

60V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

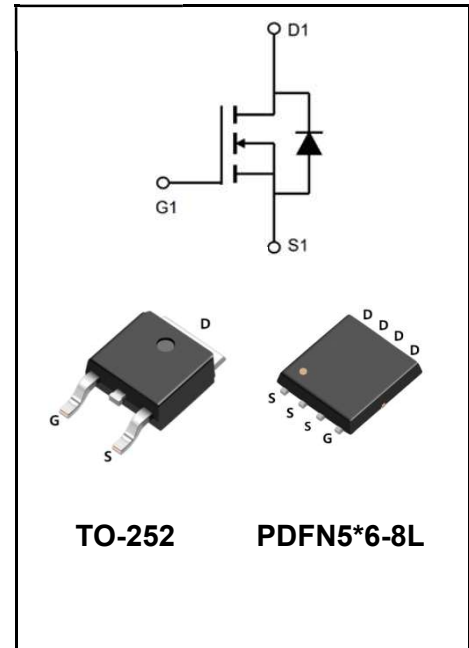
I_D	15A
V_{DSS}	60V
$R_{DS(ON)-typ}@V_{GS}=10V$	<37mΩ (Type:28mΩ)

Features

- ◆Fast Switching
- ◆Low ON Resistance
- ◆Low Gate Charge
- ◆100% Single Pulse avalanche energy Test

Applications

- ◆Power switch circuit of adaptor and charger.



Mechanical Data

- ◆Case: Molded plastic
- ◆Mounting Position: Any
- ◆Molded Plastic: UL Flammability Classification Rating 94V-0
- ◆Solder bath temperature 275°C maximum, 10s per JESD22-106

Product Specification Classification

Part Number	Package	Marking	Pack
YFW15N06AD	TO-252	YFW 15N06AD XXXXX	2500PCS/Tape
YFW15N06NF	PDFN5*6-8L	YFW 15N06NF XXXXX	5000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	15	A
Pulsed Drain Current (Note1)	I_{DM}	50	A
Power Dissipation	P_D	18	W
Single Pulse Avalanche Energy (Note5)	E_{AS}	25	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	R_{θJC}	3	°C/W
Thermal Resistance, Junction to Ambient	R_{θJA}	62	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V _{GS} = 0 V, I _D = 250 μA	BV_{DSS}	60	-	-	V
Drain-Source Leakage Current	V _{DS} = 60 V, V _{GS} = 0 V	I_{DSS}	-	-	1	uA
	V _{DS} =60V, Tc=125°C		-	-	100	
Gate Leakage Current	V _{GS} = ± 20 V, V _{DS} = 0 V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	V _{DS} = V _{GS} , I _D = 250 μA	V_{GS(th)}	1	-	2.5	V
Drain-Source On-State Resistance	V _{GS} = 10 V, I _D = 10 A	R_{DS(on)}	-	28	37	mΩ
	V _{GS} = 4.5 V, I _D = 5 A		-	35	48	
Forward Transconductance	V _{DS} = 50 V, I _D = 25A	g_{fs}	-	20	-	S
Input Capacitance	V _{GS} = 0 V, V _{DS} = 25V, f = 1MHz	C_{iss}	-	1050	-	pF
Output Capacitance		C_{oss}	-	65	-	
Reverse Transfer Capacitance		C_{rss}	-	45	-	
Turn-on Delay Time(Note2)	V _{DS} =30V, R _L =1.5Ω V _{GS} =10V, R _G =3Ω (Note3,4)	td(ON)	-	2.8	-	nS
Rise Time(Note2)		tr	-	17	-	
Turn-Off Delay Time(Note2)		td(OFF)	-	20	-	
Fall Time(Note2)		tf	-	5	-	
Total Gate Charge(Note2)	I _D = 10A, V _{DS} = 30 V, V _{GS} = 10 V(Note3,4)	Q_G	-	19	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	2.3	-	
Gate to Drain Charge(Note2)		Q_{GD}	-	4.6	-	

