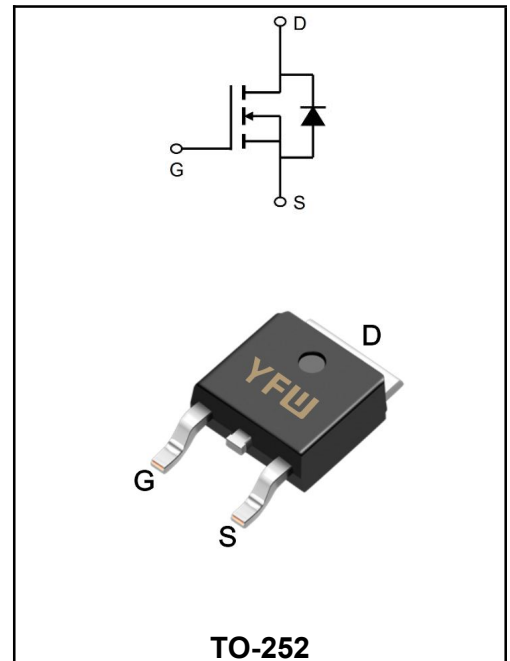


60V N-Channel Enhancement Mode MOSFET

MAIN CHARACTERISTICS

I_D	160A
V_{DSS}	60V
$R_{DS(on)-typ}(@V_{GS}=10V)$	$< 3m\Omega$ (Typ: 2.3mΩ)



FEATURES

- ◆ Adopt advanced trench technology to provide excellent Battery protection or in other Switching application.
- ◆ **YFW-SGT technology**

APPLICATIONS

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

MECHANICAL DATA

- ◆ Case: TO-252/AD
- ◆ Mounting Position: Any
- ◆ Molded Plastic: UL Flammability Classification Rating 94V-0
- ◆ Lead free in compliance with EU RoHS 2011/65/EU directive
- ◆ Solder bath temperature 275°C maximum, 10s per JESD 22-B106

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
Continuous drain current	I_D	160	A
Pulsed drain current(Note1)	I_{DM}	240	A
Power dissipation	P_D	210	W
Single pulsed avalanche energy(Note1)	E_{AS}	650	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance Junction-Case	$R_{\theta JC}$	0.59	°C/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	50	°C/W

