

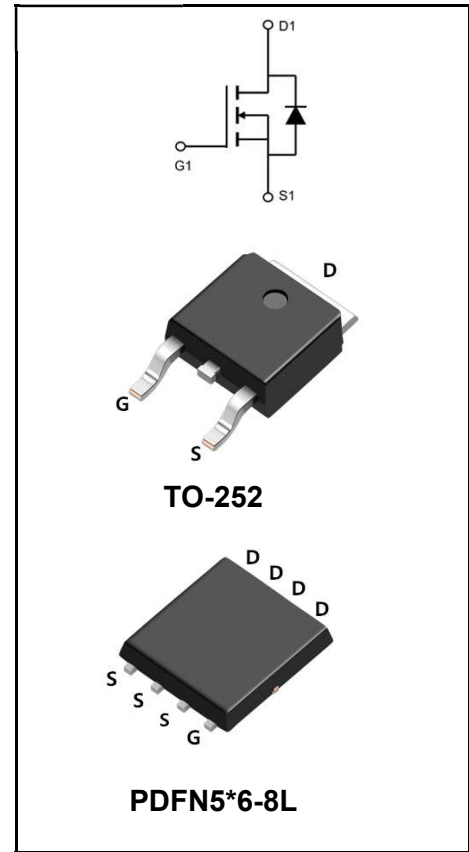
60V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	30A
V_{DSS}	60V
$R_{DS(on)-typ}(@V_{GS}=10V)$	< 28mΩ (Type: 18 mΩ)

Features

- ◆Fast Switching
- ◆Low ON Resistance
- ◆Low Gate Charge
- ◆100% Single Pulse avalanche energy Test
- ◆LeadfreeincomplywithEURoHS2011/65/EUdirectives



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
YFW30N06AD	TO-252	YFW 30N06AD XXXXX	2500PCS/Tape
YFW30N06NF	PDFN5*6-8L	YFW 30N06NF 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	30	A
Pulsed Drain Current (Note1)	I_{DM}	90	A
Power Dissipation	P_D	35	W
Single Pulse Avalanche Energy (Note5)	E_{AS}	50	m_J
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		-	-	10	UA
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(Note3)	V _{GS} = 10 V, I _D = 25 A	R_{DS(on)}	-	18	28	mΩ
	V _{GS} = 4.5 V, I _D = 10 A		-	26	40	mΩ
Forward Transconductance	V _{DS} = 50 V, I _D = 25A	g_{fs}	-	20	-	S
Input Capacitance	V _{GS} = 0 V, V _{DS} = 25 V, f = 1MHz	C_{iss}	-	1750	-	pF
Output Capacitance		C_{oss}	-	85	-	
Reverse Transfer Capacitance		C_{rss}	-	62	-	
Turn-on Delay Time	V _{DS} = 30V, RL=1.5Ω V _{GS} = 10 V, RG = 3Ω, (Note3,4)	td(ON)	-	6	-	nS
Rise Time		tr	-	3.1	-	
Turn-Off Delay Time		td(OFF)	-	18	-	
Fall Time		tf	-	3.1	-	
Total Gate Charge	V _{DS} = 30A, I _D = 20 V, V _{GS} = 10 V(Note3,4)	Q_G	-	30	-	nC
Gate to Source Charge		Q_{GS}	-	5.5	-	
Gate to Drain Charge		Q_{GD}	-	8.6	-	

