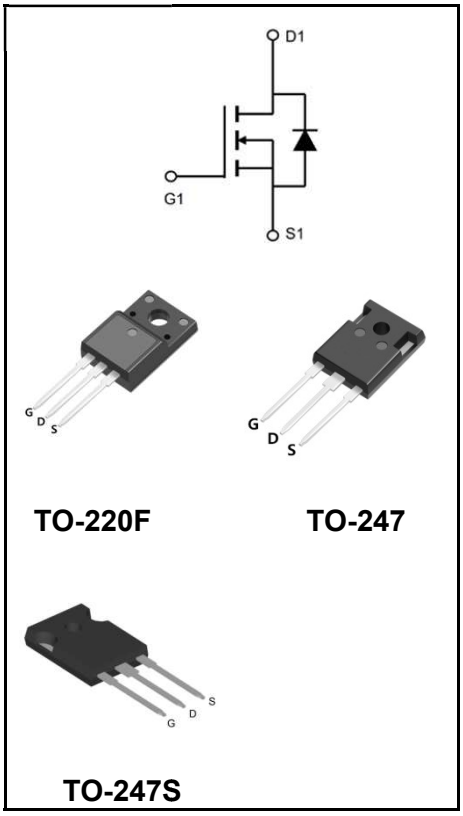
800V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	10A
V_{DSS}	800V
R_{DSON}-typ(@V_{GS}=10V)	<1.15Ω **(Type:0.92 Ω)**



TO-220F TO-247

TO-247S

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
YFW10N80AF	TO-220F(1.3 mm)	YFW 10N80AF XXXXX	50PCS/Tube
YFW10N80AP	TO-247	YFW 10N80AP XXXXX	30PCS/Tube
YFW10N80APS	TO-247S	YFW 10N80APS XXXXX	30PCS/Tube

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value		Units
		220F	247/247S	
Drain-Source Voltage	V_{DS}	800		V
Gate-Source Voltage	V_{GS}	±30		V
Continue Drain Current-Continuous (TC = 25°C)	I_D	10		A
-Continuous (TC = 100°C)		6		
Pulsed Drain Current (Note1)	I_{DM}	40		A
Power Dissipation	P_D	60	160	W
-Derate above 25°C		0.5	1.33	W/°C
Single Pulse Avalanche Energy (Note2)	E_{AS}	700		mJ
Avalanche Current (Note 1)	I_{AR}	10		A
Repetitive Avalanche Energy (Note 1)	E_{AS}	24		m_J
Operating Temperature Range	T_J	150		°C
Storage Temperature Range	T_{STG}	-55 to +150		°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.08	0.78	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	45	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

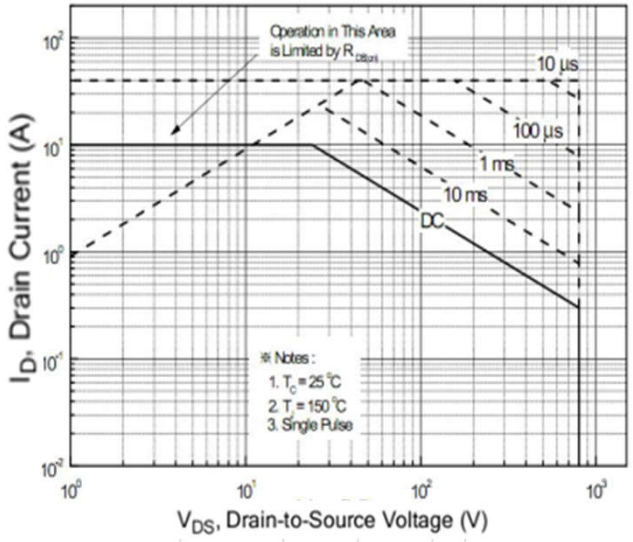
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS} = 0 V,I_D = 250 μA	BV_{DSS}	800	-	-	V
Drain-Source Leakage Current	V_{DS} = 800 V, V_{GS} = 0 V	I_{DSS}	-	-	1	UA
	V_{DS} = 640 V, T_c = 125°C		-	-	10	
Gate Leakage Current	V_{GS} = ± 30 V, VDS = 0 V	I_{GSS}	-	-	±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 = 5A	$R_{DS(on)}$	-	0.92	1.15	Ω
Forward Transconductance	V_{DS} = 40 V, I_D = 10 A	gfs	-	20	-	S
Input Capacitance	V_{GS} = 0 V, V_{DS} = 25 V, f = 1MHz	C_{iss}	-	1979	-	pF
Output Capacitance		C_{oss}	-	200	-	
Reverse Transfer Capacitance		C_{rss}	-	25	-	
Turn-on Delay Time	I_D = 10, V_{DD} = 400V, R_G=10Ω(Note3,4)	td(ON)	-	19	-	nS
Rise Time		tr	-	10	-	
Turn-Off Delay Time		td(OFF)	-	68	-	
Fall Time		tf	-	23	-	
Total Gate Charge	I_D =10 A, V_{DD} = 640 V, V_{GS} = 10 V(Note3,4)	Q_G	-	58	-	nC
Gate to Source Charge		Q_{GS}	-	13	-	
Gate to Drain Charge		Q_{GD}	-	25	-	