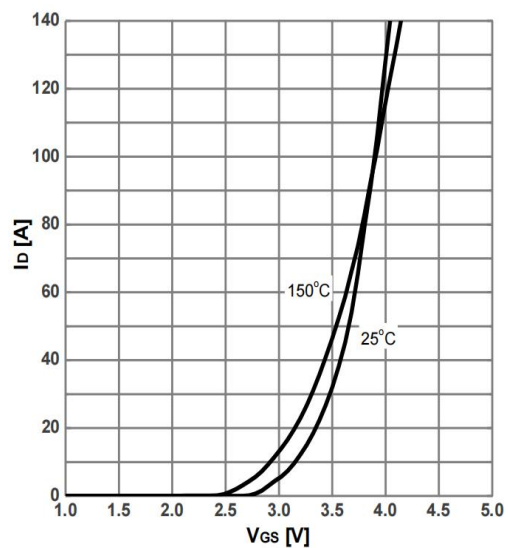
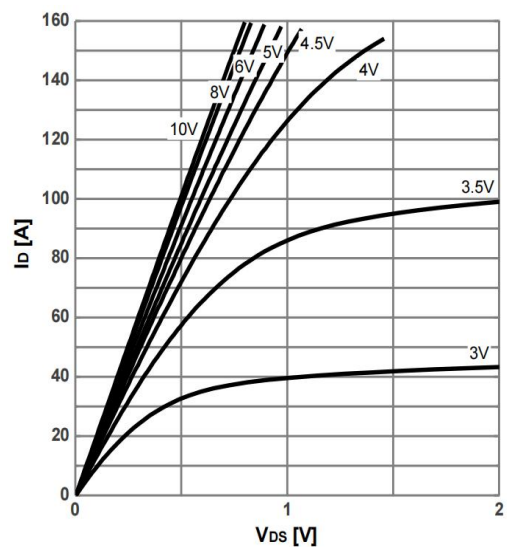
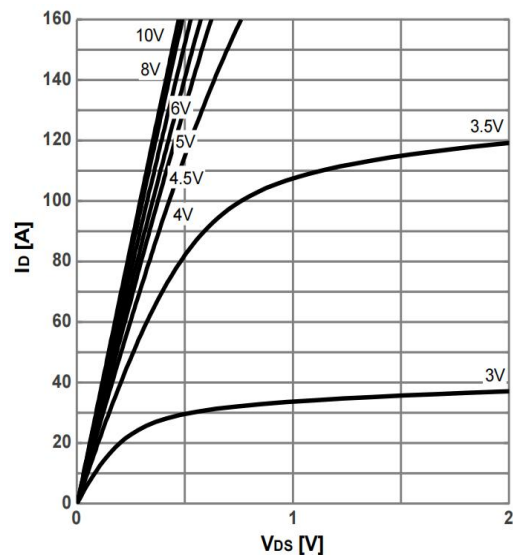
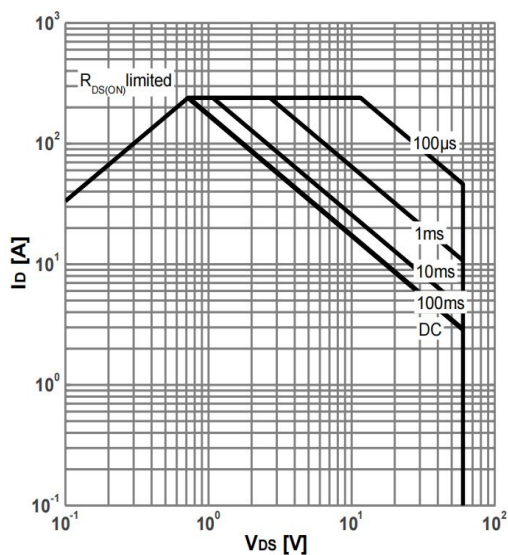
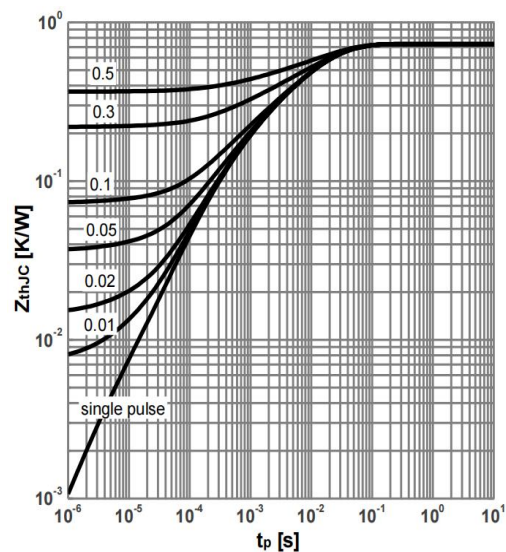
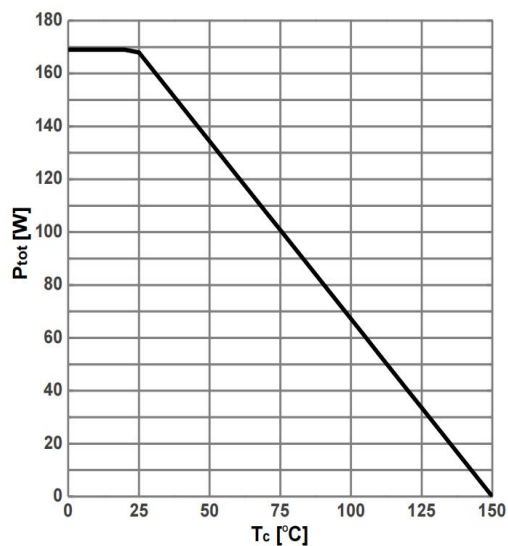
Note1: Pulse test: 300 μ s pulse width, 2 % duty cycle

