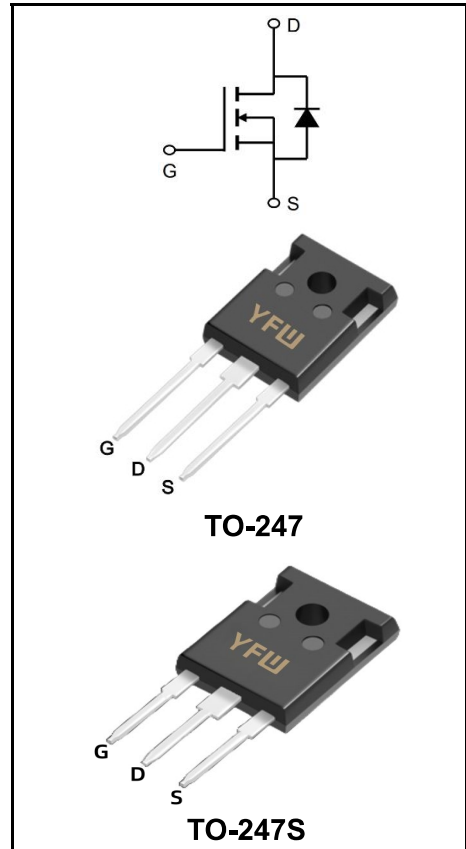


600V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	35A
V_{DSS}	600V
R_{DS(on)-typ(@V_{GS}=10V)}	<0.15Ω (Type:0.13Ω)



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°C maximum,10s per JESD22-106

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
		247/247S	
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±30	V
Continue Drain Current	I_D	35	A
-Continuous (TC = 100°C)		24	
Pulsed Drain Current (Note1)	I_{DM}	110	A
Power Dissipation	P_D	240	W
-Derate above 25°C		1.2	
Single Pulse Avalanche Energy (Note2)	E_{AS}	1800	mJ
Avalanche Current (Note 1)	I_{AR}	35	A
Repetitive Avalanche Energy (Note 1)	E_{AS}	43	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	R_{θJC}	0.4	°C/W
Thermal Resistance, Junction to Ambient	R_{θJA}	42	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	BV_{DSS}	600	-	-	V
Breakdown Voltage Temperature Coefficient	$I_D = 250\ \mu\text{A}$ (Referenced to 25°C)	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	-	0.65	-	V/°C
Drain-Source Leakage Current	$V_{DS} = 600\text{ V}, V_{GS} = 0\text{ V}$	I_{DSS}	-	-	1	uA
	$V_{DS} = 480\text{ V}, T_c = 125^\circ\text{C}$		-	-	10	
Gate Leakage Current	$V_{GS} = \pm 30\text{ V}, V_{DS} = 0\text{ V}$	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	V_{GS(th)}	3	-	5	V
Drain-Source On-State Resistance	$V_{GS} = 10\text{ V}, I_D = 17.5\text{ A}$	R_{DS(on)}	-	0.13	0.15	Ω
Forward Transconductance	$V_{DS} = 15\text{ V}, I_D = 17.5\text{ A}$	g_{fs}	-	27.6	-	S
Input Capacitance	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V},$ $f = 1\text{ MHz}$	C_{iss}	-	4921	-	pF
Output Capacitance		C_{oss}	-	2312	-	
Reverse Transfer Capacitance		C_{rss}	-	135	-	
Turn-on Delay Time	$I_D = 35, V_{DD} = 300\text{ V},$ $R_G = 10\ \Omega$ (Note3,4)	td(ON)	-	34	-	nS
Rise Time		tr	-	121	-	
Turn-Off Delay Time		td(OFF)	-	106	-	
Fall Time		tf	-	72	-	
Total Gate Charge	$I_D = 35\text{ A}, V_{DD} = 480\text{ V},$ $V_{GS} = 10\text{ V}$ (Note3,4)	Q_G	-	138	-	nC
Gate to Source Charge		Q_{GS}	-	32	-	
Gate to Drain Charge		Q_{GD}	-	70	-	

