

**650V N-CHANNEL ENHANCEMENT MODE MOSFET**

**MAIN CHARACTERISTICS**

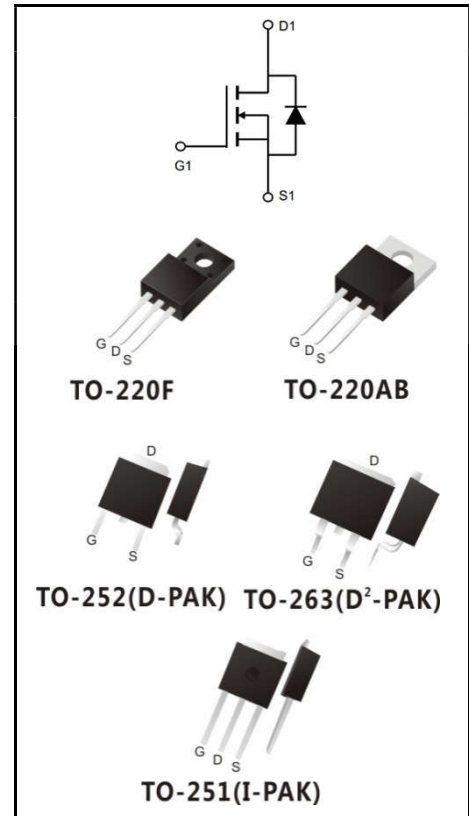
<b>I<sub>D</sub></b>	7A
<b>V<sub>DSS</sub></b>	650V
<b>R<sub>DS(on)</sub>-typ(@V<sub>GS</sub>=10V)</b>	<1.4Ω (Type:1.2Ω)

**Features**

- ◆Fast Switching
- ◆Low ON Resistance
- ◆Low Gate Charge
- ◆100% Single Pulse avalanche energy Test
- ◆LeadfreeincomplywithEUroHS2011/65/EUdirectives

**Mechanical Data**

- ◆Case: Molded plastic
- ◆Mounting Position: Any
- ◆Molded Plastic: UL Flammability Classification Rating 94V-0
- ◆Solder bath temperature275℃maximum,10s per JESD22-106



**Product Specification Classification**

Part Number	Package	Marking	Pack
YFW7N65AT	TO-220AB	YFW 7N65AT XXXXX	1000PCS/Box
YFW7N65AF	TO-220F(0.5mm)	YFW 7N65AF XXXXX	1000PCS/Box
YFW7N65AS-G	TO-263	YFW 7N65AS XXXXX	1000PCS/Box
YFW7N65AS	TO-263	YFW 7N65AS XXXXX	800PCS/Reel
YFW7N65AMJ	TO-251	YFW 7N65AMJ XXXXX	1000PCS/Box
YFW7N65AD	TO-252	YFW 7N65AD XXXXX	2500PCS/Reel

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

Characteristics	Symbols	Value			Units
		220AB/263	220F	251/252	
Drain-Source Voltage	<b>V<sub>DS</sub></b>	650			<b>V</b>
Gate-Source Voltage	<b>V<sub>GS</sub></b>	±30			<b>V</b>
Continue Drain Current-Continuous (TC = 25°C)	<b>I<sub>D</sub></b>	7			<b>A</b>
-Continuous (TC = 100°C)		4.5			
Pulsed Drain Current (Note1)	<b>I<sub>DM</sub></b>	28			<b>A</b>
Power Dissipation	<b>P<sub>D</sub></b>	130	48	93	<b>W</b>
-Derate above 25°C		1.15	0.38	0.78	<b>W/°C</b>
Single Pulse Avalanche Energy (Note2)	<b>E<sub>AS</sub></b>	550			<b>mJ</b>
Avalanche Current (Note 1)	<b>I<sub>AR</sub></b>	7			<b>A</b>
Repetitive Avalanche Energy (Note 1)	<b>E<sub>AS</sub></b>	14			<b>mJ</b>
Operating Temperature Range	<b>T<sub>J</sub></b>	150			<b>°C</b>
Storage Temperature Range	<b>T<sub>STG</sub></b>	-55 to +150			<b>°C</b>
Thermal Resistance, Junction to Case	<b>R<sub>θJC</sub></b>	1.02	2.8	1.35	<b>°C/W</b>
Thermal Resistance, Junction to Ambient	<b>R<sub>θJA</sub></b>	62.5	62.5	62	<b>°C/W</b>

