

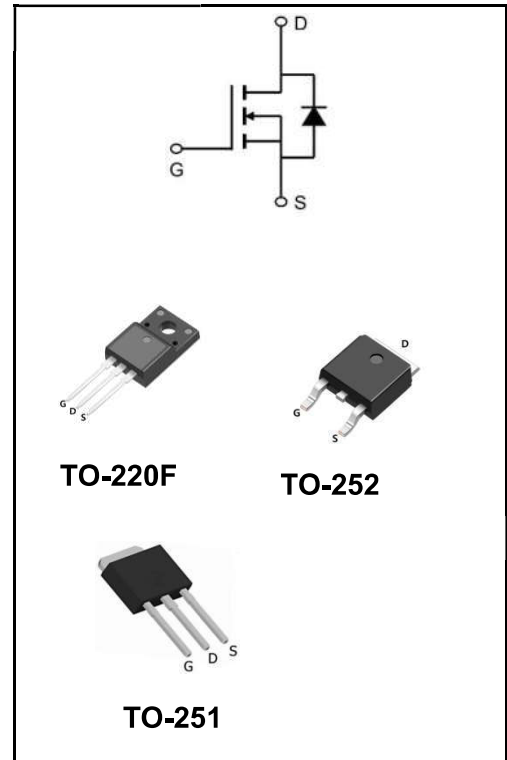
**650V N-Channel Super Junction MOSFE**

**MAIN CHARACTERISTICS**

$I_D$	7 A
$V_{DSS}$	650V
$R_{DS(on)-typ}(@V_{GS}=10V)$	< 600mΩ (Type: 530mΩ)

**Application**

- ◆ 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°C maximum, 10s per JESD 22-B106

**Product Specification Classification**

Part Number	Package	Marking	Pack
YFW65R600AF	TO-220F	YFW 65R600AF XXXXX	1000PCS/Tape
YFW65R600AD	TO-252	YFW 65R600AD XXXXX	2500PCS/Tape
YFW65R600AMJ	TO-251	YFW 65R600AMJ XXXXX	4000PCS/Tape

**Maximum Ratings at Tc=25°C unless otherwise specified**

Characteristics	Symbols	Value		Units
		220F	252/251	
Drain-Source Voltage	V <sub>DS</sub>	650		V
Gate - Source Voltage	V <sub>GS</sub>	±30		V
Continuous Drain Current	I <sub>D</sub>	7		A
Pulsed Drain Current(note1)	I <sub>DM</sub>	24		A
Power Dissipation	P <sub>D</sub>	28	64	W
Single Pulse Avalanche Energy(note1)	E <sub>AS</sub>	129		mJ
Operating Temperature Range	T <sub>J</sub>	-50 to +150		°C
Storage Temperature Range	T <sub>STG</sub>	-50 to +150		°C
Thermal Resistance, Junction-to-case	R <sub>θJC</sub>	4.8	1.97	°C/W
Thermal Resistance, Junction ambient	R <sub>θJA</sub>	62		°C/W