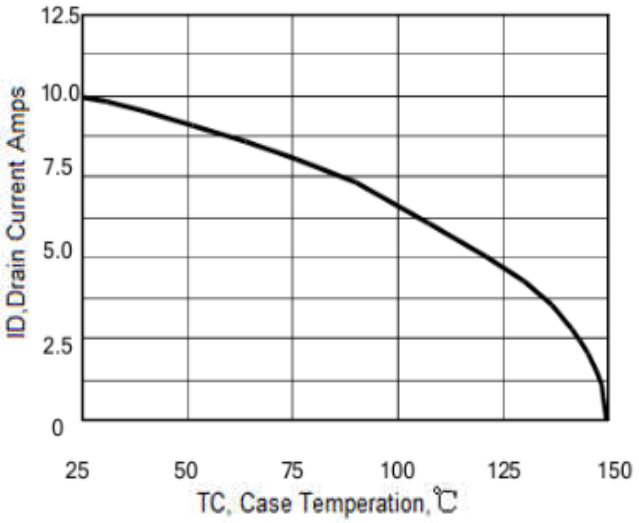
Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

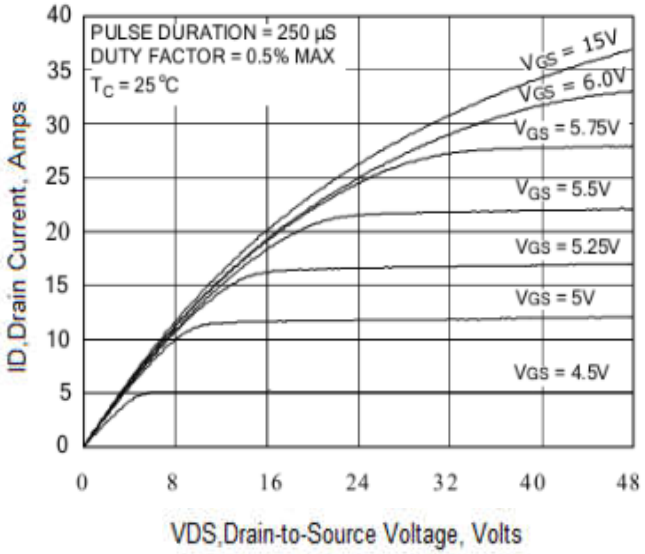
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Maximun Body-Diode Continuous Current		I_S	-	-	10	A
Maximun Body-Diode Pulsed Current		I_{SM}	-	-	40	A
Drain-Source Diode Forward Voltage	I_{SD} =10A	V_{SD}	-	-	1.5	V
Reverse Recovery Time	I_{SD} = 10A, V_{GS} = 0 V, dI_F / dt = 100 A/μs (Note3)	trr	-	200	-	nS
Reverse Recovery Charge		Qrr	-	2.2	-	uC

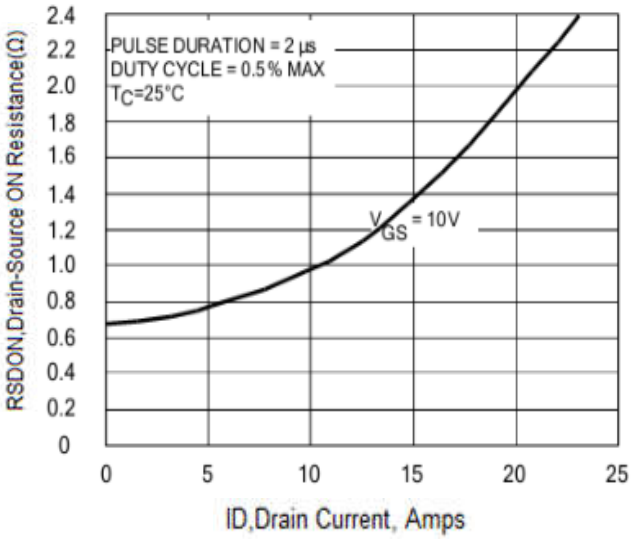
Note:
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. IAS = 10 A, VDD = 50 V, L =14mH, RG = 25Ω, starting TJ = 25°C.
3. ulse test: Pulse Width ≤300 μ s, Duty Cycle≤2%.
4. Essentially Independent of Operating Temperature.

