

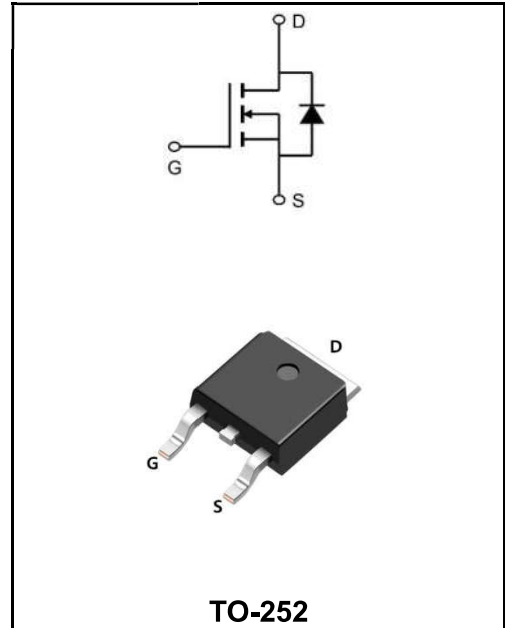
60V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	130A
V_{DSS}	60V
R_{DS(on)-typ(@V_{GS}=10V)}	< 3.2mΩ (Type:2.35 mΩ)

Application

- ◆ Battery protection
- ◆ Load switch
- ◆ Uninterruptible power supply



Product Specification Classification

Part Number	Package	Marking	Pack
YFW130N06AD	TO-252	YFW 130N06AD XXXXX	2500PCS/Tape

Maximum Ratings at T_c=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	60	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current ^{1,6} @T _c =25°C	I_D	130	A
Continuous Drain Current ^{1,6} @T _c =100°C	I_D	66	A
Pulsed Drain Current ²	I_{DM}	240	A
Single Pulse Avalanche Energy ³	E_{AS}	101	mJ
Avalanche Current	I_{AS}	45	A
Total Power Dissipation ⁴ @T _c =25°C	P_D	168	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating and Storage Temperature Range	T_J	-55 to +150	°C
Thermal Resistance Junction-Ambient ¹	R_{θJA}	0.89	°C/W
Thermal Resistance Junction-Case ¹	R_{θJC}	1.5	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	60	67	-	V
Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Gate to Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1.2	1.6	2.5	V
Static Drain-Source on-Resistance	$V_{GS}=10V, I_D=20A$	$R_{DS(ON)}$	-	2.35	3.2	m Ω
	$V_{GS}=4.5V, I_D=15A$		-	2.9	3.6	
Input Capacitance	$V_{DS}=25V$ $V_{GS}=0V$ $f=100KHz$	C_{iss}	-	5950	-	μF
Output Capacitance		C_{oss}	-	1250	-	
Reverse Transfer Capacitance		C_{rss}	-	85	-	
Total Gate Charge	$V_{DS}=50V$ $I_D=50A$ $V_{GS}=10V$	Q_g	-	93	-	nC
Gate-Source Charge		Q_{gs}	-	17	-	
Gate-Drain Charge		Q_{gd}	-	14	-	
Reverse Recovery Charge	$I_F=25A, di/dt=100A/\mu s,$	Q_{rr}	-	73	-	nC
Reverse Recovery Time		t_{rr}	-	68	-	ns
Turn-on delay time	$V_{GS}=10V, V_{DD}=30V$ $I_D=25A, R_{GEN}=2\Omega,$	$t_{d(on)}$	-	22.5	-	ns
Turn-on Rise Time		T_r	-	6.7	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	80.3	-	
Turn-Off Fall Time		t_f	-	26.9	-	
Diode Forward Voltage	$V_{GS}=0V, I_S=20A$	V_{SD}	-	-	1.2	V
Maximum Body-Diode Continuous Current		I_S	-	-	200	A

