

40V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

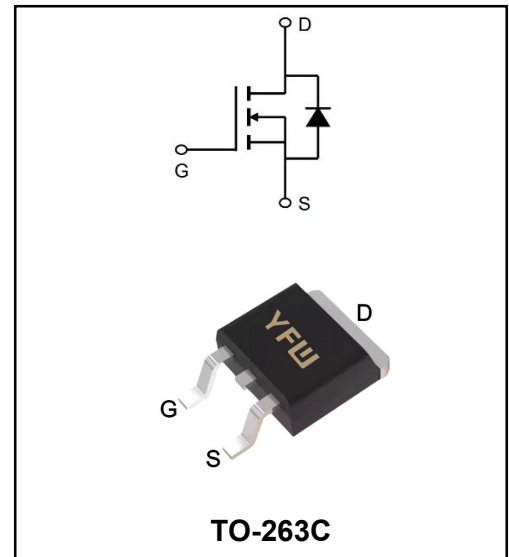
I_D	200A
V_{DSS}	40V
$R_{DS(on)-typ}(@V_{GS}=10V)$	$<1.8m\Omega$ (Typ: 1.15 mΩ)

Application

- ◆ **YFW-SGT technology**
- ◆ Battery protection
- ◆ Load switch
- ◆ Uninterruptible power supply

MECHANICAL DATA

- ◆ Case: Molded plastic
- ◆ 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}	40	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous drain current	I_D	200	A
Pulsed Drain Current (Note1)	I_{DM}	780	A
Power dissipation	P_D	220	W
Single Pulse Avalanche Energy(Note1)	E_{AS}	870	mJ
Operation and storage temperature	T_{STG}, T_J	-55 to +150	°C
Thermal Resistance, Junction-case	$R_{\theta JC}$	0.57	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	50	°C/W