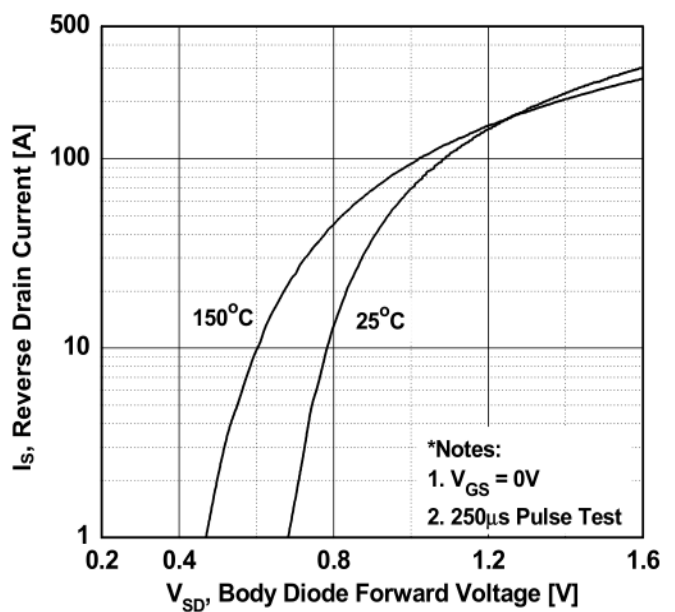
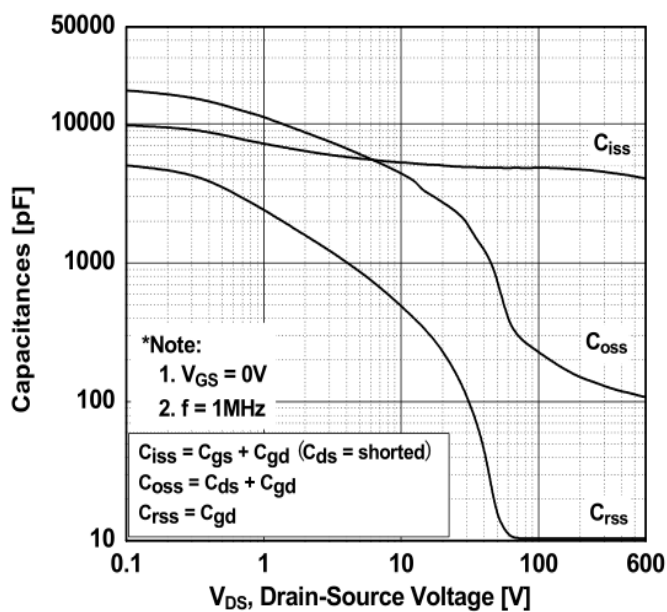
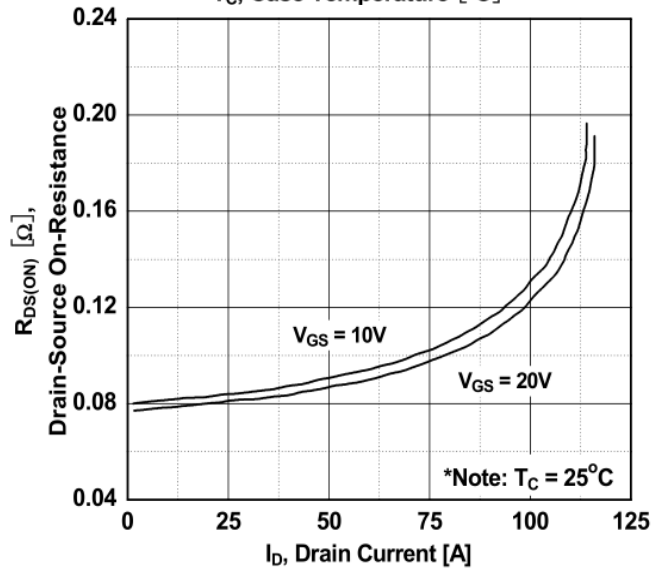
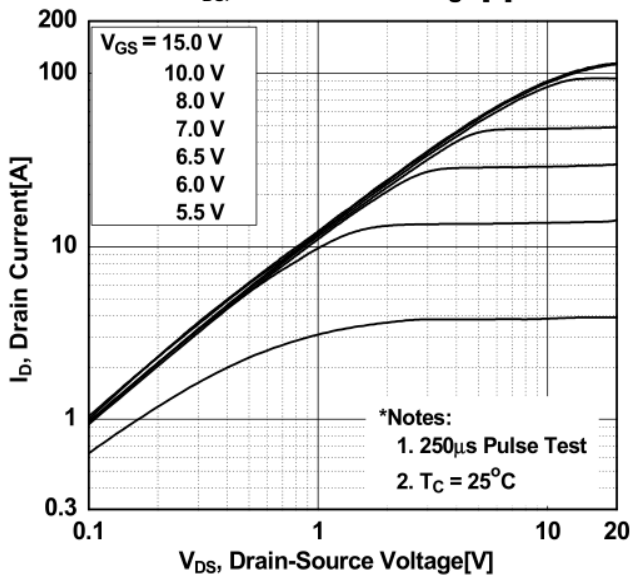
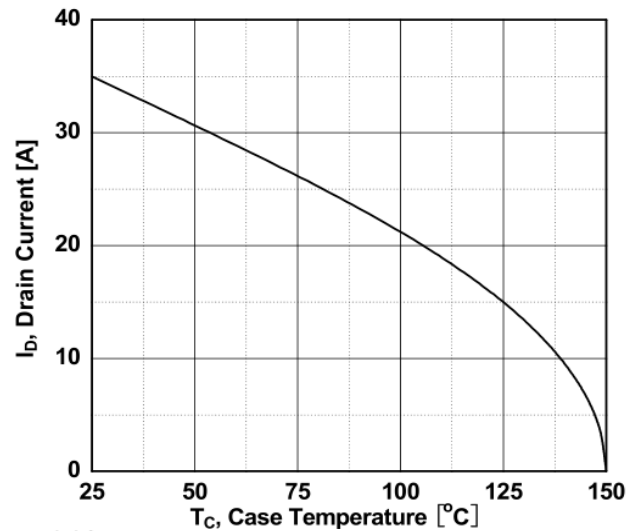
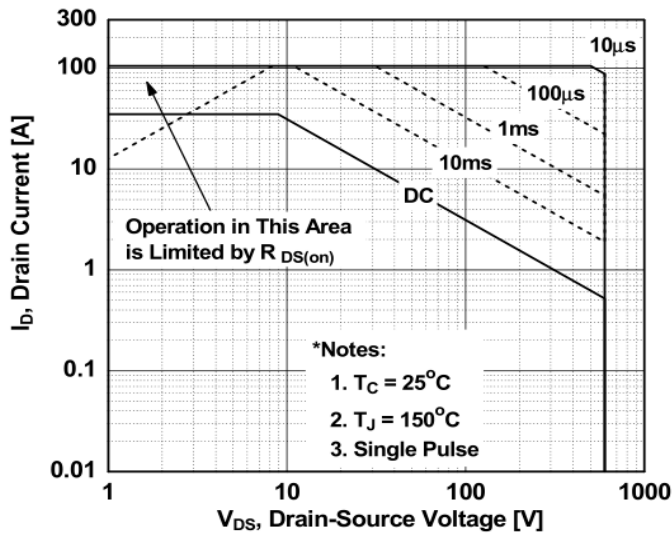
Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Maximun Body-Diode Continuous Current		I_S	-	-	35	A
Maximun Body-Diode Pulsed Current		I_{SM}	-	-	110	A
Drain-Source Diode Forward Voltage	$I_{SD} = 35\text{ A}$	V_{SD}	-	-	1.4	V
Reverse Recovery Time	$I_{SD} = 35\text{ A}, V_{GS} = 0\text{ V},$ $di_F / dt = 100\text{ A}/\mu\text{s}$	trr	-	613	-	nS
Reverse Recovery Charge		Qrr	-	15.8	-	uC

