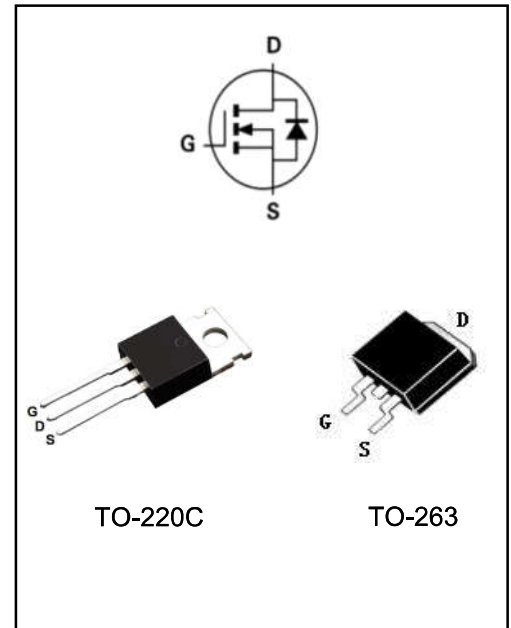


100V N-Channel Enhancement Mode MOSFET

MAIN CHARACTERISTICS

I_D	130A
V_{DSS}	100V
R_{DS(on)-typ(@V_{GS}=10V)}	<4.4mΩ (Type:3.8mΩ)



FEATURES

Adopt advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

APPLICATIONS

- 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℃ maximum,10s per JESD 22-B106

Product Specification Classification

Part Number	Package	Marking	Pack
YFWG130N10AC	TO-220C	YFW G130N10AC XXXXX	1000PCS/Box
YFWG130N10AS	TO-263	YFW G130N10AS XXXXX	800PCS/Reel

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continue Drain Current	I_D	130	A
Pulsed Drain Current (Note1)	I_{DM}	520	A
Power Dissipation	P_D	210	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	750	mJ
Operating Temperature Range	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.71	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	55	°C/W

