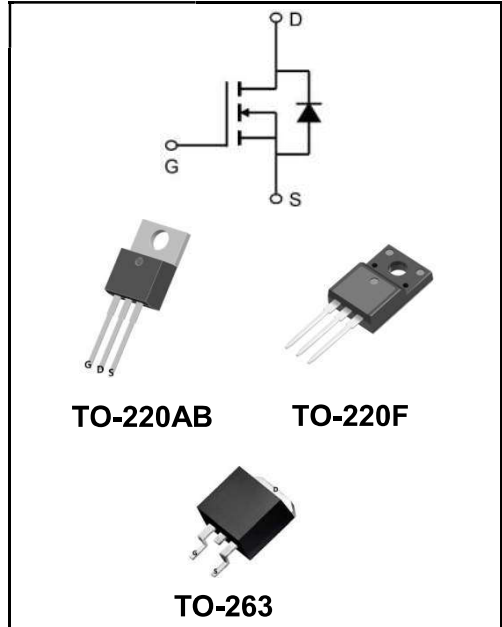


**600V N-CHANNEL ENHANCEMENT MODE MOSFET**

**MAIN CHARACTERISTICS**

<b>I<sub>D</sub></b>	11A
<b>V<sub>DSS</sub></b>	600V
<b>R<sub>DS(on)-typ</sub>(@V<sub>GS</sub>=10V)</b>	< 620mΩ ( <b>Type:510m.Ω</b> )



**Application**

- ◆Uninterruptible Power Supply(UPS)
- ◆Power Factor Correction (PFC)

**Product Specification Classification**

Part Number	Package	Marking	Pack
YFW11N60AT	TO-220AB	YFW 11N60AT XXXXX	1000PCS/Box
YFW11N60AF	TO-220F	YFW 11N60AF XXXXX	1000PCS/Box
YFW11N60AS	TO-263	YFW 11N60AS XXXXX	800PCS/Reel