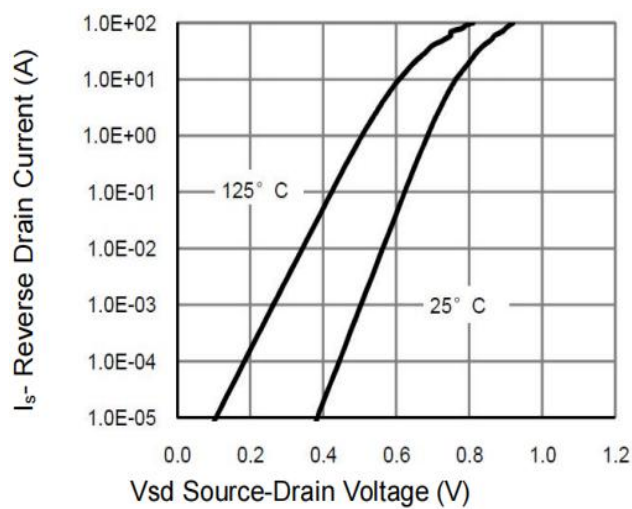
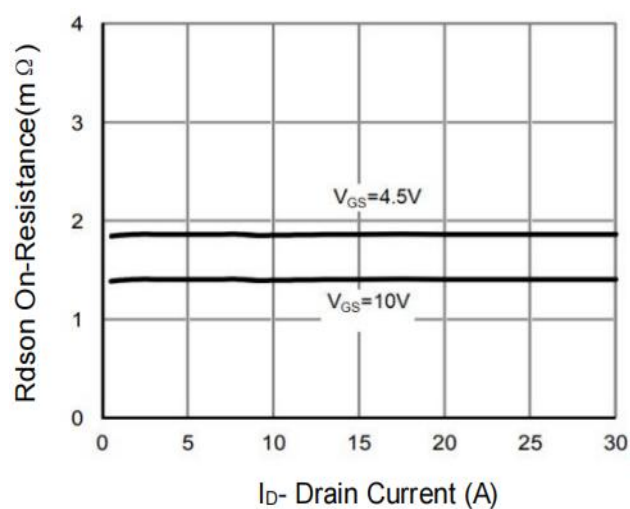
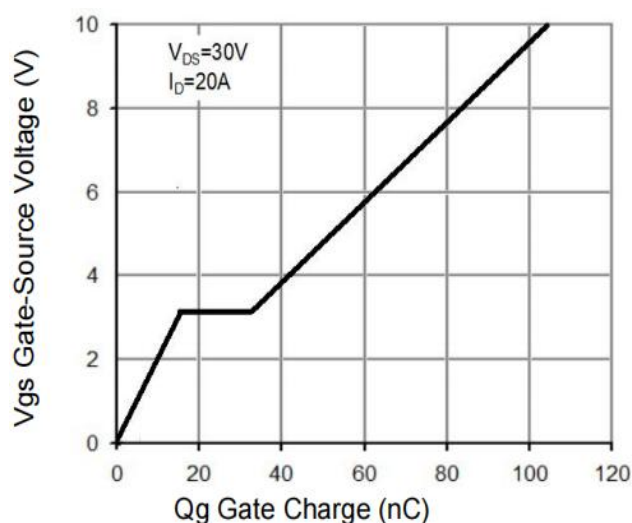
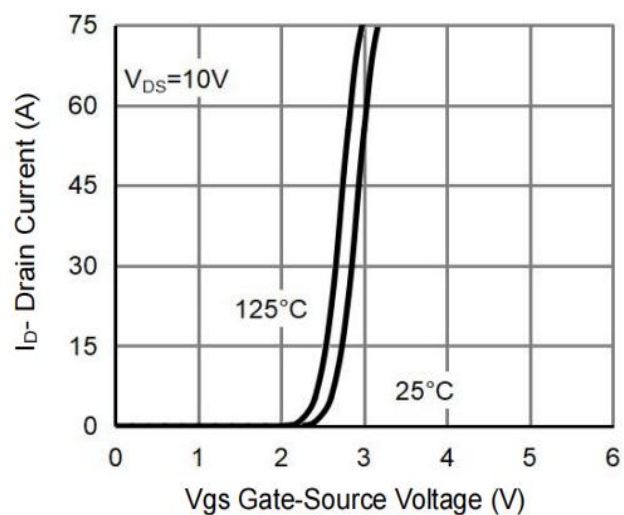
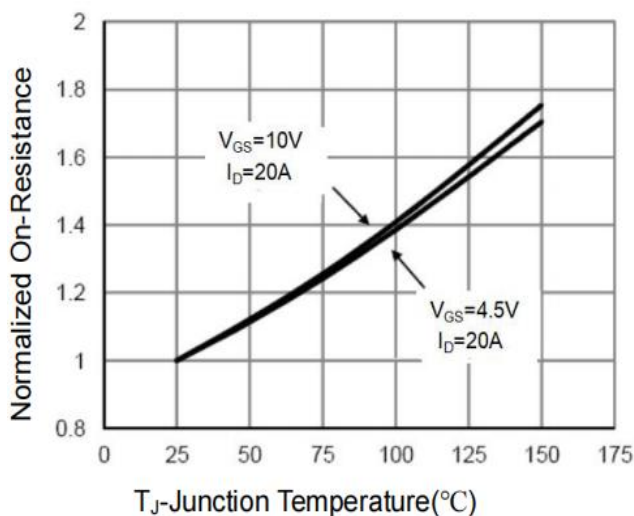
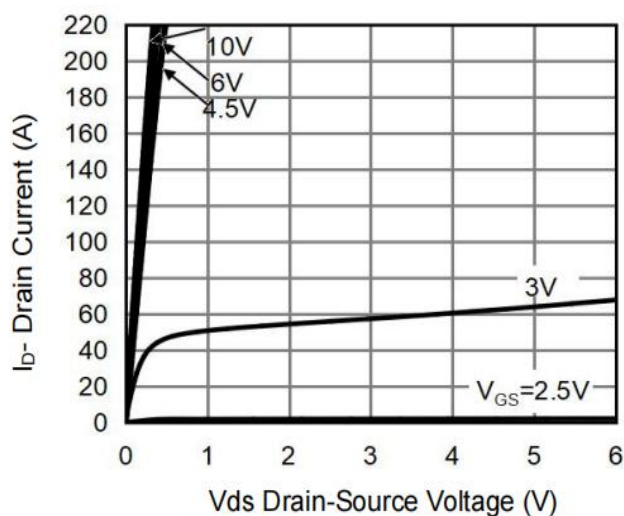
Note1: Pulse test: 300 μs pulse width, 2 % duty cycle

