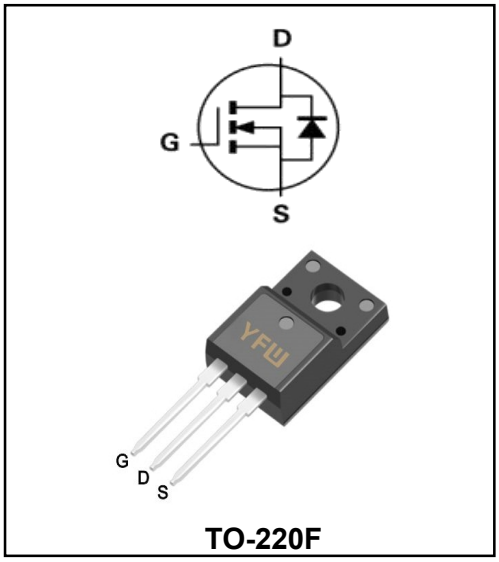
650V N-channel Super Junction MOSFET

MAIN CHARACTERISTICS

I_D	11A
V_{DSS}	650V
R_{DSON}-typ(@V_{GS}=10V)	<380mΩ(Type:340mΩ)



TO-220F

APPLICATIONS

- Solar inverters
- LCD/LED/PDP TV
- Telecom/Server Power supplies
- AC-DC 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

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	±30	V
Continue Drain Current	I_D	11	A
Pulsed Drain Current (Note1)	I_{DM}	31.8	A
Power Dissipation	P_D	84.5	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	220	mJ
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.48	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62	°C/W

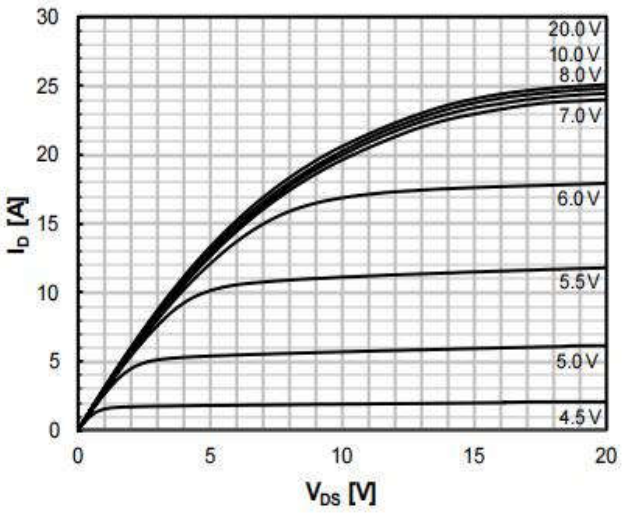
Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

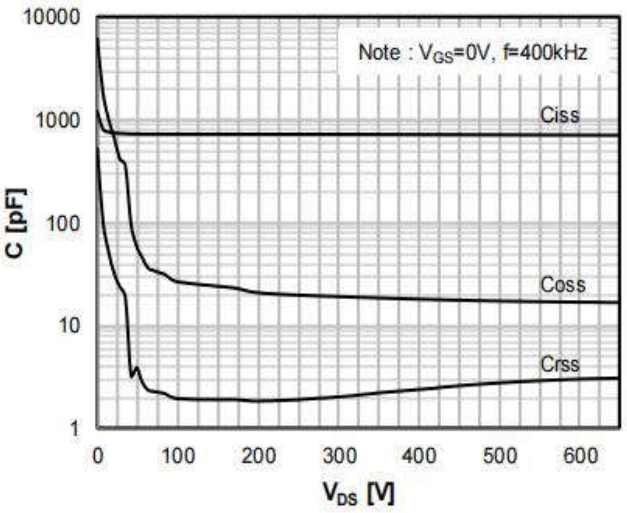
Maximum Ratings at Tc=25°C unless otherwise specified