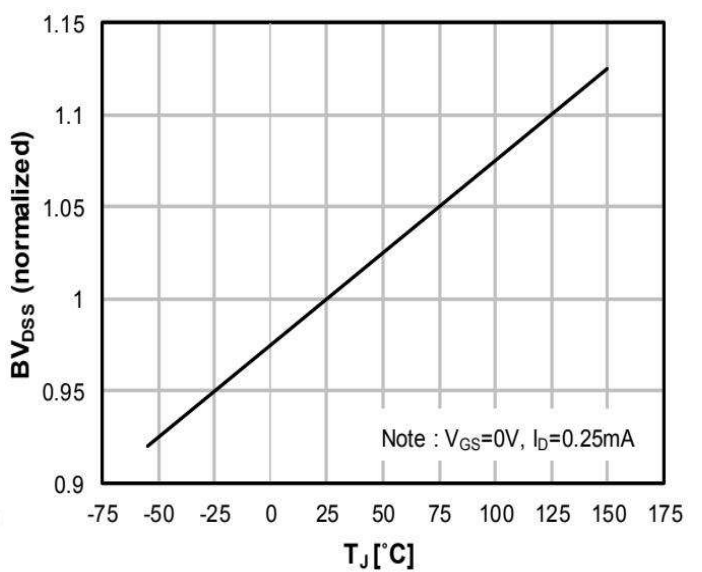
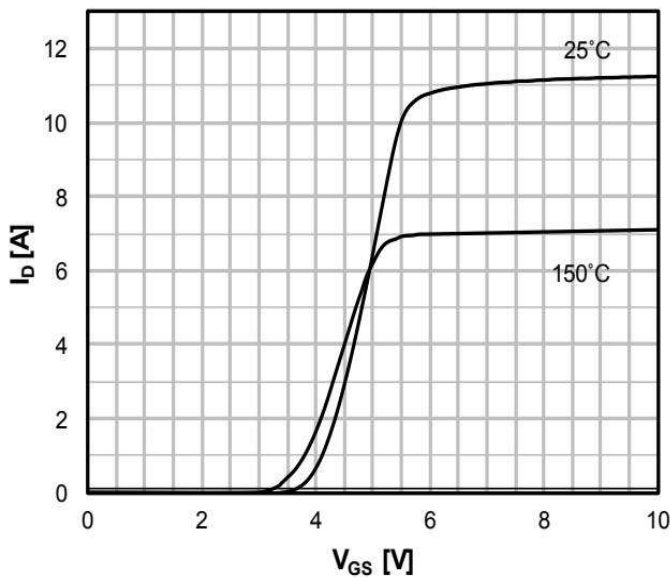
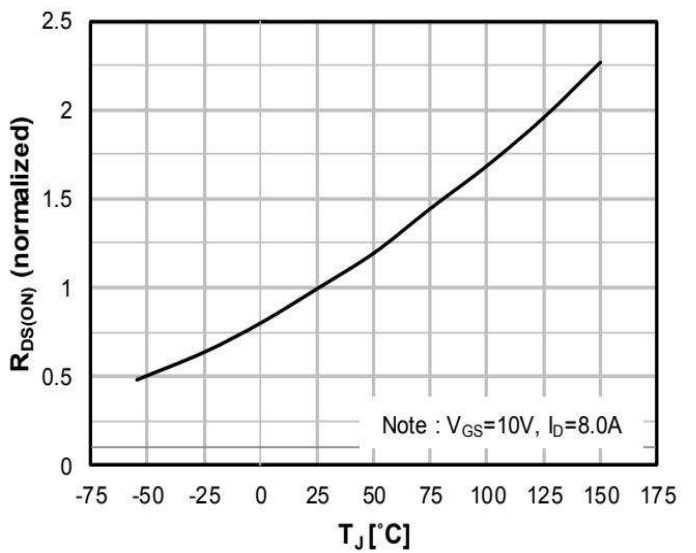
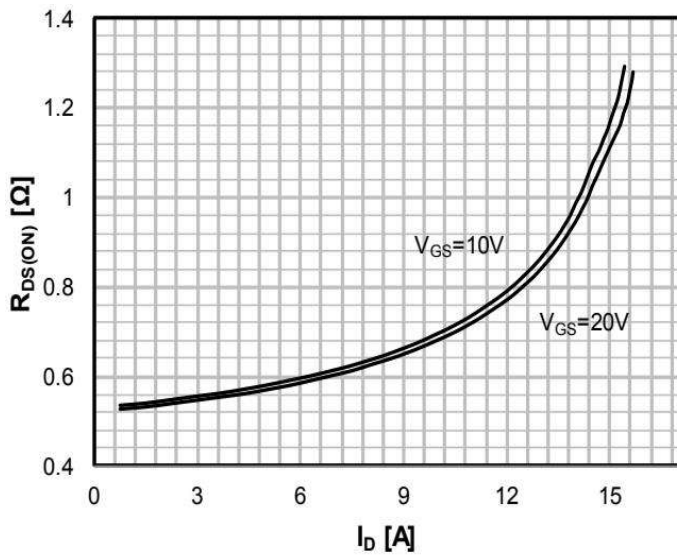