Maximum Ratings at Tc=25°C unless otherwise specified

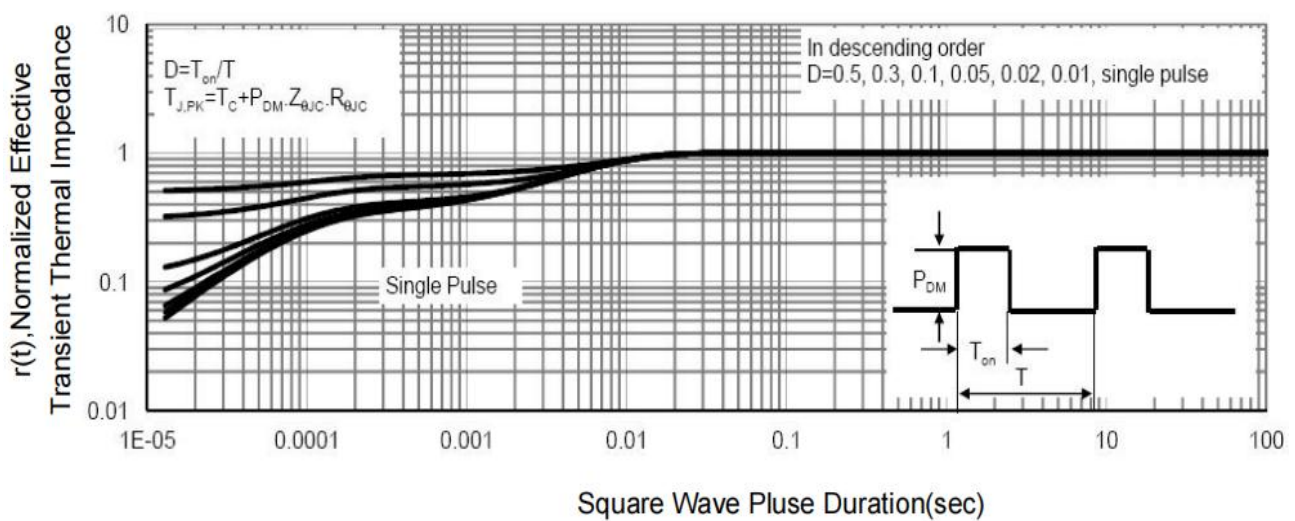
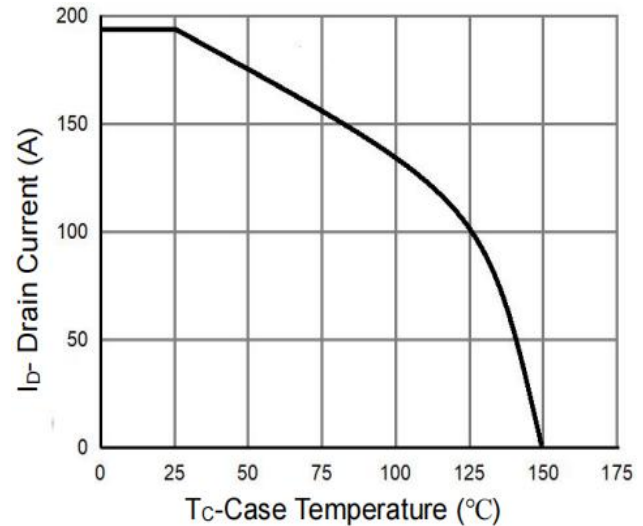
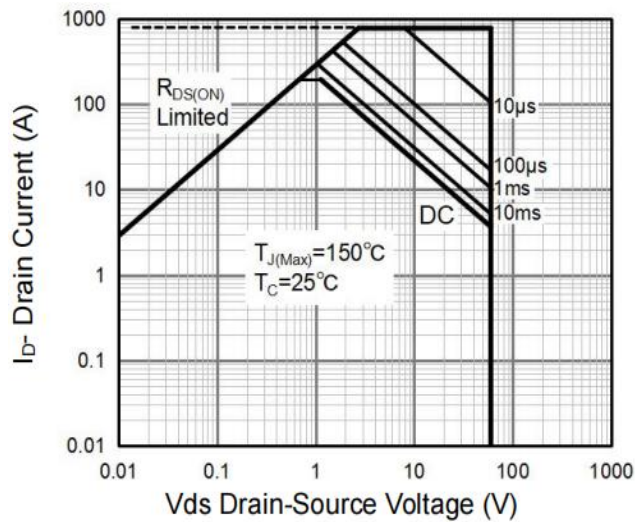
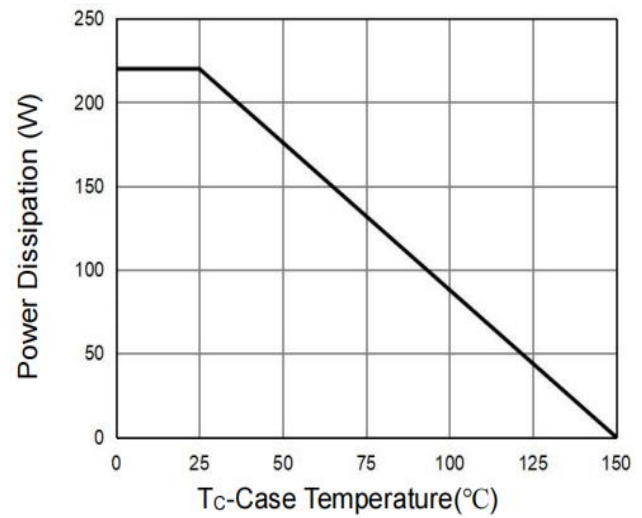
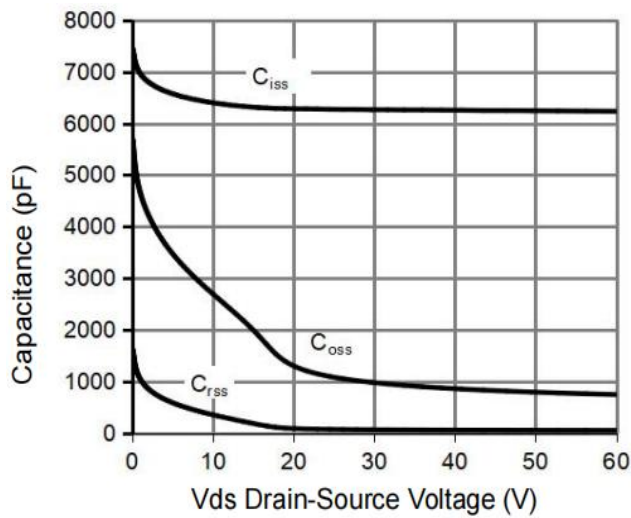
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	40	-	-	V
Drain-Source Leakage Current	$V_{DS}=40V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Gate-Source Leakage Current	$V_{GS} = \pm 20V, V_{DS} = 0V$	I_{GSS}	-	-	± 100	nA
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1.0	-	2.5	V
Drain-Source On-State Resistance	$V_{GS} = 10V, I_D = 20A$	$R_{DS(ON)}$	-	1.15	1.8	m Ω
	$V_{GS} = 4.5V, I_D = 20A$	$R_{DS(ON)}$	-	1.8	2.4	m Ω
Input Capacitance	$V_{GS}=0V$ $V_{DS}=30V$ $f=1MHz$	C_{iss}	-	6150	-	pF
Output Capacitance		C_{oss}	-	965	-	
Reverse Transfer Capacitance		C_{rss}	-	65	-	
Turn-on delay time(Note2)	$V_{GS}=10V$ $V_{DD}=30V$ $R_G=4.7\Omega$ $I_D=20A$	$t_{d(on)}$	-	16.8	-	ns
Rise Time(Note2)		T_r	-	10.2	-	
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	60	-	
Fall Time(Note2)		t_f	-	18	-	
Total Gate Charge(Note2)	$I_D=20A$ $V_{DS}=30V$ $V_{GS}=10V$	Q_g	-	105	-	nC
Gate-Source Charge(Note2)		Q_{gs}	-	18	-	
Gate-Drain Charge(Note2)		Q_{gd}	-	15.3	-	
Diode forward current		I_S	-	-	200	A
Diode Forward Voltage	$V_{GS}=0V, I_S=20A, T_J=25^\circ C$	V_{SD}	-	-	1.2	V
Reverse Recovery Time(Note2)	$T_J = 25^\circ C, I_F = I_S$ $di / dt = 100 A/\mu s$	t_{rr}	-	60	-	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	85	-	nC