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

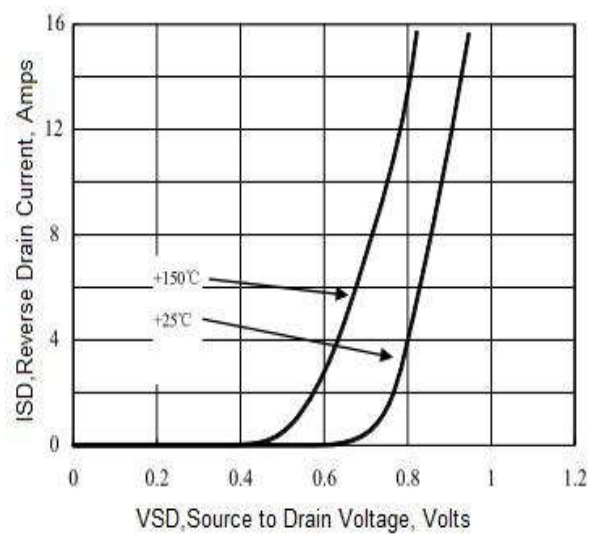
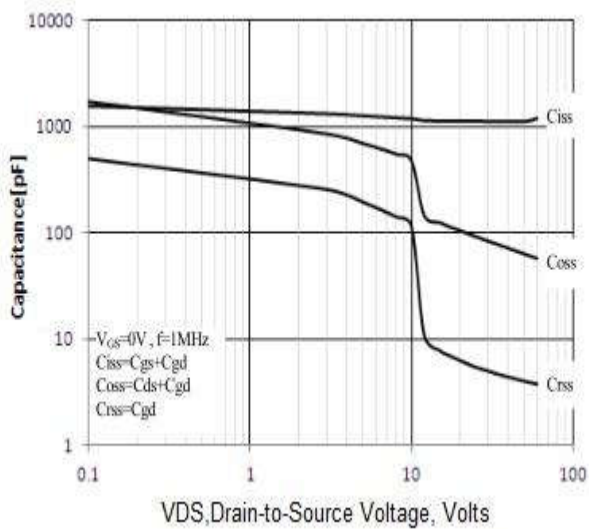
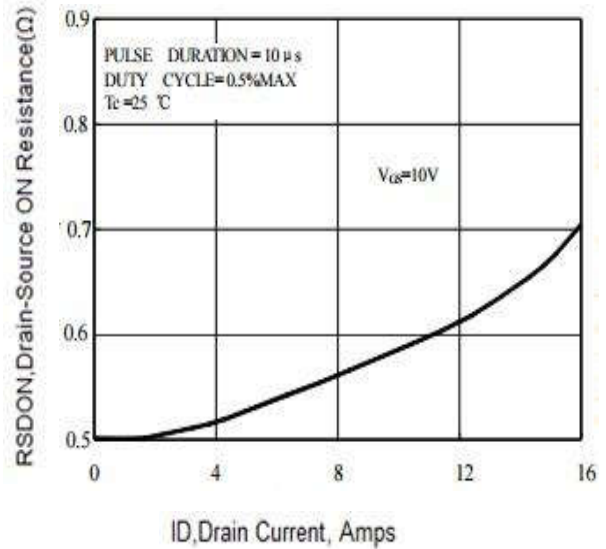
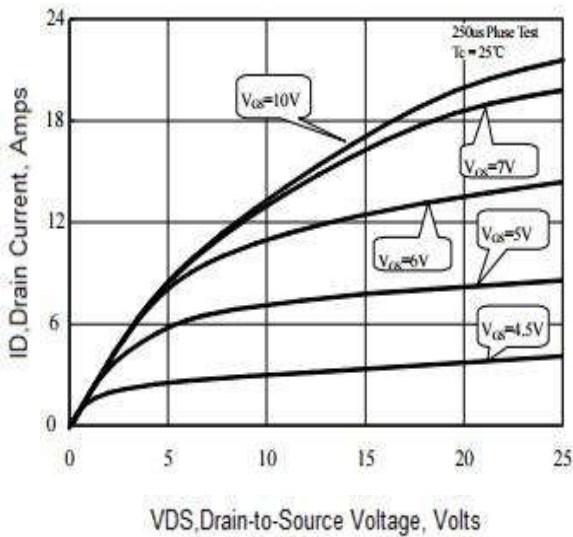
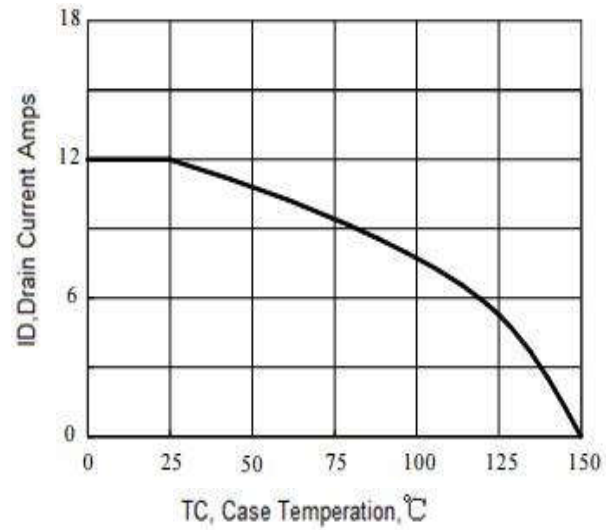
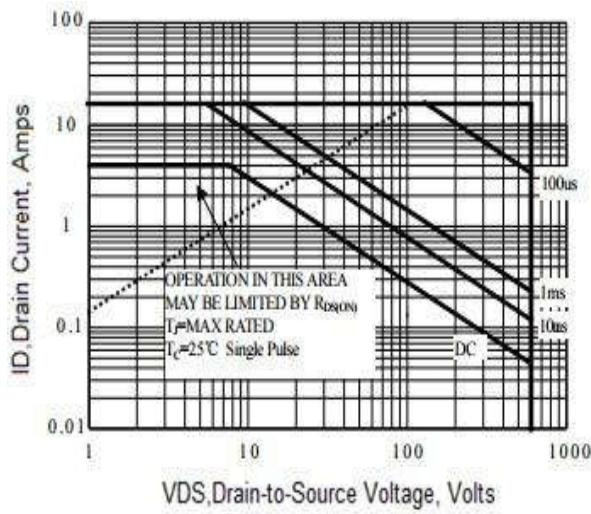
Characteristics	Symbols	Value		Units
Drain-Source Voltage	<b>V<sub>DS</sub></b>	600		<b>V</b>
Gate - Source Voltage	<b>V<sub>GS</sub></b>	±30		<b>V</b>
Continuous Drain Current	<b>I<sub>D</sub></b>	11		<b>A</b>
Pulsed Drain Current(note1)	<b>I<sub>DM</sub></b>	48		<b>A</b>
Power Dissipation	<b>P<sub>D</sub></b>	55	140	<b>W</b>
Single Pulse Avalanche Energy(note1)	<b>E<sub>AS</sub></b>	660		<b>mJ</b>
Operating Temperature Range	<b>T<sub>J</sub></b>	150		<b>°C</b>
Operating 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>	2.27	0.89	<b>°C/W</b>
Thermal Resistance, Junction ambient	<b>R<sub>θJA</sub></b>	100	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	$V_{GS}=0V, I_D=250\mu A$	$BV_{DSS}$	600	-	-	V
Drain-Source Leakage Current	$V_{DS}=600V, V_{GS}=0V$	$I_{DSS}$	-	-	1	$\mu A$
Gate Leakage Current	$V_{GS}=\pm 30V, V_{DS}=0V$	$I_{GSS}$	-	-	$\pm 100$	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	$V_{GS}=10V, I_D=6A$	$R_{DS(ON)}$	-	510	620	m $\Omega$
Forward Transconductance	$V_{DS}=10V, I_D=6A$	$g_{fs}$	-	12	-	S
Input Capacitance	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$	$C_{iss}$	-	1540	-	pF
Output Capacitance		$C_{oss}$	-	180	-	
Reverse Transfer Capacitance		$C_{rss}$	-	8	-	
Turn-on delay time(note2)	$I_D=12A$ $V_{DD}=300V$ $R_G=10\Omega$	$t_{d(on)}$	-	16	-	ns
Rise Time(note2)		$T_r$	-	26	-	
Turn-Off Delay Time(note2)		$t_{d(OFF)}$	-	65	-	
Fall Time(note2)		$t_f$	-	40	-	
Total Gate Charge(note2)	$I_D=12A$ $V_{DD}=480V$ $V_{GS}=10V$	$Q_g$	-	44	-	nC
Gate-Source Charge(note2)		$Q_{gs}$	-	10	-	
Gate-Drain Charge(note2)		$Q_{gd}$	-	16	-	
Maximun Body-Diode Continuous Current		$I_S$	-	-	12	A
Maximun Body-Diode Continuous Current(note2)		$I_{SM}$	-	-	48	A
Drain-Source Diode Forward Voltage	$I_{SD} = 12A$	$V_{SD}$	-	-	1.5	V
Reverse Recovery Time(note2)	$V_{GS} = 0V, I_{SD} = 12A$ $diF/dt = 100A / \mu s$	$t_{rr}$	-	324	-	nS
Reverse Recovery Charge(note2)		$Q_{rr}$	-	2.5	-	$\mu C$

 Note2:Pulse test: 300  $\mu s$  pulse width, 2 % duty cycle

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			