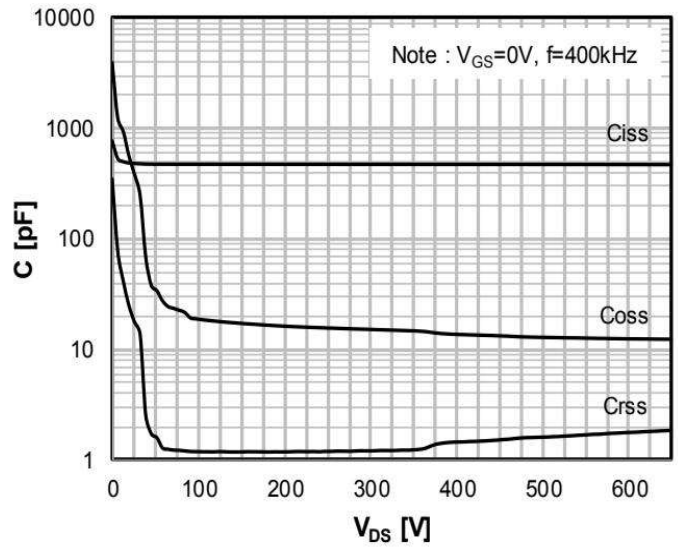
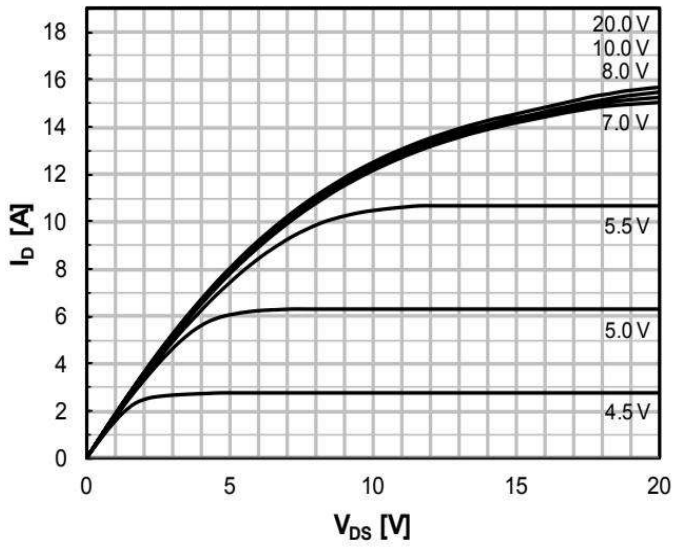
Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