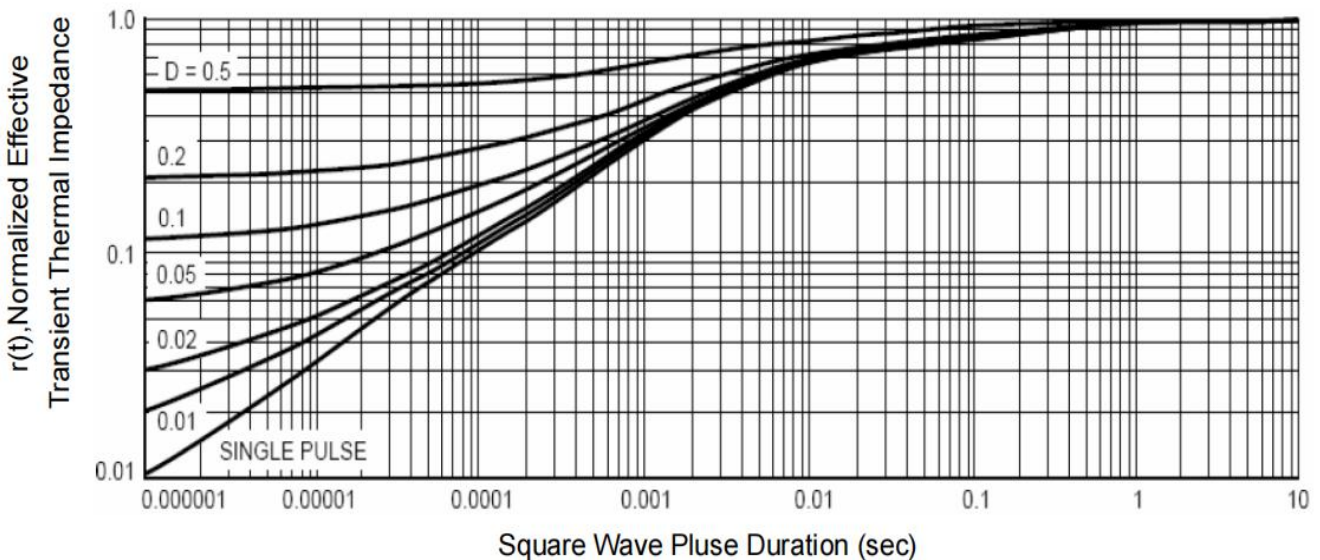
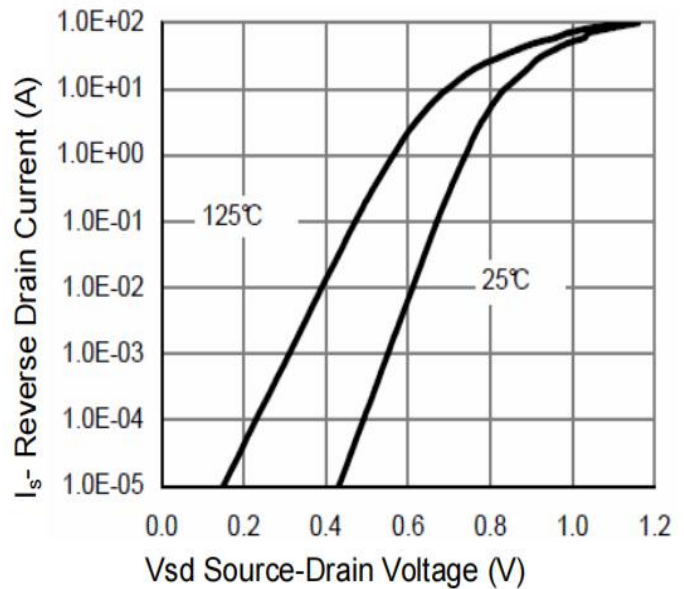
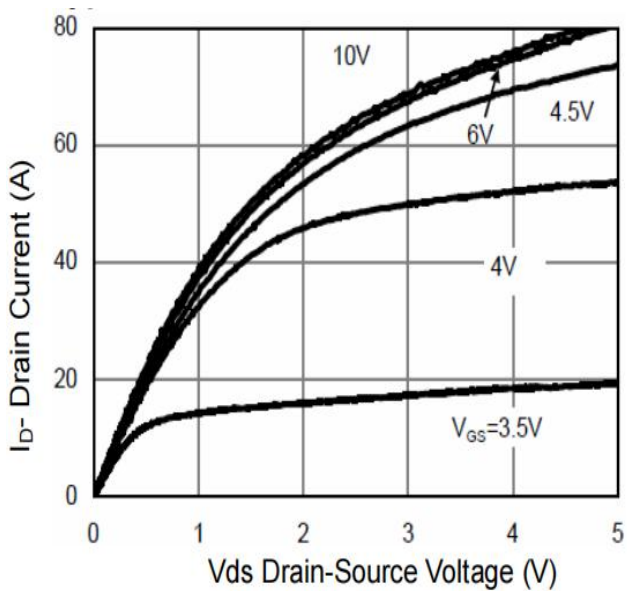
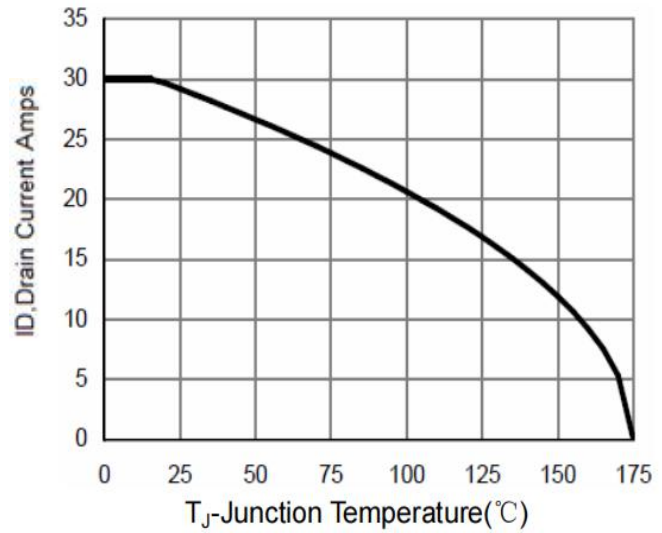
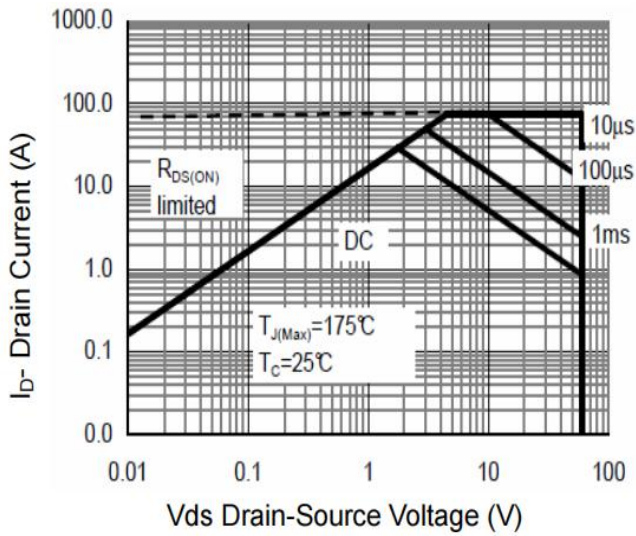
Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Maximun Body-Diode Continuous Current(Note2)		I_S	-	-	30	A
Maximun Body-Diode Pulsed Current		I_{SM}	-	-	90	A
Drain-Source Diode Forward Voltage(Note3)	$I_{SD} = 30\text{ A}$	V_{SD}	-	-	1.2	V
Reverse Recovery Time	$I_S = I_F$	trr	-	40	-	nS
Reverse Recovery Charge	$I_{SD} = 20\text{ A}, V_{GS} = 0\text{ V},$ $dI_F / dt = 100\text{ A}/\mu\text{s}(\text{Note3})$	Qrr	-	65	-	uC

Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10\text{ sec}$.
3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production
5. EAS condition: $T_j = 25^\circ\text{C}$, $V_{DD} = 30\text{V}$, $V_G = 10\text{V}$, $L = 0.1\text{mH}$, R_g

Ratings and Characteristic Curves



Package Outline Dimensions millimeters

TO-252

	Dim.	Min.	Max.
	A	2.1	2.5
	B	0.95	1.55
	C	0.4	0.6
	D	6.4	6.7
	D1	5.1	5.8
	E	5.8	6.4
	E1	Typ 2.3	
	E2	Typ 4.6	
	B1	0.6	0.8
	B2	0.75	0.95
	O	--	0.15
	L1	9.0	11.0
	L2	1.3	1.7
L3	0.70	0.95	
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			