**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> = 0 V, I <sub>D</sub> = 250 μA	<b>BV<sub>DSS</sub></b>	650	-	-	<b>V</b>
Drain-Source Leakage Current	V <sub>DS</sub> = 650 V, V <sub>GS</sub> = 0 V	<b>I<sub>DSS</sub></b>	-	-	1	<b>uA</b>
	V <sub>DS</sub> = 520 V, T <sub>c</sub> = 125°C		-	-	10	
Gate Leakage Current	V <sub>GS</sub> = ± 30 V, V <sub>DS</sub> = 0 V	<b>I<sub>GSS</sub></b>	-	-	±100	<b>nA</b>
Gate-Source Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	<b>V<sub>GS(th)</sub></b>	2	-	4	<b>V</b>
Drain-Source On-State Resistance	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 3.5 A	<b>R<sub>DS(on)</sub></b>	-	1.2	1.4	<b>Ω</b>
Forward Transconductance(Note3)	V <sub>DS</sub> = 40 V, I <sub>D</sub> = 3.5 A	<b>g<sub>fs</sub></b>	-	6.5	-	<b>S</b>
Input Capacitance	V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 25 V, f = 1MHz	<b>C<sub>iss</sub></b>	-	1010	-	<b>pF</b>
Output Capacitance		<b>C<sub>oss</sub></b>	-	92	-	
Reverse Transfer Capacitance		<b>C<sub>rss</sub></b>	-	5	-	
Turn-on Delay Time	I <sub>D</sub> = 7 A, V <sub>DD</sub> = 325 V, R <sub>G</sub> = 25Ω(Note3,4)	<b>td(ON)</b>	-	18	-	<b>nS</b>
Rise Time		<b>tr</b>	-	19	-	
Turn-Off Delay Time		<b>td(OFF)</b>	-	39	-	
Fall Time		<b>tf</b>	-	18	-	
Total Gate Charge	I <sub>D</sub> = 7 A, V <sub>DD</sub> = 520V, V <sub>GS</sub> = 10 V(Note3,4)	<b>Q<sub>G</sub></b>	-	33	-	<b>nC</b>
Gate to Source Charge		<b>Q<sub>GS</sub></b>	-	5	-	
Gate to Drain Charge		<b>Q<sub>GD</sub></b>	-	9	-	