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

Electrical Characteristics at Tc=25°C unless otherwise specified

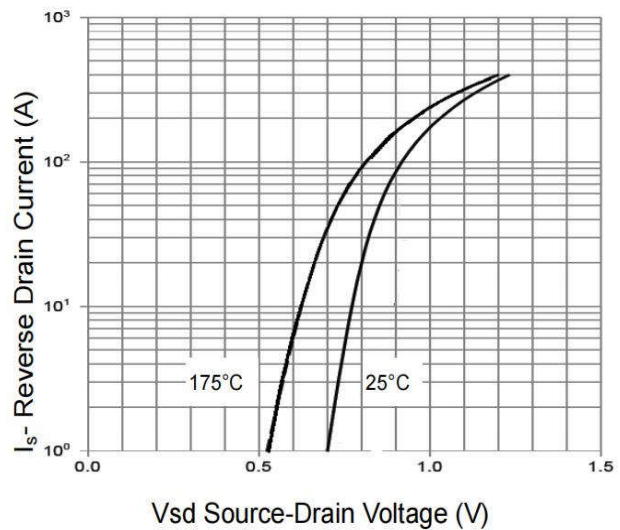
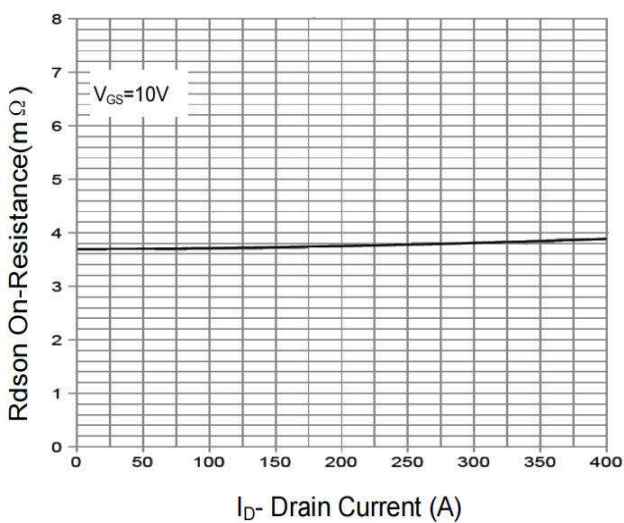
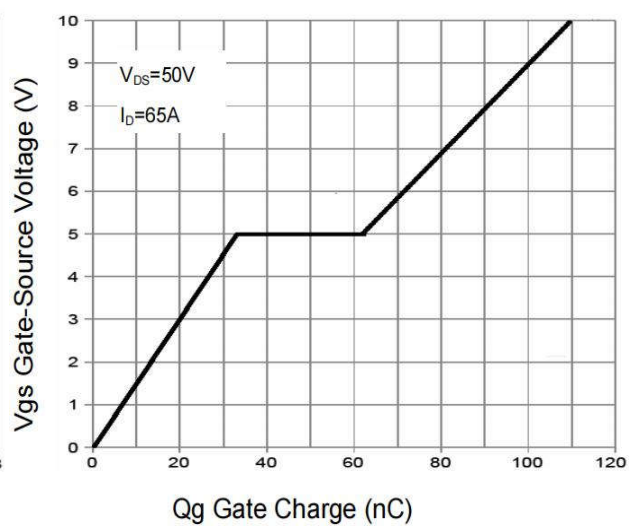
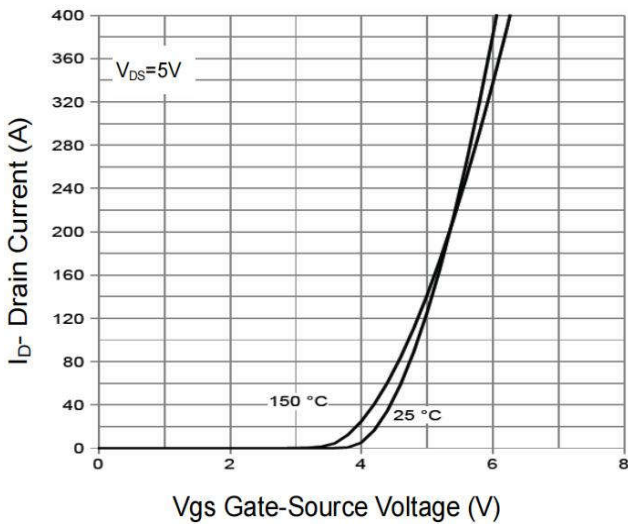
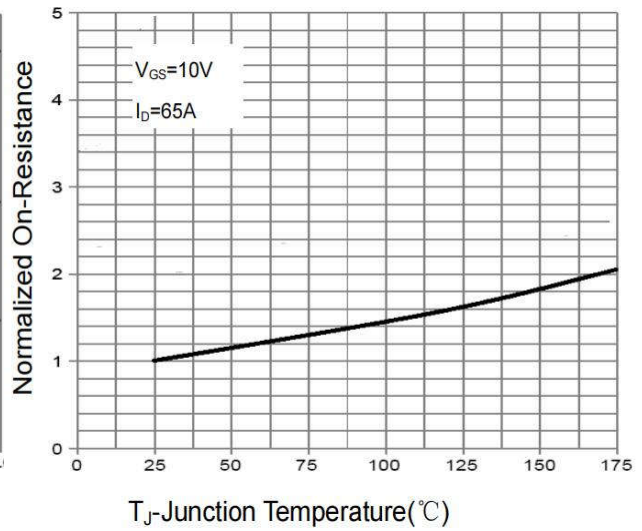
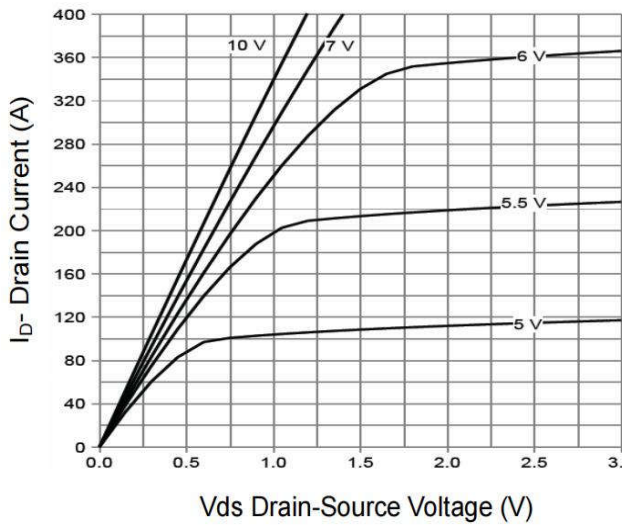
Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0 V, I_D = 250 \mu A$	BV_{DSS}	100	-	-	V
Drain-Source Leakage Current	$V_{DS} = 100 V, V_{GS} = 0 V$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 20 V, V_{DS} = 0 V$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu A$	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance (Note 3)	$V_{GS} = 10 V, I_D = 40 A$	$R_{DS(on)}$	-	3.8	4.4	m Ω
Forward Transconductance	$V_{DS} = 5 V, I_D = 65 A$	gfs	-	130	-	S
Input Capacitance	$V_{DS}=50 V, V_{GS}=0V, f=1MHz$	C_{iss}	-	6300	-	pF
Output Capacitance		C_{oss}	-	560	-	pF
Reverse Transfer Capacitance		C_{rss}	-	40	-	pF
Turn-on Delay Time(Note2)	$V_{DD}=50 V, V_{GS}=10 V, RG=3 \Omega, I_D=65A$	$t_{d(ON)}$	-	23	-	ns
Rise Time(Note2)		t_r	-	15	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	48	-	ns
Fall Time(Note2)		t_f	-	16	-	ns
Total Gate Charge(Note2)	$V_{DS}=50V, V_{GS}=10V, I_D=65A$	Q_G	-	110	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	33	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	30	-	nC