**Maximum Ratings at Tc=25°C unless otherwise specified**

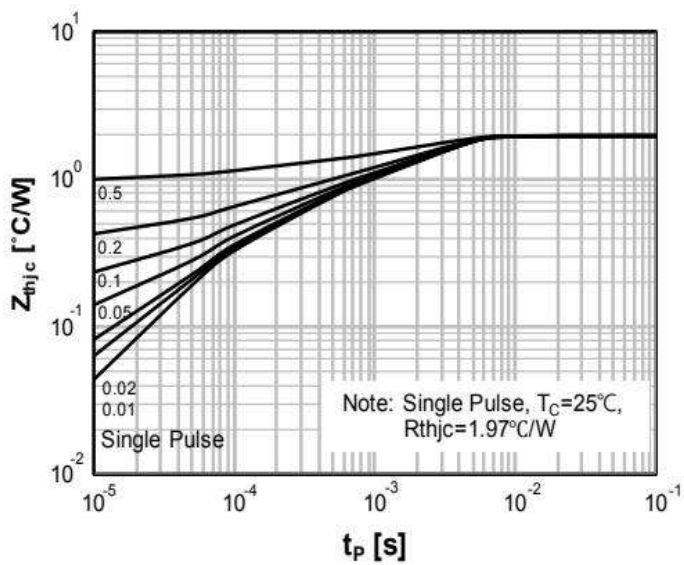
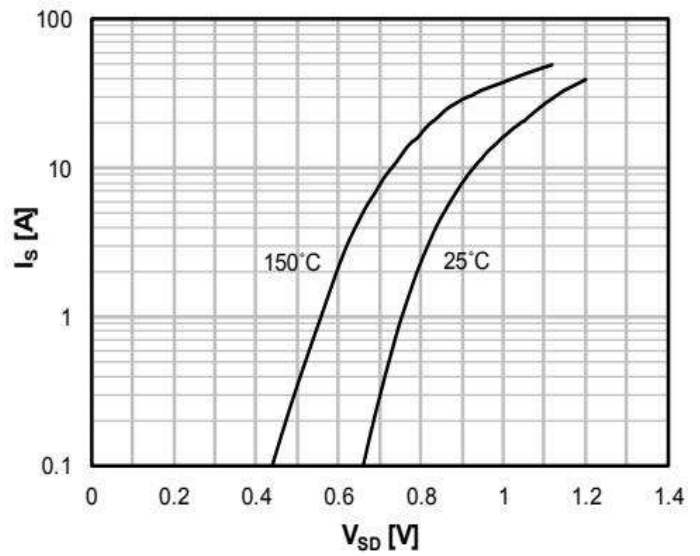
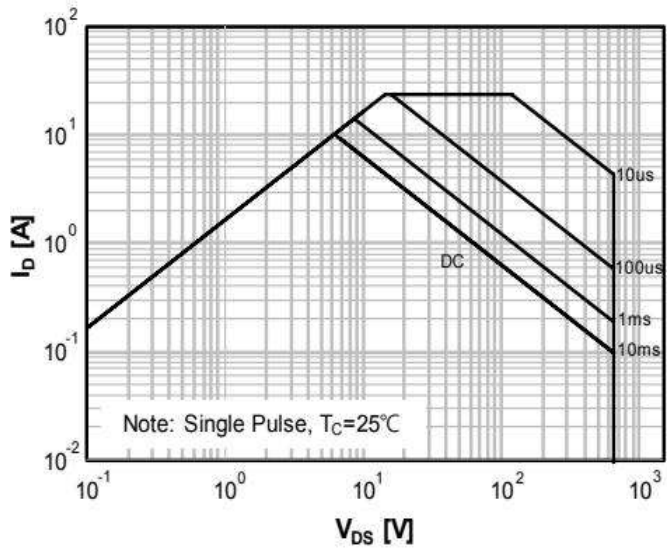
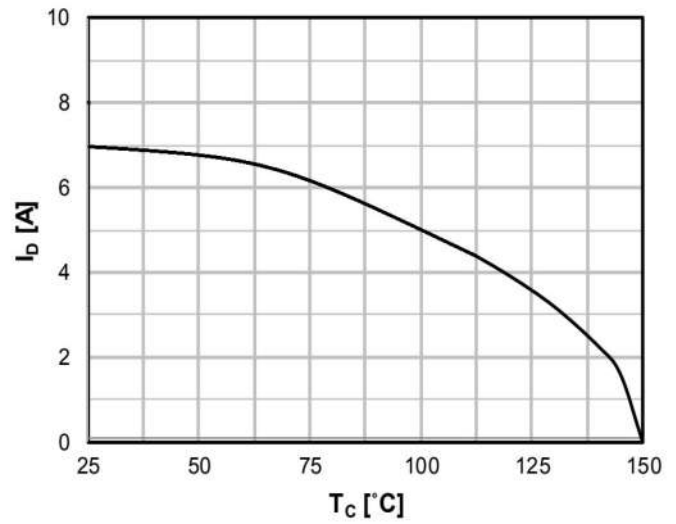
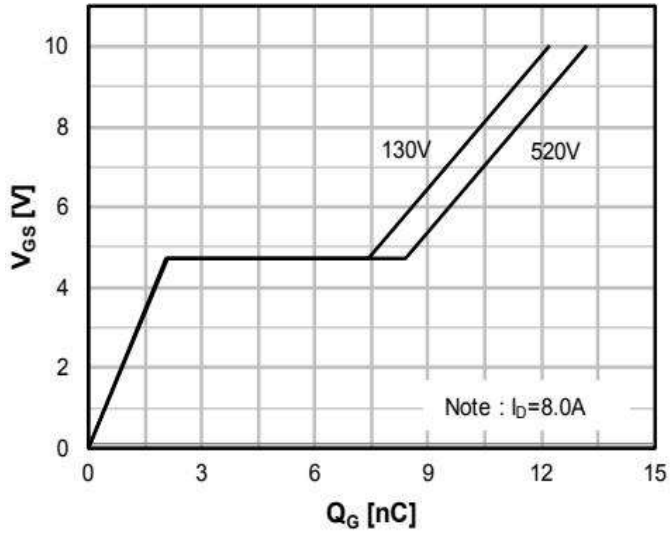
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	BV <sub>DSS</sub>	650	-	-	V
Drain-Source Leakage Current	V <sub>DS</sub> =650V, V <sub>GS</sub> =0V	I <sub>DSS</sub>	-	-	1	μA
Gate-Source Leakage	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0V	I <sub>GSS</sub>	-	-	±100	nA
Gate- Source Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250μA	V <sub>GS(th)</sub>	2	-	4	V
Drain-Source On State Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =3.5A	R <sub>DS(ON)</sub>	-	530	600	mΩ
Forward Transconductance	V <sub>DS</sub> = 5 V, I <sub>D</sub> = 2A	g <sub>fs</sub>	-	-	8	S