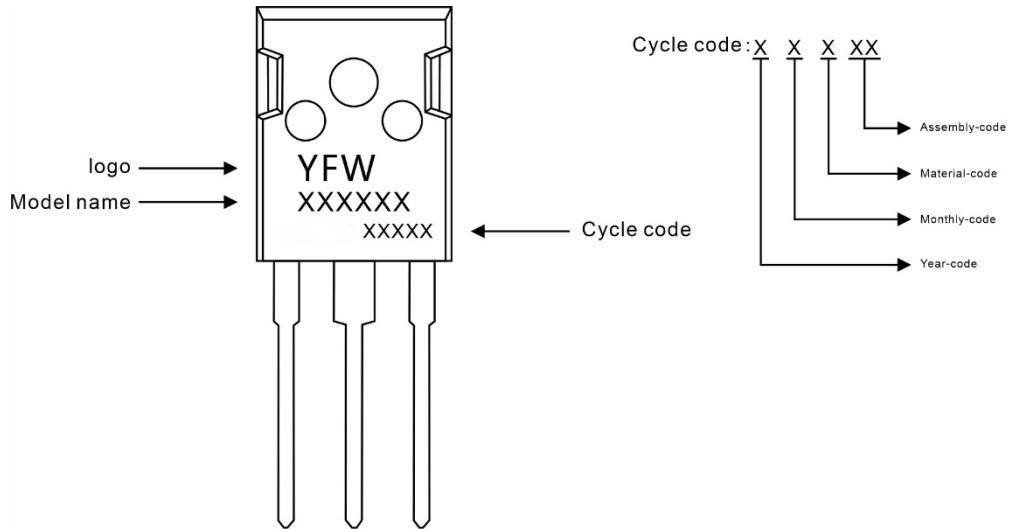
Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. IAS = 35 A, VDD = 50 V, L = 3mH, RG = 25Ω, starting TJ = 25°C.
3. ulse test: Pulse Width ≤ 300 μ s, Duty Cycles ≤ 2%.
4. Essentially Independent of Operating Temperature.