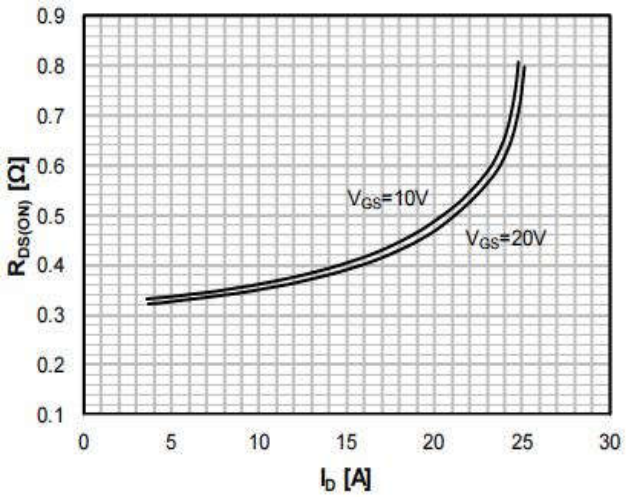
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS} = 0 V,I_D = 250 μA	BV_{DSS}	650	-	-	V
Drain-Source Leakage Current	V_{DS} = 650 V, V_{GS} = 0 V	I_{DSS}	-	-	1	uA
Gate Leakage Current	V_{GS} = ± 30 V, V_{DS} = 0 V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	V_{DS} = V_{GS} , I_D = 250 μA	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance	V_{GS} = 10 V, I_D = 1 A	$R_{DS(on)}$	-	340	380	mΩ
Input Capacitance	V_{GS} = 0 V, V_{DS} = 50V, f = 400KHz	C_{iss}	-	747	-	pF
Output Capacitance		C_{oss}	-	55	-	
Reverse Transfer Capacitance		C_{rss}	-	3.3	-	
Turn-on Delay Time	ID =10.6 A, VDD =325 V, VGS =10V,RG= 25 Ω	$t_{d(ON)}$	-	18	-	nS
Rise Time		t_r	-	31	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	65	-	
Fall Time		t_f	-	28	-	
Total Gate Charge	I_D = 10.6A, VDS = 520 V, V_{GS} = 10 V	Q_G	-	20	-	nC
Gate to Source Charge		Q_{GS}	-	3.7	-	
Gate to Drain Charge		Q_{GD}	-	9	-	
Reverse recovery time	ISD = 10.6A, VDD = 100V, di/dt = 100A/us	trr	-	323	-	ns
Reverse recovery current		I_{rr}	-	17.5	-	A
Reverse recovery charge		Q_{rr}		2.8		uC
Drain-Source Diode Forward Voltage	VGS=0V , IS=10.6A , TJ=25℃	V_{SD}	-	1.4	-	v

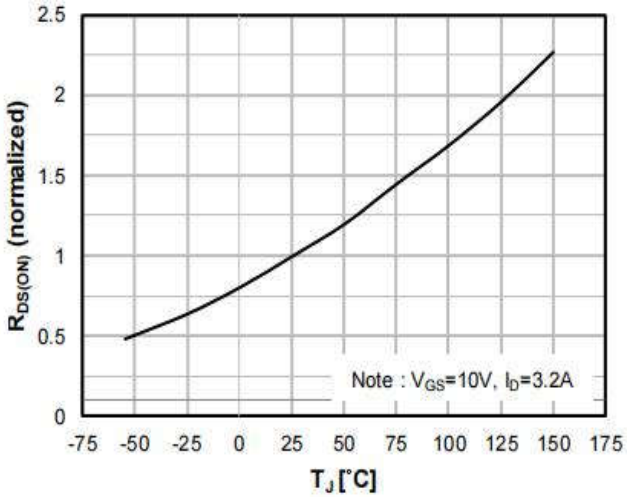
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