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

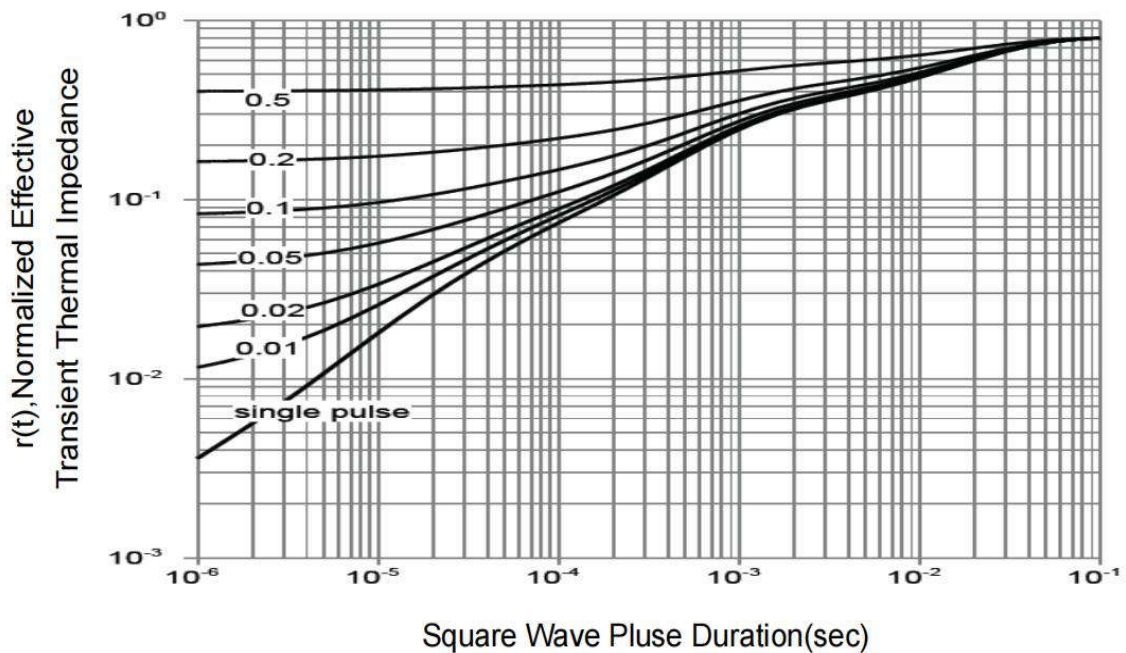
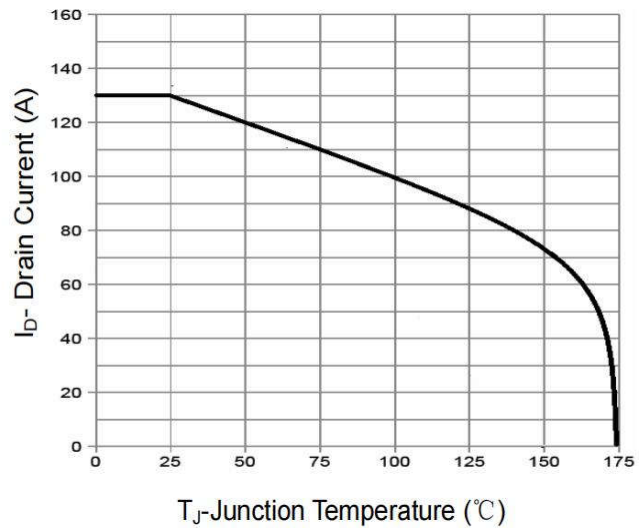
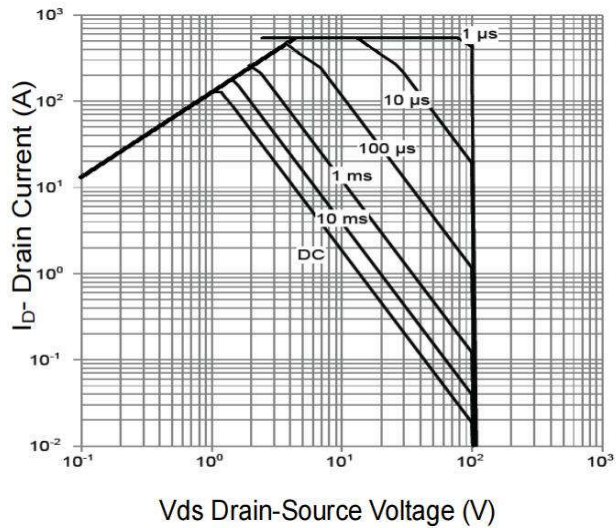
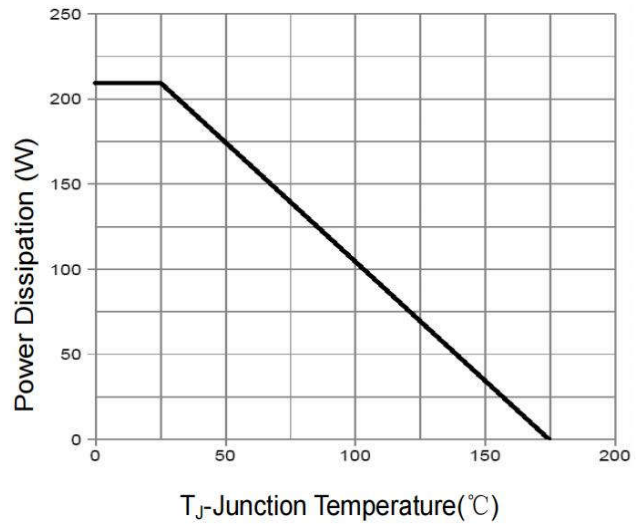
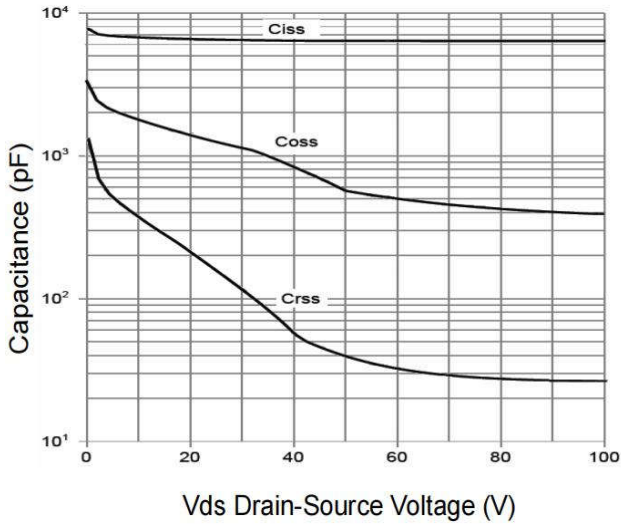
Characteristics	Test Condition	Symbo	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	130	A
Drain-Source Diode Forward Voltage	$V_{GS}=0V, I_S=40A, T_J=25^\circ C$	V_{SD}	-	0.86	1.2	V
Reverse Recovery Time(Note2)	$T_J = 25^\circ C, I_F = 65A$ $di / dt = 100 A/\mu s$	t_{rr}	-	70	-	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	117	-	nC

