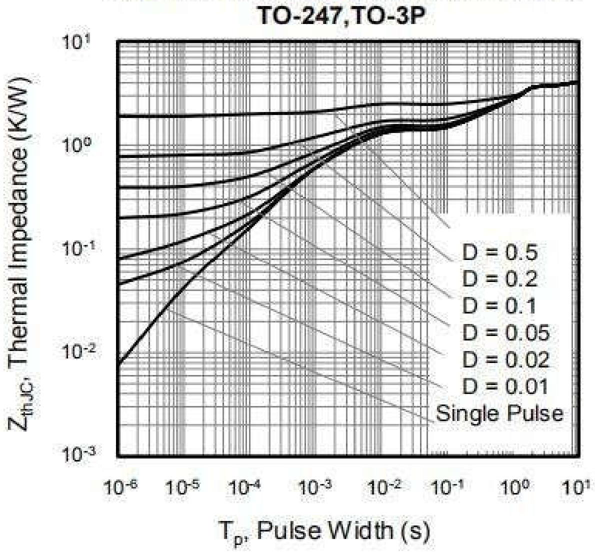


Figure 10. Maximum Forward Bias Safe Operating Area

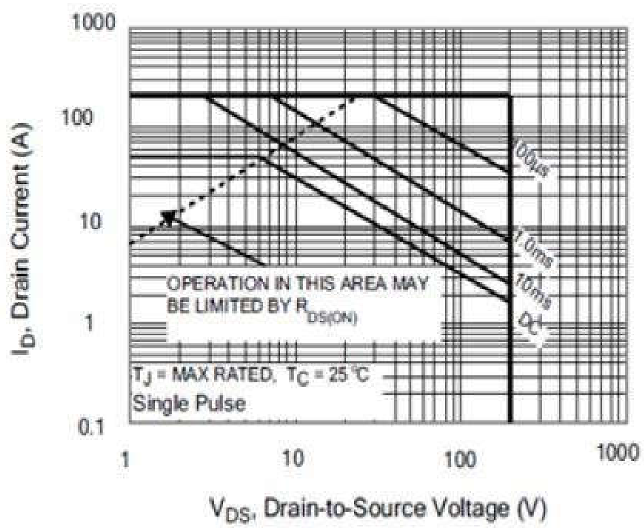


Figure A: Gate Charge Test Circuit and Waveform

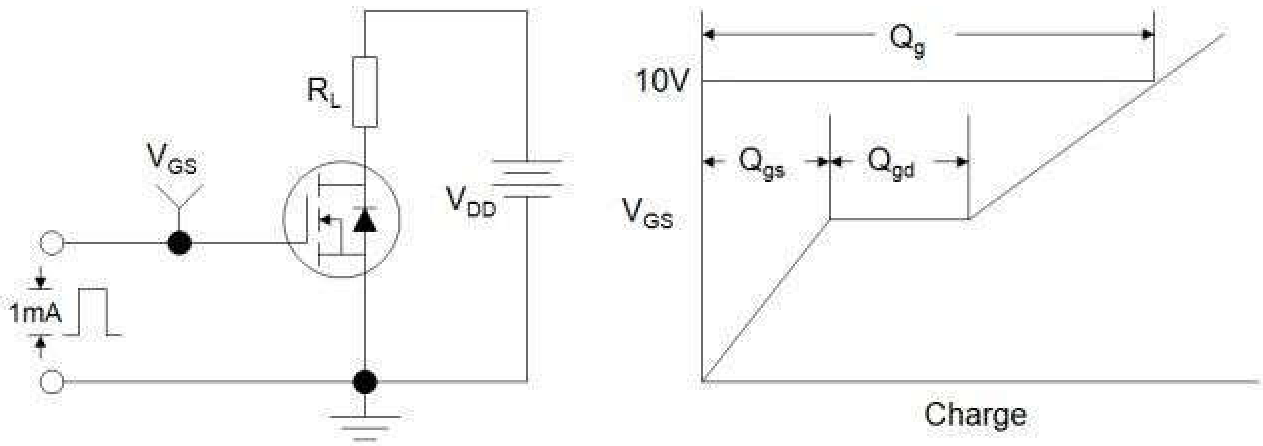


Figure B: Resistive Switching Test Circuit and Waveform

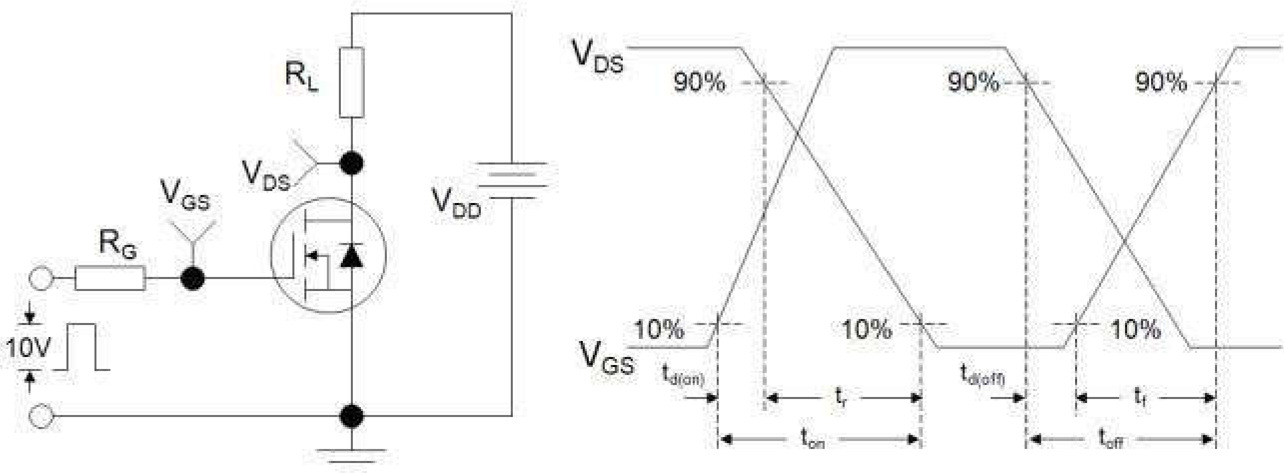
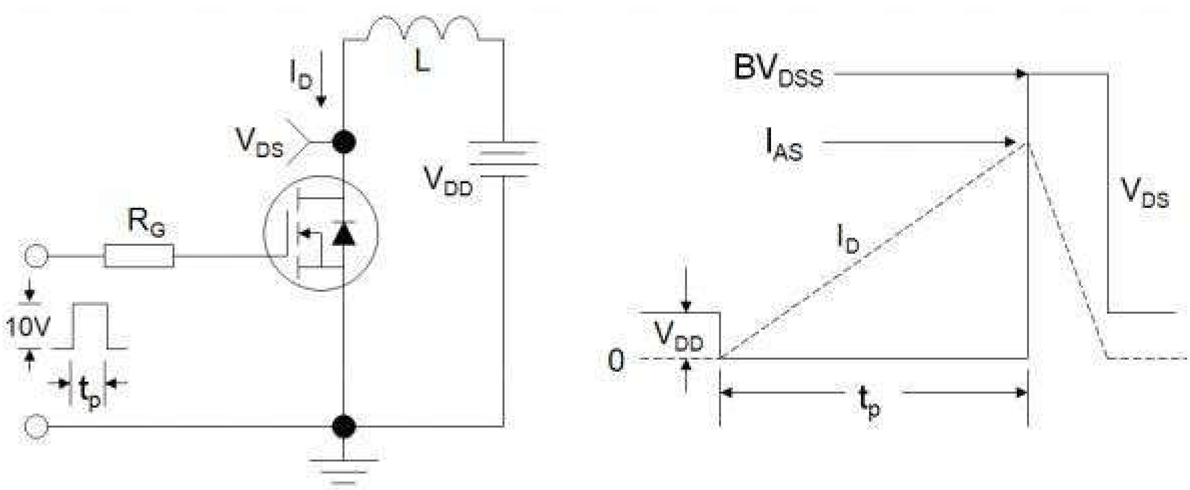
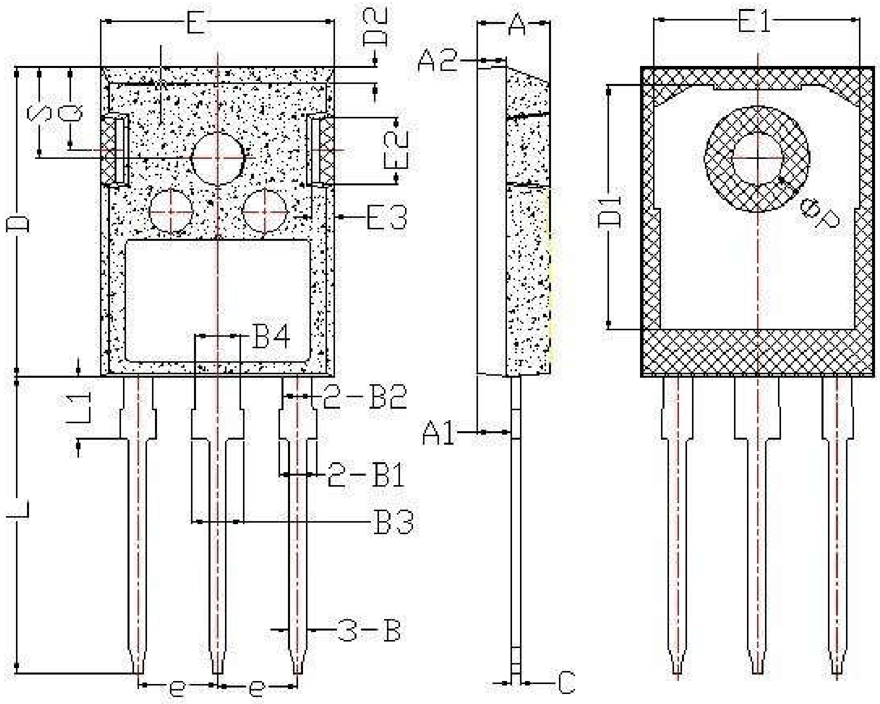


Figure C: Unclamped Inductive Switching Test Circuit and Waveform



Package Description



Items	Values(mm)	
	MIN	MAX
A	4.6	5.2
A1	2,2	2.6
B	0.9	1.4
B1	1.75	2.35
B2	1.75	2.15
B3	2.8	3.35
B4	2.8	3.15
C	0.5	0.7
D	20.60	21.30
D1	16	18
E	15.5	16.10
E1	13	14.7
E2	3.80	5.3
E3	0.8	2.60
e	5.2	5.7
L	19	20.5
L1	3.9	4.6
ΦP	2.5	3.70
Q	5.2	6.00
S	5.8	6.6

TO-247 Package

NOTE:

1. Exceeding the maximum ratings of the device in performance may cause damage to the device, even the permanent failure, which may affect the dependability of the machine. Please do not exceed the absolute maximum ratings of the device when circuit designing.
2. When installing the heat sink, please pay attention to the torsional moment and the smoothness of the heat sink.
3. MOSFETs is the device which is sensitive to the static electricity, it is necessary to protect the device from being damaged by the static electricity when using it.
4. Shenzhen Minos reserves the right to make changes in this specification sheet and is subject to change withoutprior notice.

CONTACT:

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