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

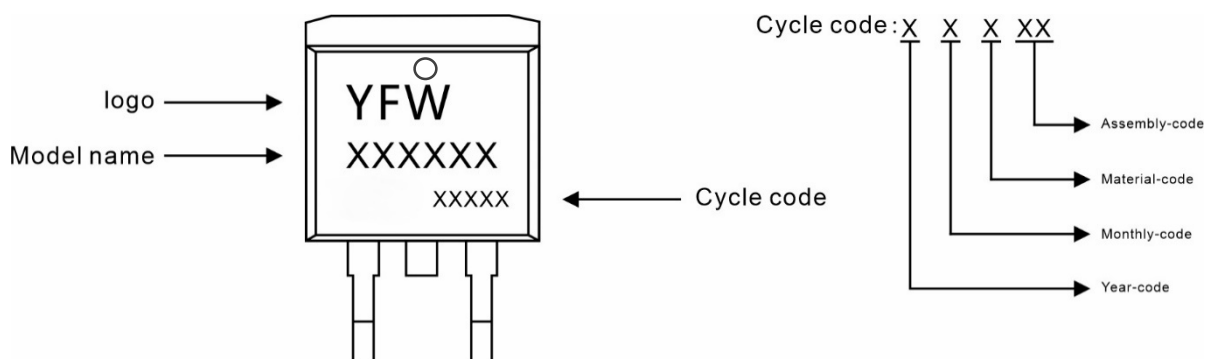
Ratings and Characteristic Curves



Ratings and Characteristic Curves



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWG200N04ASC	TO-263C	0.04oz(1.16g)	800pcs/reel	1600pcs/box 8000pcs/Carton

Package Dimensions

TO-263C

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	0.00	0.15	0.000	0.006
A2	4.30	4.55	0.169	0.179
B	1.10	1.50	0.043	0.059
b	0.70	0.90	0.028	0.035
b1	1.20	1.50	0.047	0.059
c	0.30	0.60	0.012	0.024
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
L	15.00	15.30	0.591	0.602
L1	5.20	5.40	0.205	0.213
L2	2.40	2.60	0.094	0.102
L3	1.60	1.80	0.063	0.071

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