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

RATINGS AND CHARACTERISTIC CURVES

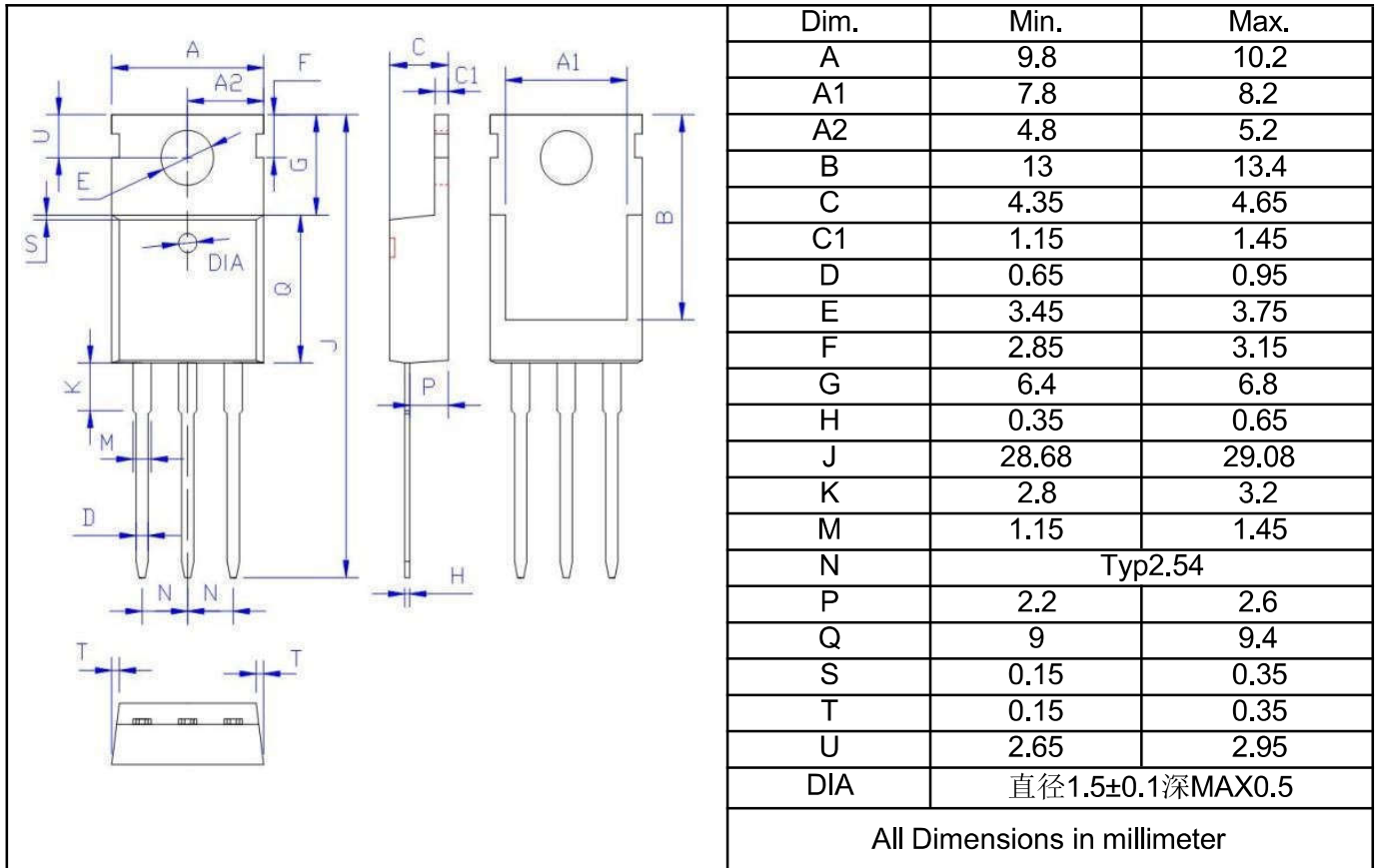


RATINGS AND CHARACTERISTIC CURVES



Package Outline Dimensions millimeters

TO-220C



TO-263