Typical Characteristics

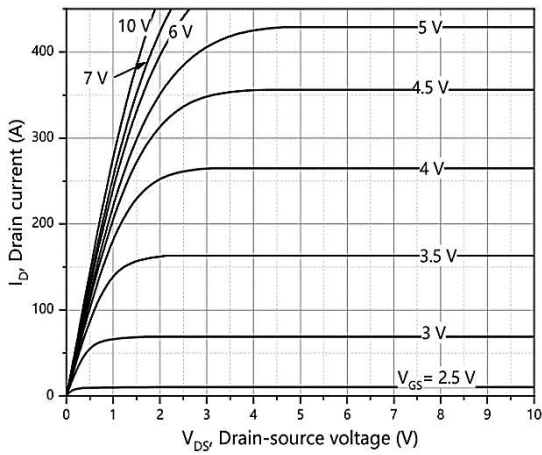


Figure 1. Typ. output characteristics

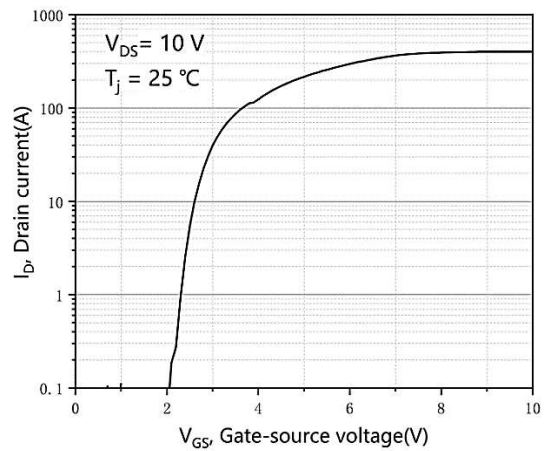


Figure 2. Typ. transfer characteristics

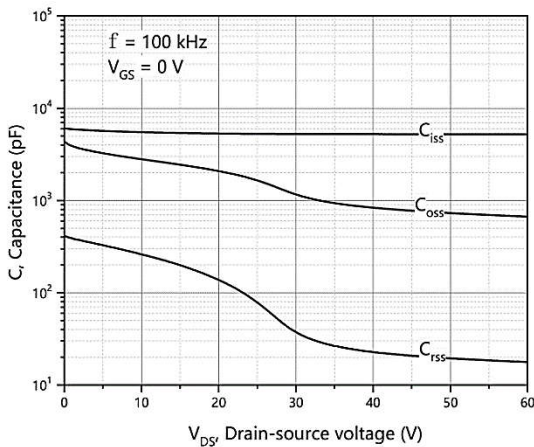


Figure 3. Typ. capacitances

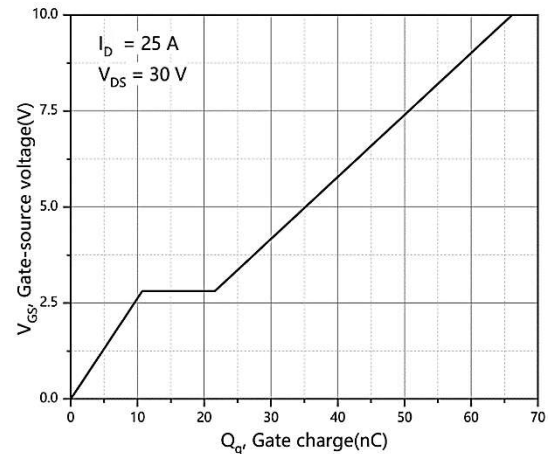


Figure 4. Typ. gate charge

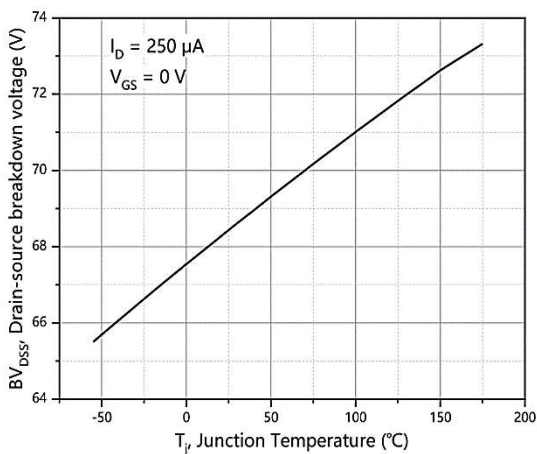


Figure 5. Drain-source breakdown voltage

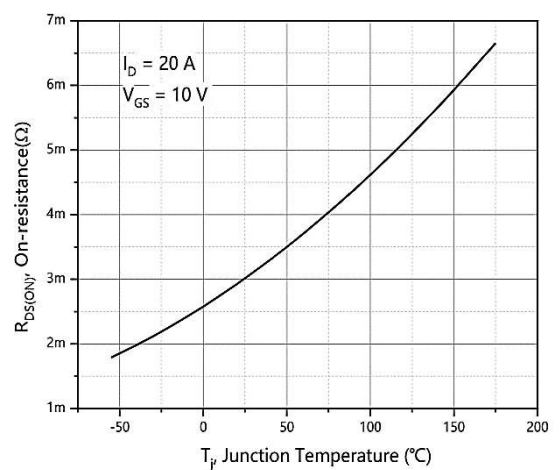


Figure 6. Drain-source on-state resistance

Ratings and Characteristic Curves