Input Capacitance	V <sub>DS</sub> =50V V <sub>GS</sub> =0V f=1MHz	C <sub>iss</sub>	-	471	-	PF
Output Capacitance		C <sub>oss</sub>	-	35	-	
Reverse Transfer Capacitance		C <sub>rss</sub>	-	1.7	-	
Turn-on delay time(note2)	V <sub>DD</sub> =325V V <sub>GS</sub> =10V R <sub>G</sub> =25Ω I <sub>D</sub> =7A	t <sub>d(on)</sub>	-	17	-	nS
Rise Time(note2)		T <sub>r</sub>	-	26	-	
Turn-Off Delay Time(note2)		t <sub>d(OFF)</sub>	-	53	-	
Fall Time(note2)		t <sub>f</sub>	-	38	-	
Total Gate Charge(note2)	V <sub>DS</sub> =520V V <sub>GS</sub> =10V I <sub>D</sub> =7A	Q <sub>g</sub>	-	13	-	nC
Gate-to Source Charge(note2)		Q <sub>gs</sub>	-	2.1	-	
Gate-Drain Charge(note2)		Q <sub>gd</sub>	-	6.9	-	
Maximun Body-Diode Continuous Current		I <sub>S</sub>	-	-	7	A
Maximun Body-Diode Pulsed Current(Note2)		I <sub>SM</sub>	-	-	24	A
Drain-Source Diode Forward Voltage	T <sub>J</sub> = 25°C, I <sub>S</sub> = 3.5A, V <sub>GS</sub> = 0V	V <sub>SD</sub>	-	-	1.4	V