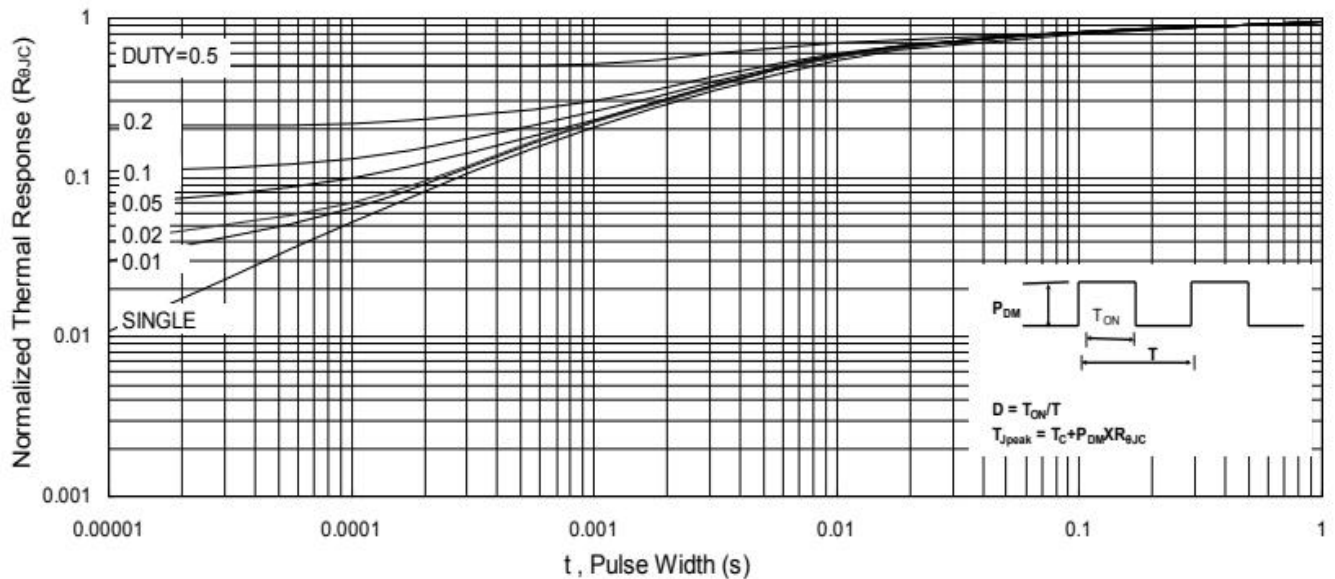
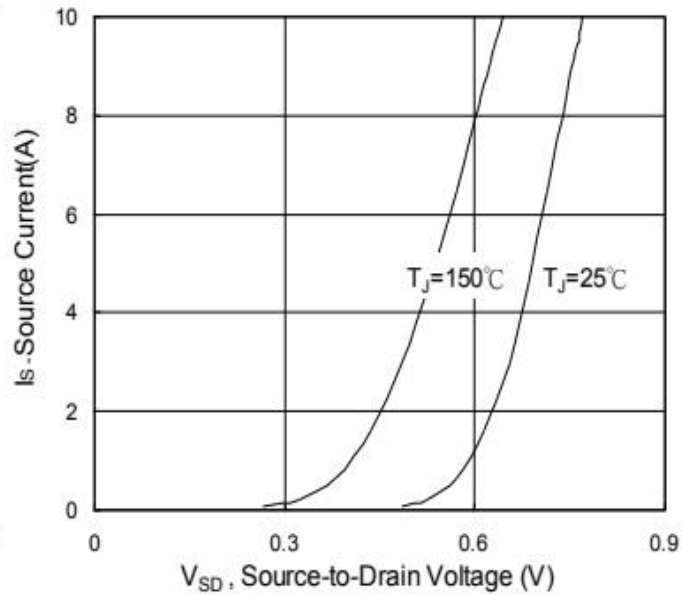
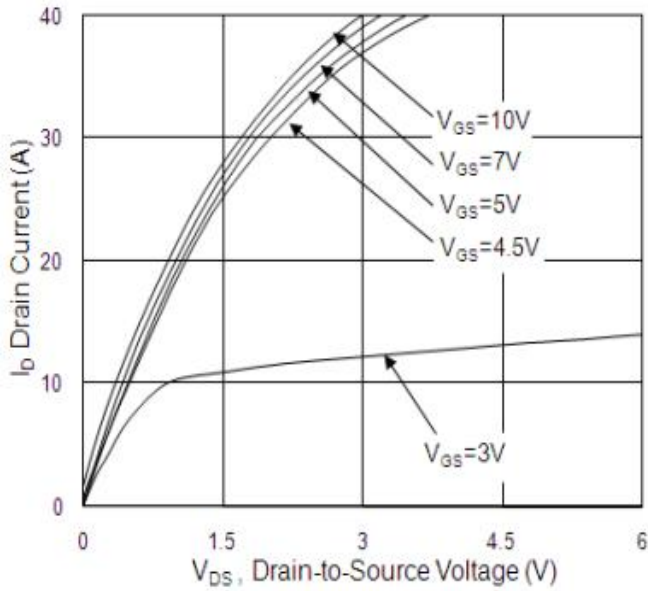
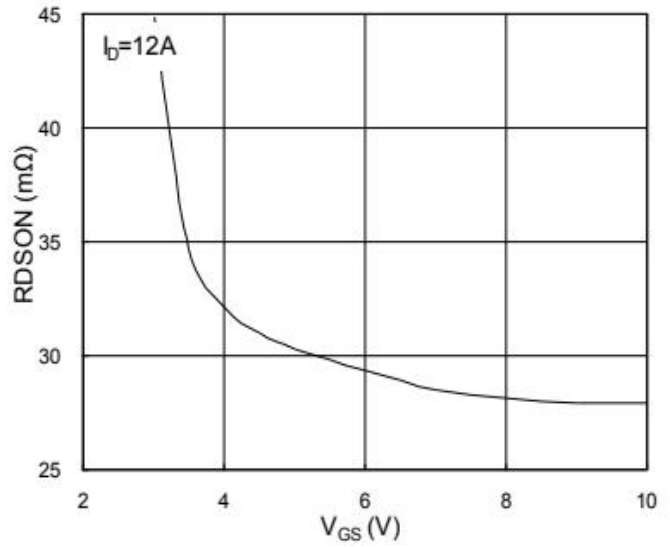
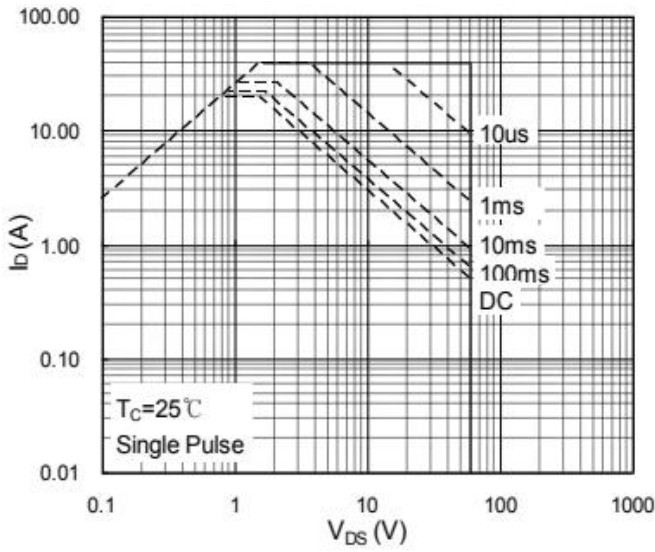
Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Maximun Body-Diode Continuous Current(Note2)		I_S	-	-	15	A
Maximun Body-Diode Pulsed Current		I_{SM}	-	-	50	A
Drain-Source Diode Forward Voltage	I _{SD} =10 A	V_{SD}	-	-	1.2	V
Reverse Recovery Time	I _S =I _F , I _{SD} =10 A, V _{GS} = 0 V,	trr	-	12	-	nS
Reverse Recovery Charge	dI _F / dt = 100 A/μs(Note3)	Qrr	-	7	-	uC

Note:

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. Guaranteed by design, not subject to production
5. EAS condition: T_j=25 °C, VDD= 30V, V_G=10V, L=0.1mH, R_g=25Ω

Ratings and Characteristic Curves



Package Outline Dimensions Millimeters

TO-252

	Dim.	Min.	Typ.	Max.
	A	2.10	-	2.50
	A2	0	-	0.10
	B	0.66	-	0.86
	B2	5.18	-	5.48
	C	0.40	-	0.60
	C2	0.44	-	0.58
	D	5.90	-	6.30
	D1	5.30REF		
	E	6.40	-	6.80
	E1	4.63	-	-
	G	4.47	-	4.67
	H	9.50	-	10.70
	L	1.09	-	1.21
	L2	1.35	-	1.65
V1	-	7°	-	
V2	0°	-	6°	
All Dimensions in millimeter				

PDFN5*6-8L

	Dim.	Min.	Max.
	A	4.8	5.2
	B	0.25	0.35
	C	1	1.2
	C1	Typ 0.254	
	C2	Typ 0.254	
	E	Typ 1.27	
	L	6	6.3
	L1	5.7	6
	L2	MAX 0.2	
R	Typ 13°		
All Dimensions in millimeter			