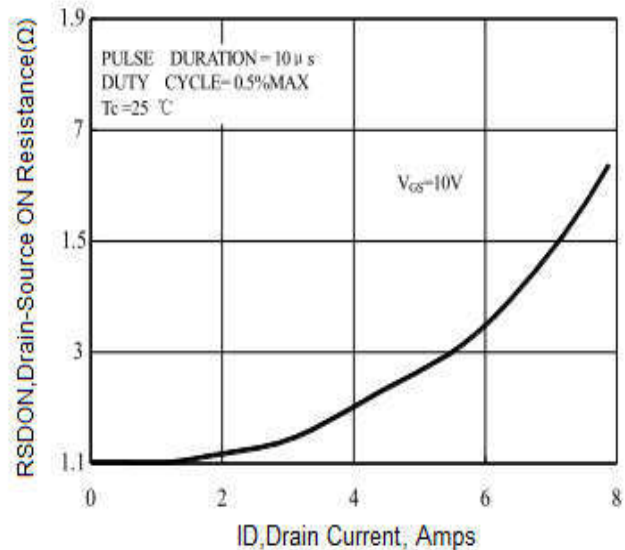
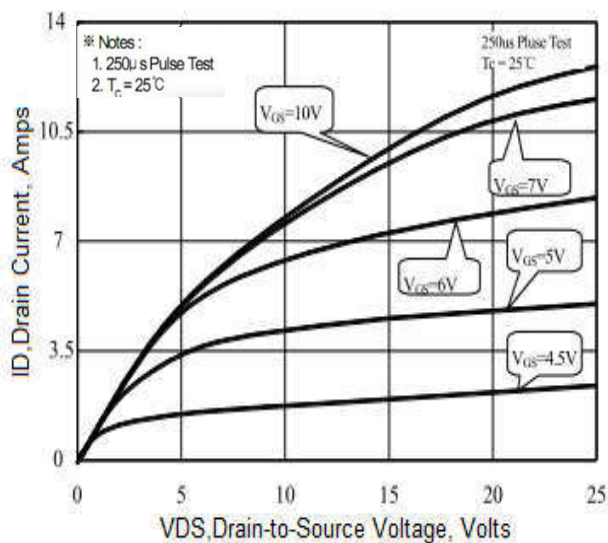
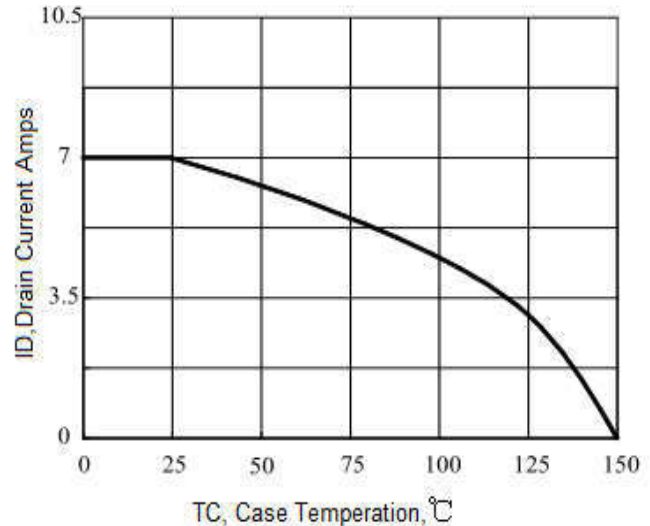
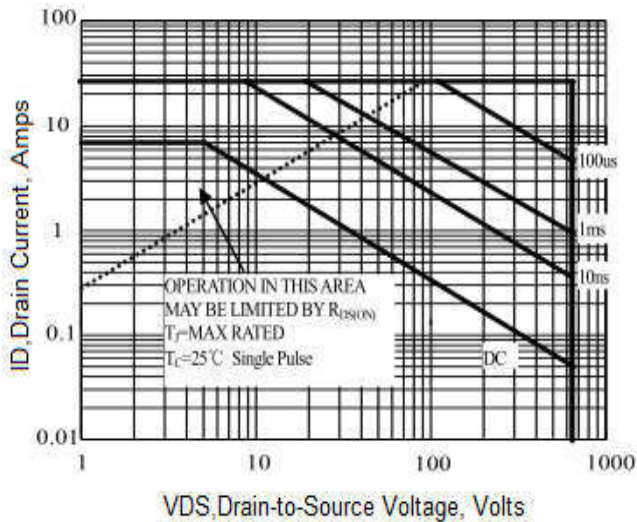
**Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified**