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

Ratings and Characteristic Curves

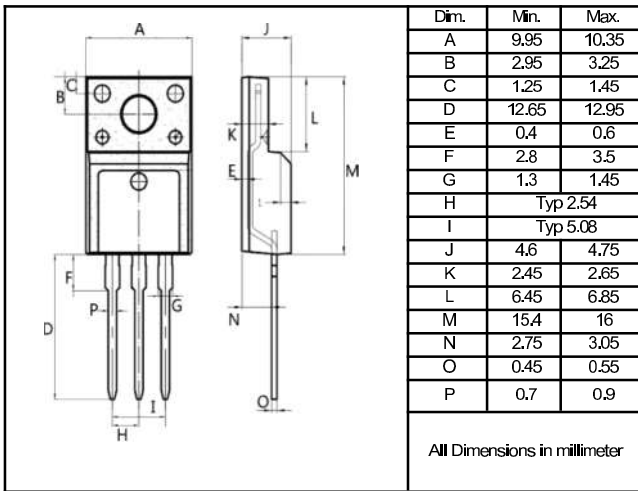


Package Outline Dimensions Millimeters

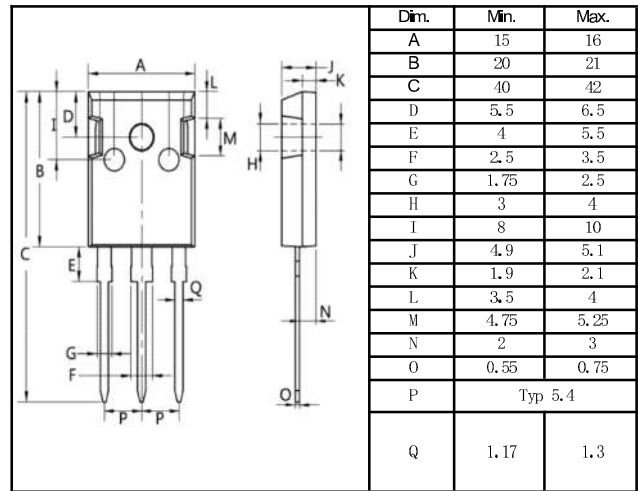


Package Outline Dimensions Millimeters

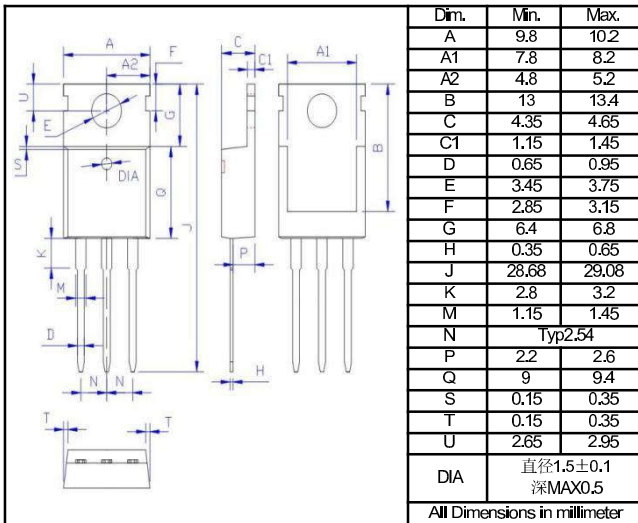
T0-220F



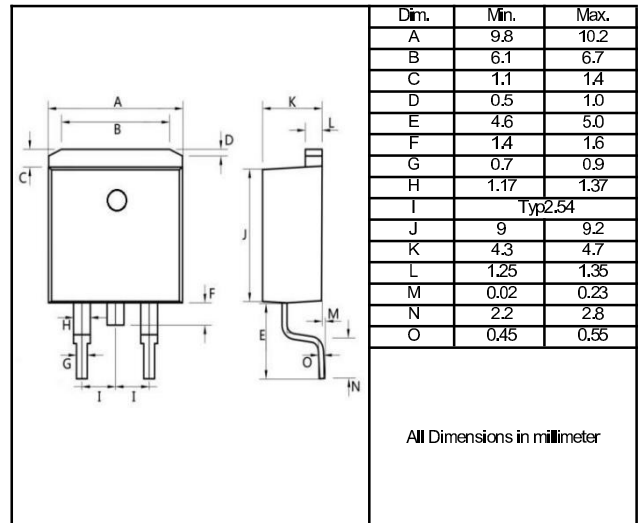
T0-247



T0-220C



T0-263C



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				

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