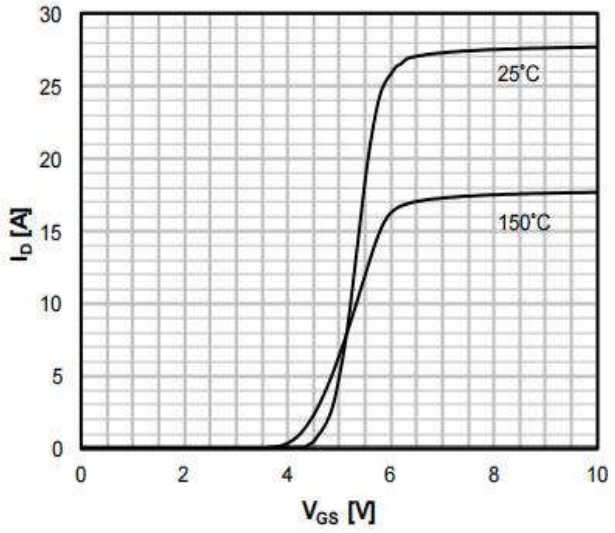
Ratings and Characteristic Curves

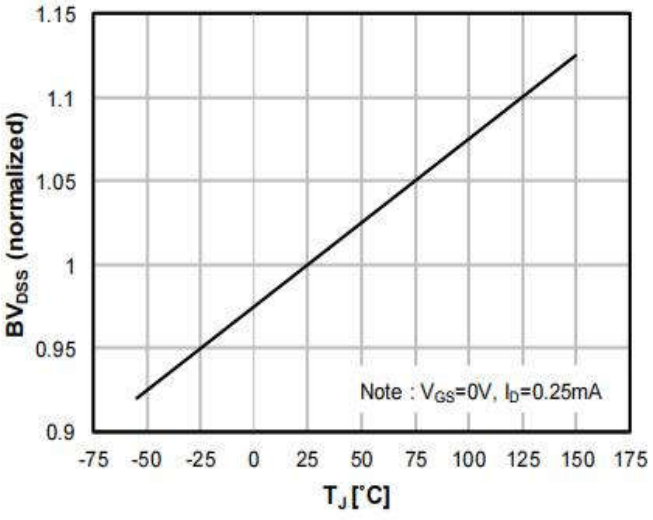




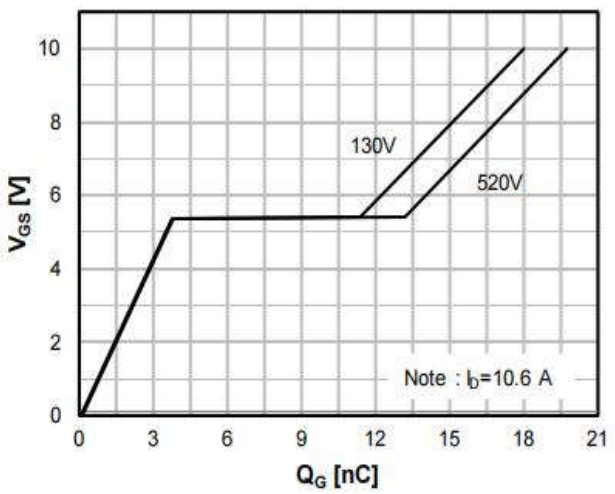


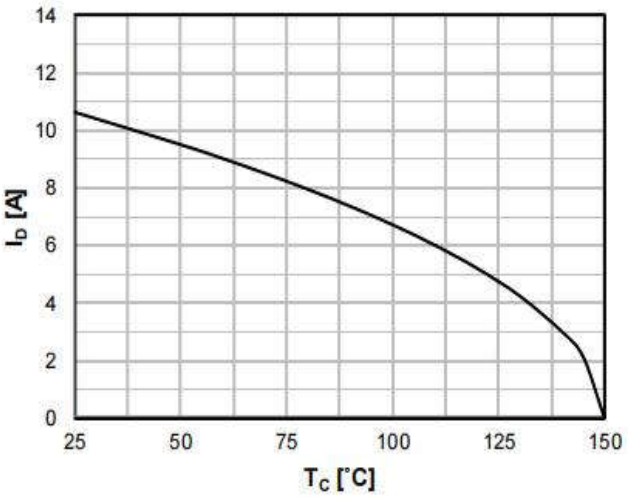


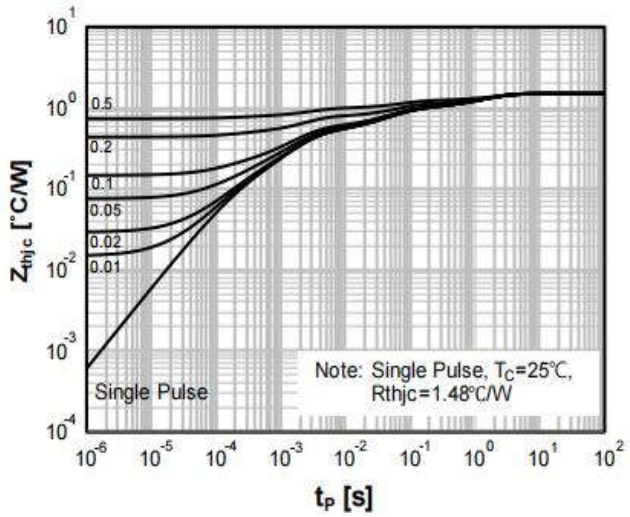


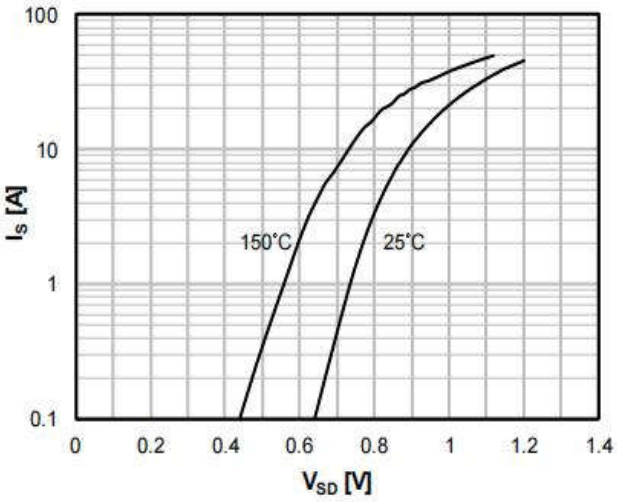


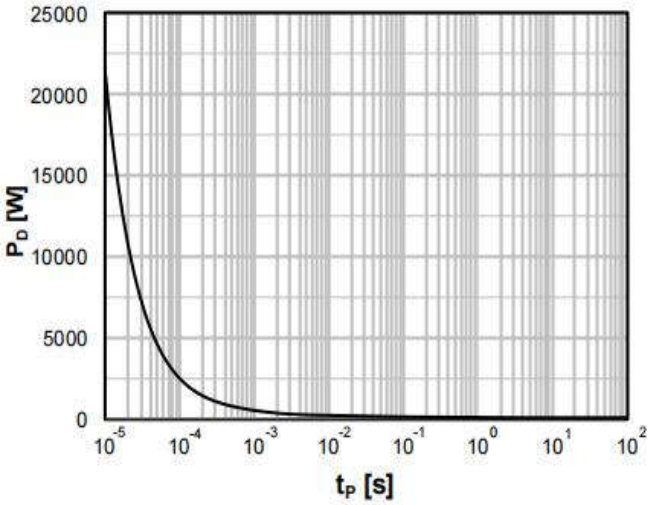
Ratings and Characteristic Curves