Ratings and Characteristic Curves



Marking Diagram



Ordering information

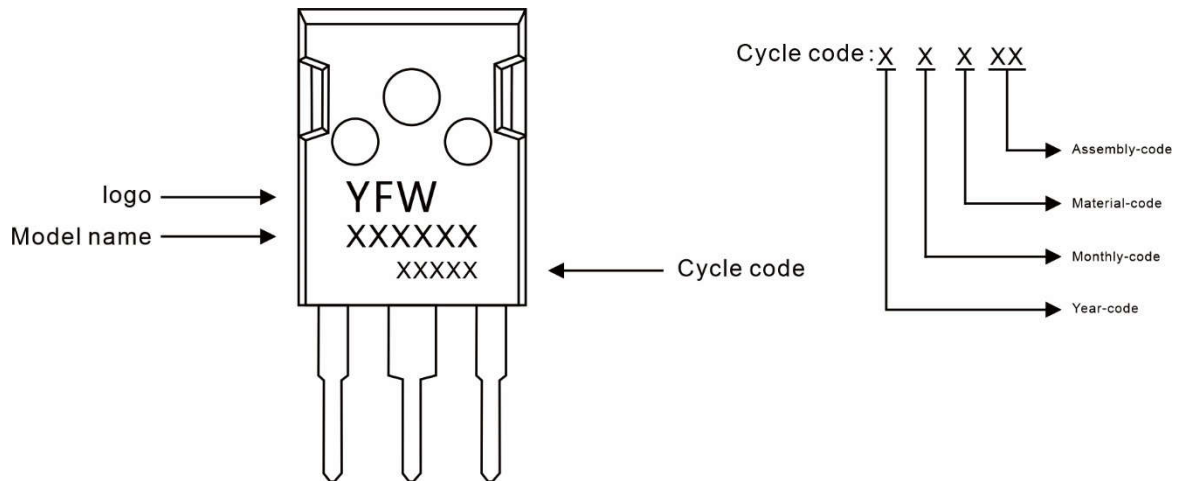
Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW35N60AP	TO-247	0.209oz(5.93g)	30pcs/tube	600PCS/Box 2400PCS/Carton

Package Dimensions

TO-247

Symbol	Dimensions in mm		Dimensions in Inch	
	Min.	Max.	Min.	Max.
A	4.90	5.10	0.193	0.201
A1	1.90	2.10	0.075	0.083
A2	2.29	2.54	0.090	0.100
b	1.00	1.40	0.039	0.055
b1	2.00	2.20	0.079	0.087
b2	3.00	3.20	0.118	0.126
c	0.50	0.70	0.020	0.028
D	15.75	16.05	0.620	0.632
E	20.20	20.80	0.795	0.819
e	5.45 (BSC)		0.215 (BSC)	
e1	10.90 (BSC)		0.429 (BSC)	
F	6.05	6.25	0.238	0.246
F1	5.80	6.00	0.228	0.236
L	20.10	20.40	0.791	0.803
L1	4.05	4.35	0.159	0.171
Φ	3.50	3.70	0.138	0.146

Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW35N60APS	TO-247S	0.158oz(4.48g)	30pcs/tube	600PCS/Box 2400PCS/Carton

Package Dimensions

TO-247S

Symbol	Dimensions in mm		Dimensions in Inch	
	Min.	Max.	Min.	Max.
A	15.0	16.0	0.59	0.63
B	19.5	20.5	0.77	0.81
C	33.5	35.5	1.32	1.40
D	5.0	6.0	0.20	0.24
E	3.5	4.5	0.14	0.18
F	2.5	3.5	0.10	0.14
G	1.75	2.5	0.07	0.14
H	3.0	4.0	0.12	0.16
I	9.0	11.0	0.35	0.43
J	4.9	5.1	0.19	0.20
K	1.0	1.3	0.04	0.05
L	3.75	4.25	0.15	0.17
M	4.75	5.25	0.19	0.21
N	1.8	2.2	0.07	0.09
O	0.45	0.6	0.018	0.024
P	5.08		0.2	
Q	1.2	1.3	0.05	0.051

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