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Maximum Continuous Drain-Source Diode Forward Current		<b>I<sub>S</sub></b>	-	-	7	<b>A</b>
Maximum Pulsed Drain-Source Diode Forward Current		<b>I<sub>SM</sub></b>	-	-	28	<b>A</b>
Drain-Source Diode Forward Voltage	I <sub>SD</sub> = 7 A, V <sub>GS</sub> = 0 V	<b>V<sub>SD</sub></b>	-	-	1.4	<b>V</b>
Reverse Recovery Time	I <sub>SD</sub> = 7 A, V <sub>GS</sub> = 0 V,	<b>trr</b>	-	370	-	<b>nS</b>
Reverse Recovery Charge	dI <sub>F</sub> / dt = 100 A/μs(Note3)	<b>Q<sub>rr</sub></b>	-	1.9	-	<b>uC</b>

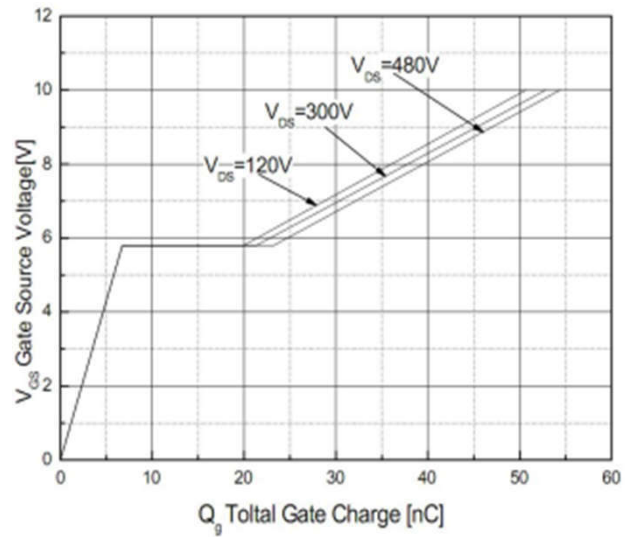
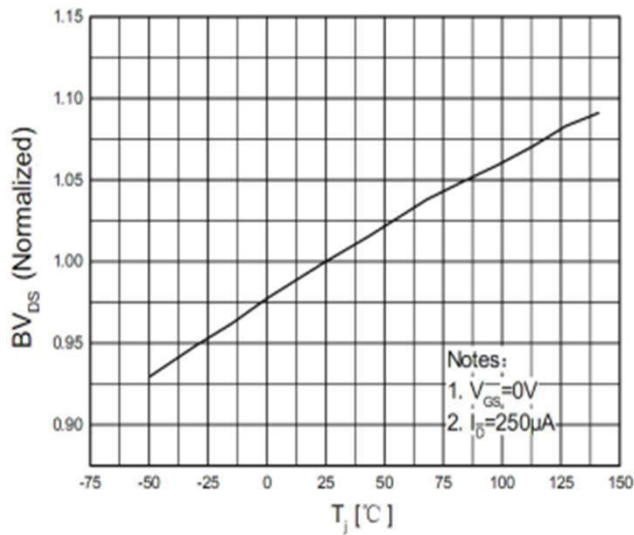
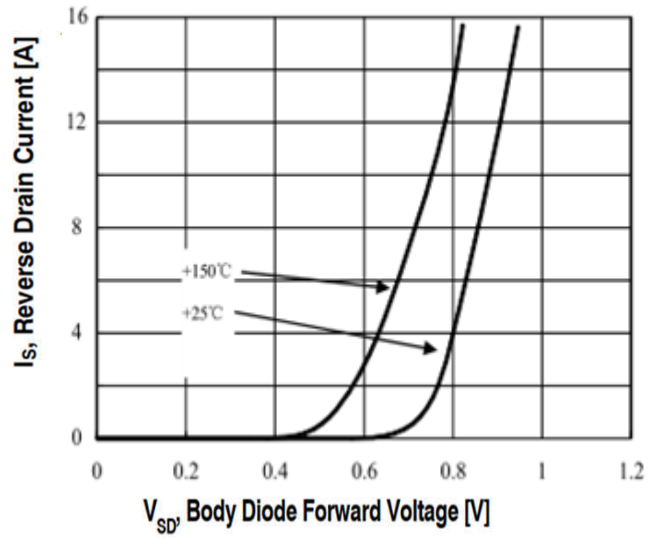
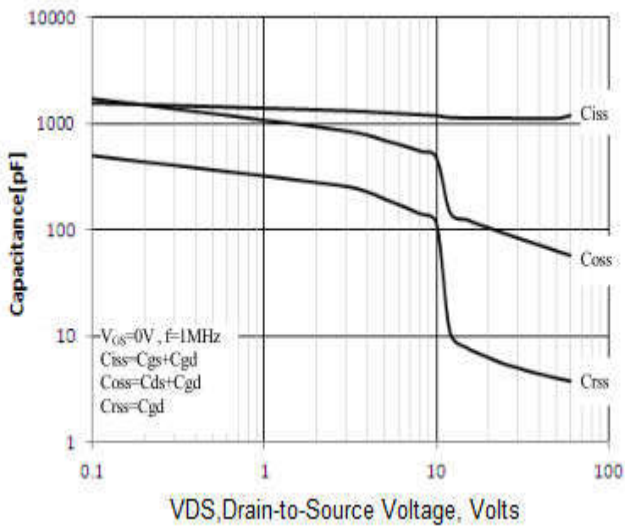
Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. I<sub>AS</sub> = 7 A, V<sub>DD</sub> = 50 V, L = 21mH, R<sub>G</sub> = 25Ω, starting T<sub>J</sub> = 25°C.
3. ulse test: Pulse Width ≤ 300 μ s, Duty Cycle ≤ 2%.
4. Essentially Independent of Operating