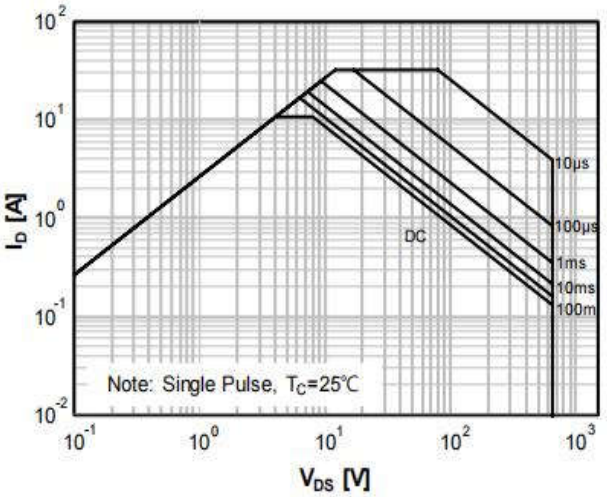




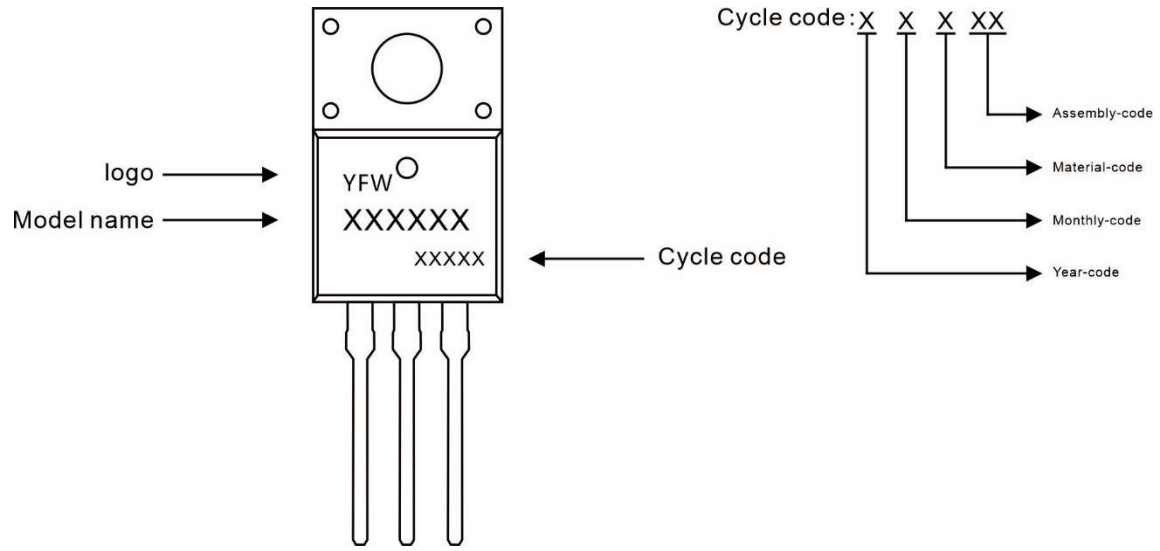








Marking Diagram

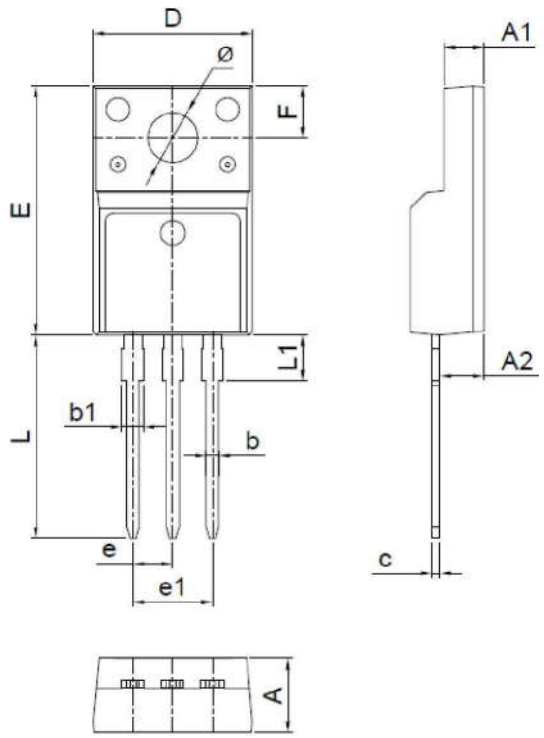


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW65R380AF	TO-220F	0.06oz(1.74g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220F



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.50	4.90	0.177	0.193
A1	2.34	2.74	0.092	0.108
A2	2.66	2.86	0.105	0.113
b	0.75	0.85	0.030	0.033
b1	1.24	1.44	0.049	0.057
c	0.40	0.60	0.016	0.024
D	10.00	10.32	0.394	0.406
E	15.75	16.05	0.620	0.632
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	3.10	3.5	0.122	0.138
L	13.50	13.90	0.531	0.547
L1	2.90	3.30	0.114	0.130
Φ	3.10	3.30	0.122	0.130

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