Ratings and characteristic Curves

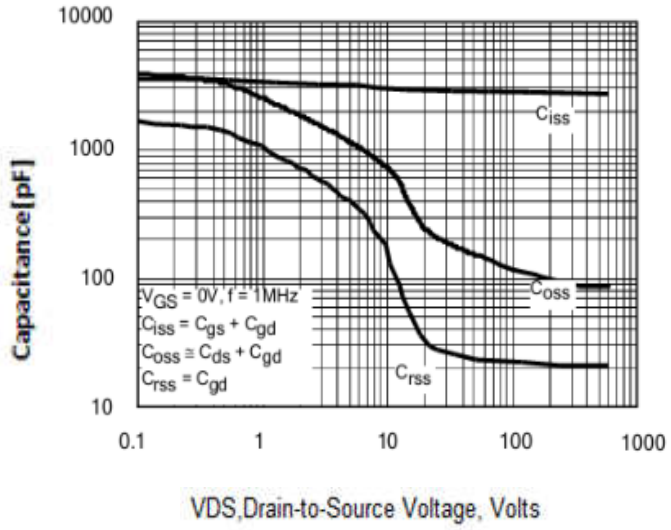


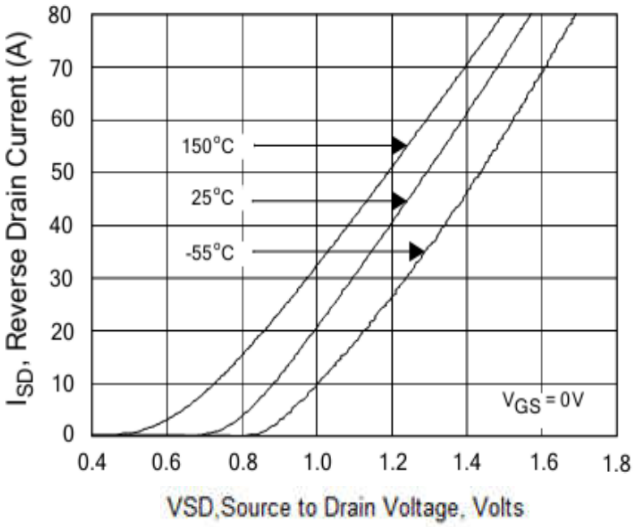


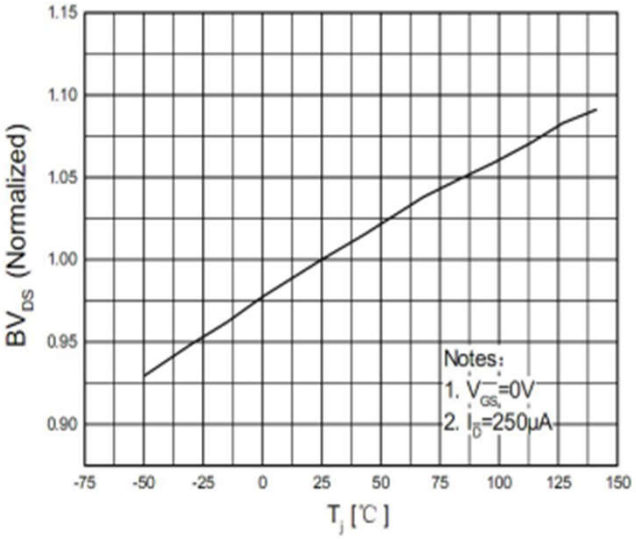


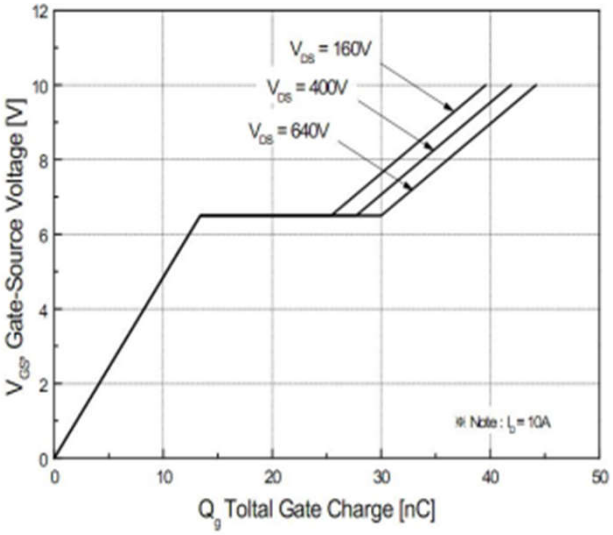


Ratings and characteristic Curves



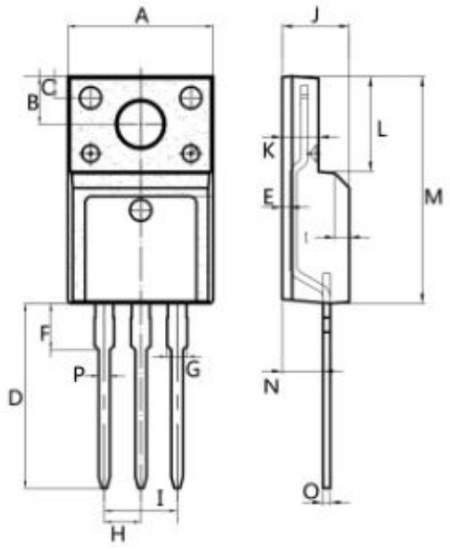






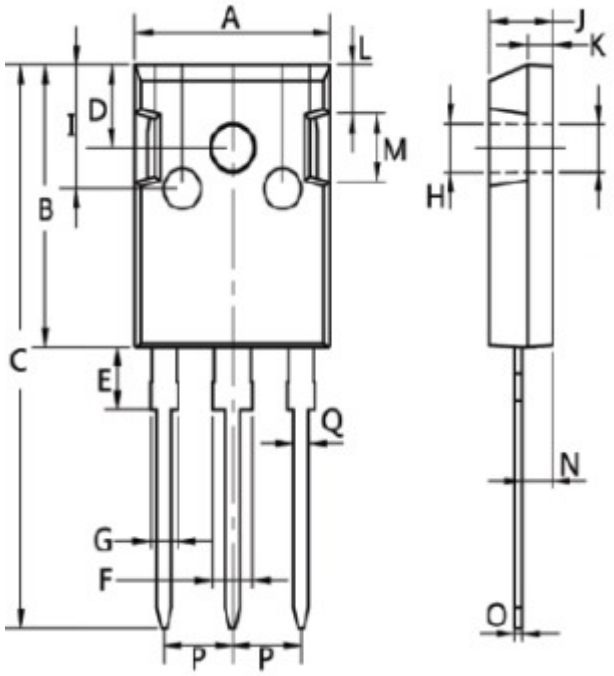
Package Outline Dimensions Millimeters

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		

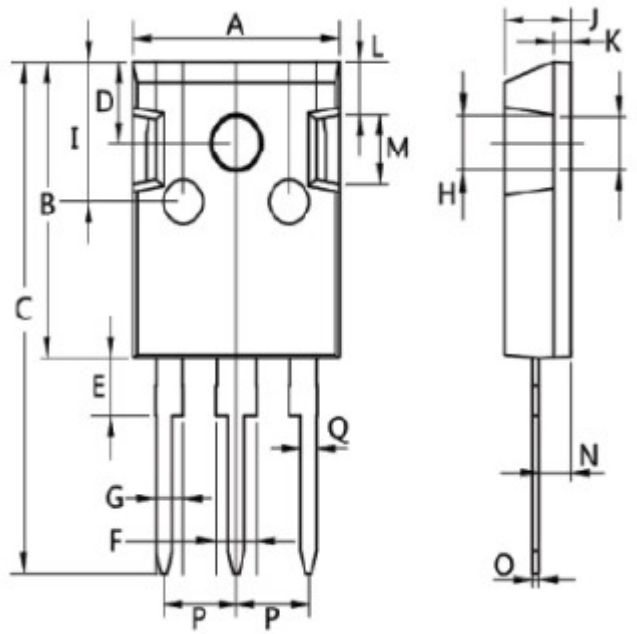
TO-247



Dim.	Min.	Max.
A	15	16
B	20	21
C	41	42
D	5	6
E	4	5
F	2.5	3.5
G	1.75	2.5
H	3	3.5
I	8	10
J	4.9	5.1
K	1.9	2.1
L	3.5	4
M	4.75	5.25
N	2	3
O	0.55	0.75
P	Typ 5.08	
Q	1.2	1.3
All Dimensions in millimeter		

Package Outline Dimensions Millimeters

TO-247S



Dim.	Min.	Max.
A	15	16
B	19.5	20.5
C	33.5	35.5
D	5	6
E	3.5	4.5
F	2.5	3.5
G	1.75	2.5
H	3	4
I	9	11
J	4.9	5.1
K	1	1.3
L	3.75	4.25
M	4.75	5.25
N	1.8	2.2
O	0.45	0.6
P	Typ 5.08	
Q	1.2	1.3

All Dimensions in millimeter

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