**Ratings and Characteristic Curves**



Ratings and Characteristic Curves



Package Outline Dimensions Millimeters

**TO-220AB**

	Dim.	Min.	Max.
	A	10.15	10.35
	B	2.65	2.95
	C	3.70	3.90
	D	28.5	29.5
	E	1.30	1.45
	F	6.35	6.55
	G	2.9	3.3
	H	15.0	16.0
	I	0.38	0.42
	J	4.45	4.55
	K	1.25	1.35
	L	Typ 5.08	
	M	Typ 2.54	
	N	3.1	3.3
O	0.76	0.84	
All Dimensions in millimeter			

**TO-220F**

	Dim.	Min.	Max.
	A	9.95	10.25
	B	2.95	3.25
	C	1.25	1.45
	D	12.95	13.25
	E	0.50	0.65
	F	3.1	3.3
	G	1.30	1.45
	H	Typ 2.54	
	I	Typ 5.08	
	J	4.60	4.75
	K	2.50	2.65
	L	6.35	6.55
	M	15.4	16.0
	N	2.75	3.05
O	0.48	0.52	
P	0.76	0.84	
All Dimensions in millimeter			

Package Outline Dimensions Millimeters

**TO-263**

	Dim.	Min.	Max.
	A	10.1	10.2
	B	7.4	7.6
	C	1.3	1.5
	D	0.55	0.75
	E	5.0	6.0
	F	1.4	1.6
	G	0.78	0.86
	H	1.2	1.3
	I	Typ2.54	
	J	8.4	8.6
	K	4.45	4.55
	L	1.25	1.35
	M	0.02	0.1
N	2.4	2.8	
O	0.36	0.40	
All Dimensions in millimeter			

**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				

Package Outline Dimensions Millimeters

TO-251

	Dim.	Min.	Max.
	A	2.2	2.4
	A2	0.95	1.15
	A3	0.45	0.65
	b	0.65	0.85
	c	0.45	0.55
	D	6.45	6.75
	D2	5.2	5.4
	E	5.8	6
	E2	0.95	1.25
	e	Typ 2.3	
	e1	Typ 4.6	
	L	4	4.2
	L1	1.2	1.5
All Dimensions in millimeter			

单击下面可查看定价，库存，交付和生命周期等信息

[>>YFW\(佑风微\)](#)