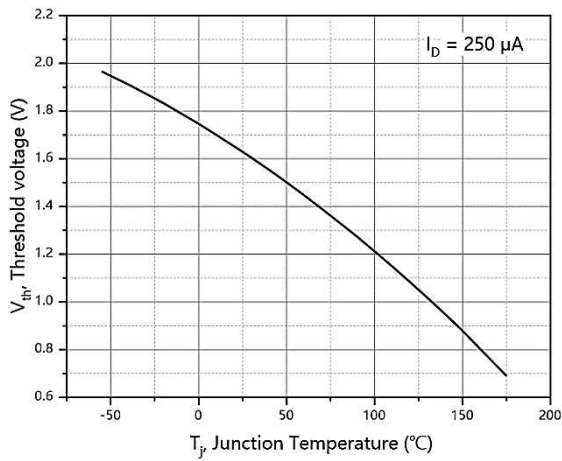


Figure 7. Threshold voltage

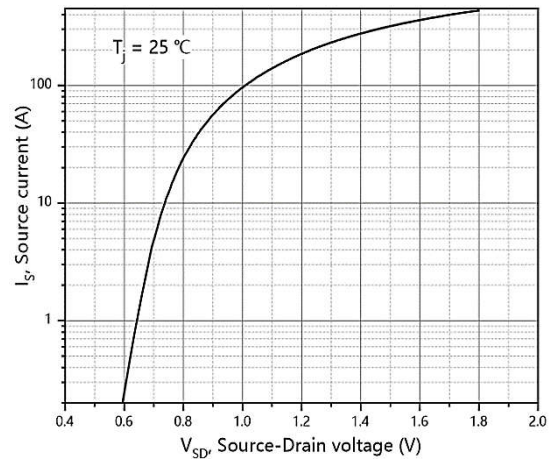


Figure 8. Forward characteristic of body diode

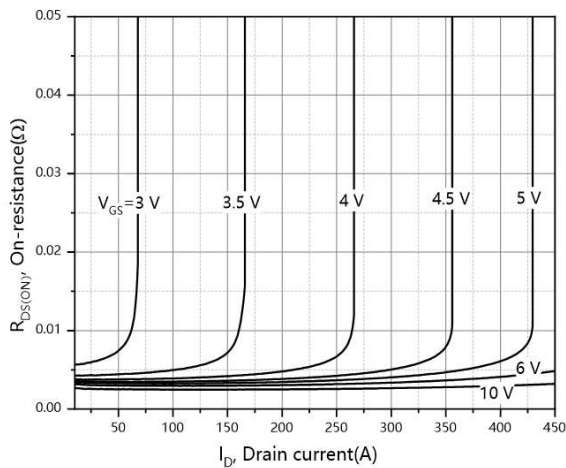


Figure 9. Drain-source on-state resistance

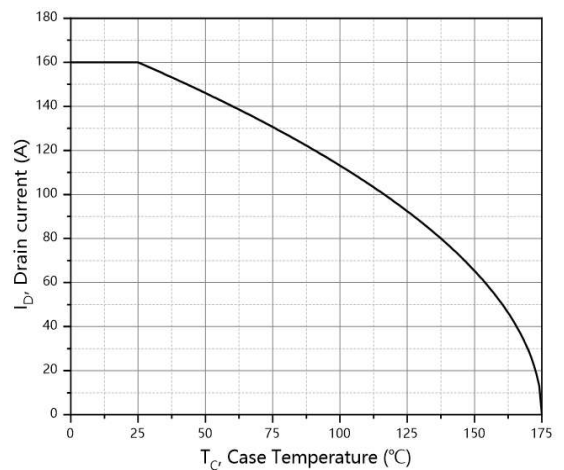


Figure 10. Drain current

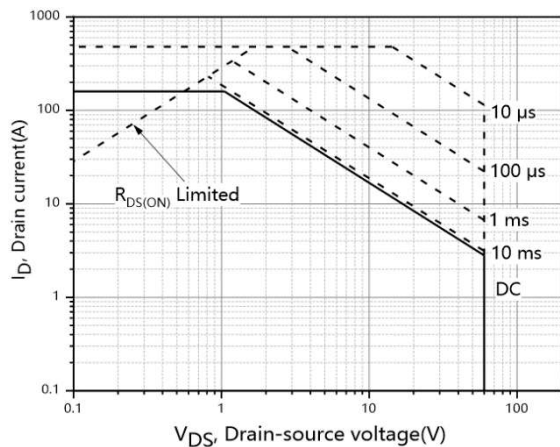


Figure 11. Safe operation area T_C=25 °C

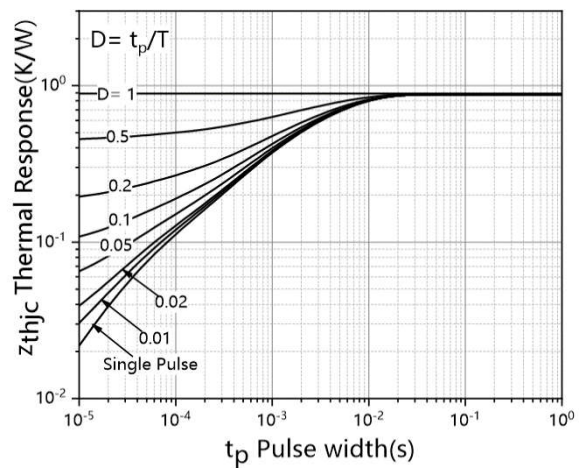


Figure 12. Max. transient thermal impedance

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			