Maximum Ratings at Tc=25°C unless otherwise specified

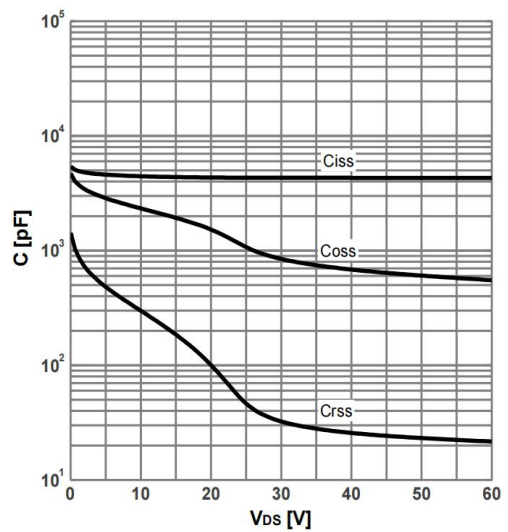
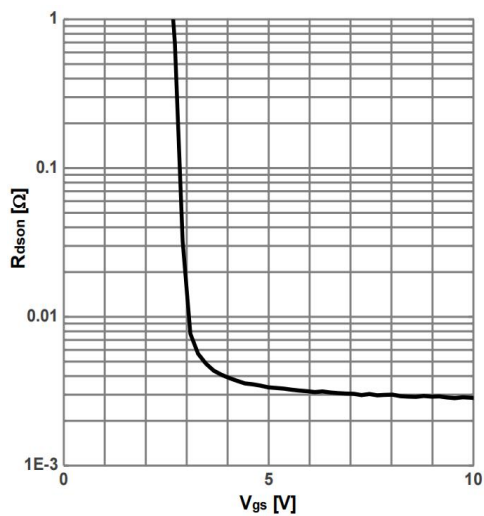
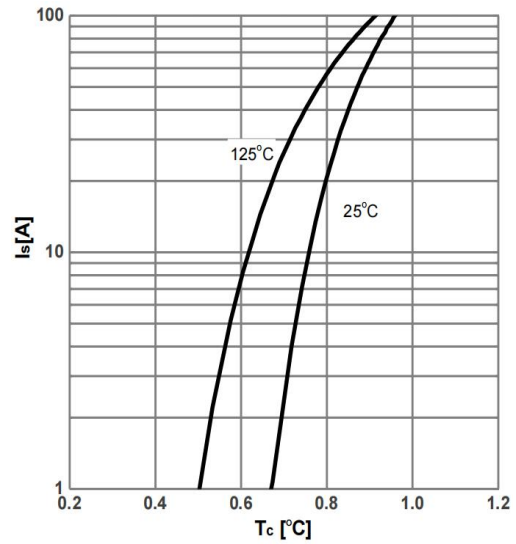
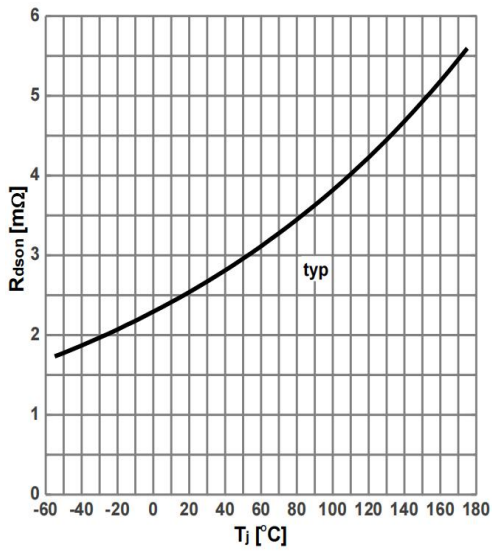
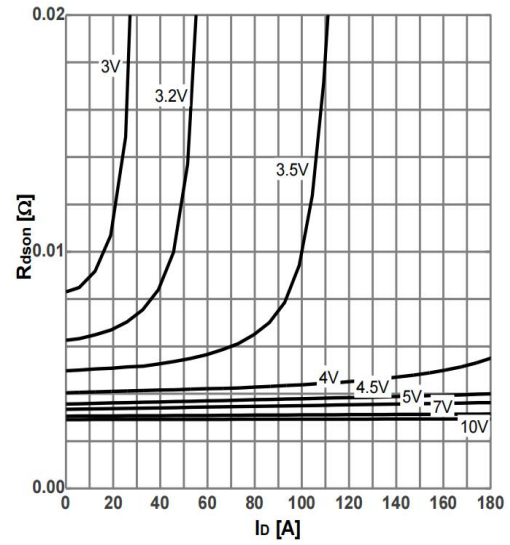
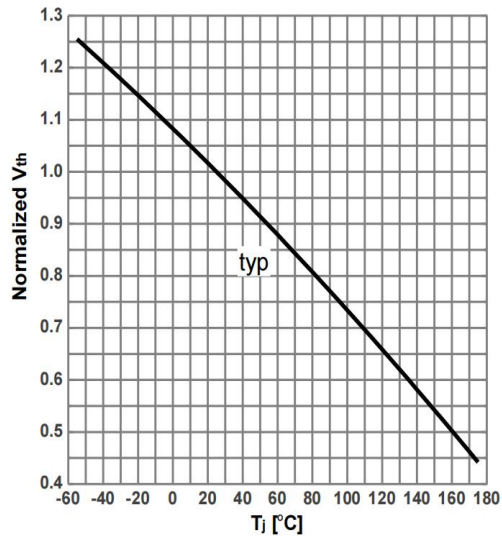
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	60	-	-	V
Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$	I_{DSS}	-	-	1.0	μA
Gate to Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	2.2	-	3.4	V
Drain-Source On-State Resistance	$V_{GS}=10V, I_D=30A$	$R_{DS(on)}$	-	2.3	3	m Ω
Transconductance	$V_{DS}=5V, I_D=20A$	g_{fs}	-	130	-	S
Input Capacitance	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$	C_{iss}	-	4200	-	PF
Output Capacitance		C_{oss}	-	1080	-	
Reverse Transfer Capacitance		C_{rss}	-	41	-	
Turn-on delay time	$V_{DS}=30V$ $V_{GS}=10V$ $R_G=3\Omega$ $I_D=100A$	$t_{d(ON)}$	-	13.5	-	ns
Turn-on Rise Time		t_r	-	95.5	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	40	-	
Turn-Off Fall Time		t_f	-	110	-	
Total Gate Charge	$V_{DS}=30V$ $I_D=20A$ $V_{GS}=10V$	Q_G	-	42	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	10	-	
Gate to Drain Charge(Note2)		Q_{GD}	-	12	-	
Maximun Body-Diode Continuous Current		I_S	-	-	160	A
Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=20A$	V_{SD}	-	-	1.2	V
Body Diode Reverse Recovery Time(Note2)	$T_J = 25^\circ C, I_F = 60A$ $di/dt = 100 A/\mu s$	trr	-	35	-	ns
Body Diode Reverse Recovery Charge(Note2)		Q_{rr}	-	30	-	nC

Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

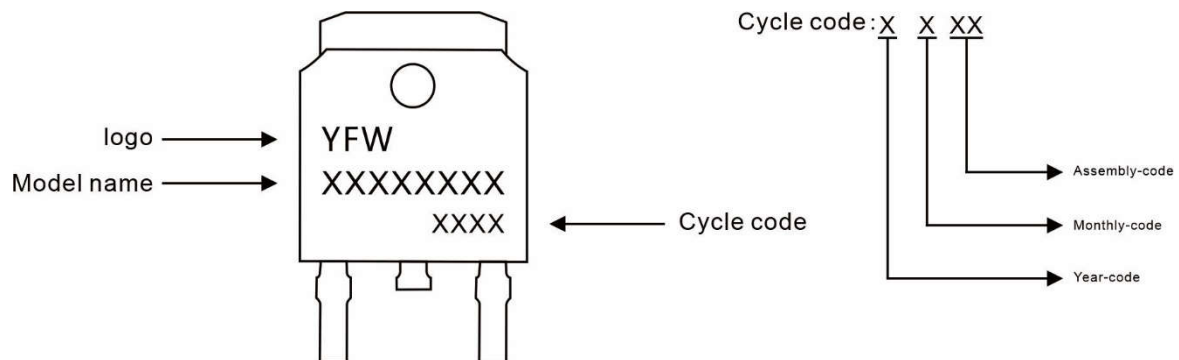
Ratings and Characteristic Curves



Ratings and Characteristic Curves



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWG160N06AD	TO-252	0.011oz(0.32g)	2500pcs/reel	5000pcs/box 25000pcs/Carton

Package Dimensions

TO-252

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	10.00	11.00	0.393	0.433
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059

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