

30V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

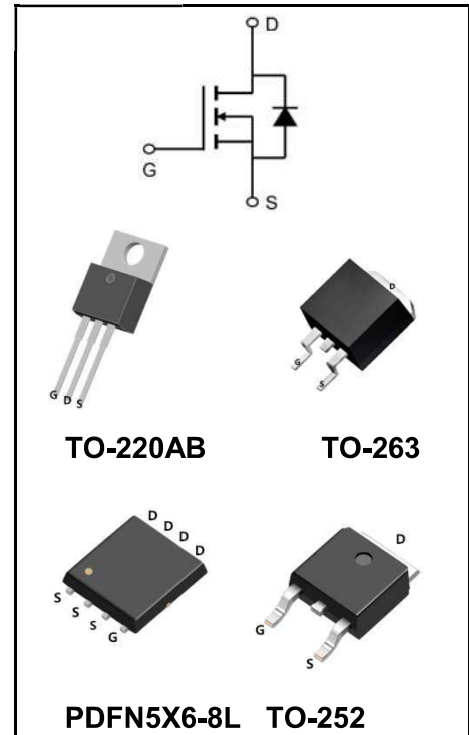
I_D		150A
V_{DSS}		30V
R_{DS(on)}⁻ typ(@V_{GS} =10V)	TO-252/PDFN	< 2.3mΩ (Type:2.8 mΩ)
	TO-263	< 2.4mΩ (Type:2.8 mΩ)
	TO-220AB	< 2.6mΩ (Type:2.8 mΩ)

Application

- ◆ Battery protection
- ◆ Load switch
- ◆ Uninterruptible power supply

Mechanical Data

- ◆ Case: Molded plastic
- ◆ Mounting Position: Any
- ◆ Molded Plastic: UL Flammability Classification Rating 94V-0
- ◆ Solder bath temperature 275°C maximum, 10s per JESD22-106



Product Specification Classification

Part Number	Package	Marking	Pack
YFW150N03AD	TO-252	YFW 150N03AD XXXXX	2500PCS/Tape
YFW150N03NF	PDFN5*6-8L	YFW 150N03NF XXXXX	5000PCS/Tape
YFW150N03AS	TO-263	YFW 150N03AS XXXXX	50PCS/Tube
YFW150N03AT	TO-220AB	YFW 150N03AT XXXXX	50PCS/Tube

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
		252/263/220AB/PDFN	
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	150	A
Pulsed Drain Current (Note1)	I_{DM}	600	A
Power Dissipation	P_D	110	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	360	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Thermal Resistance, Junction to Case	R_{θJC}	1.5	°C/W
Thermal Resistance, Junction to Ambient	R_{θJA}	62	°C/W

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

Maximum Ratings at Tc=25°C unless otherwise specified

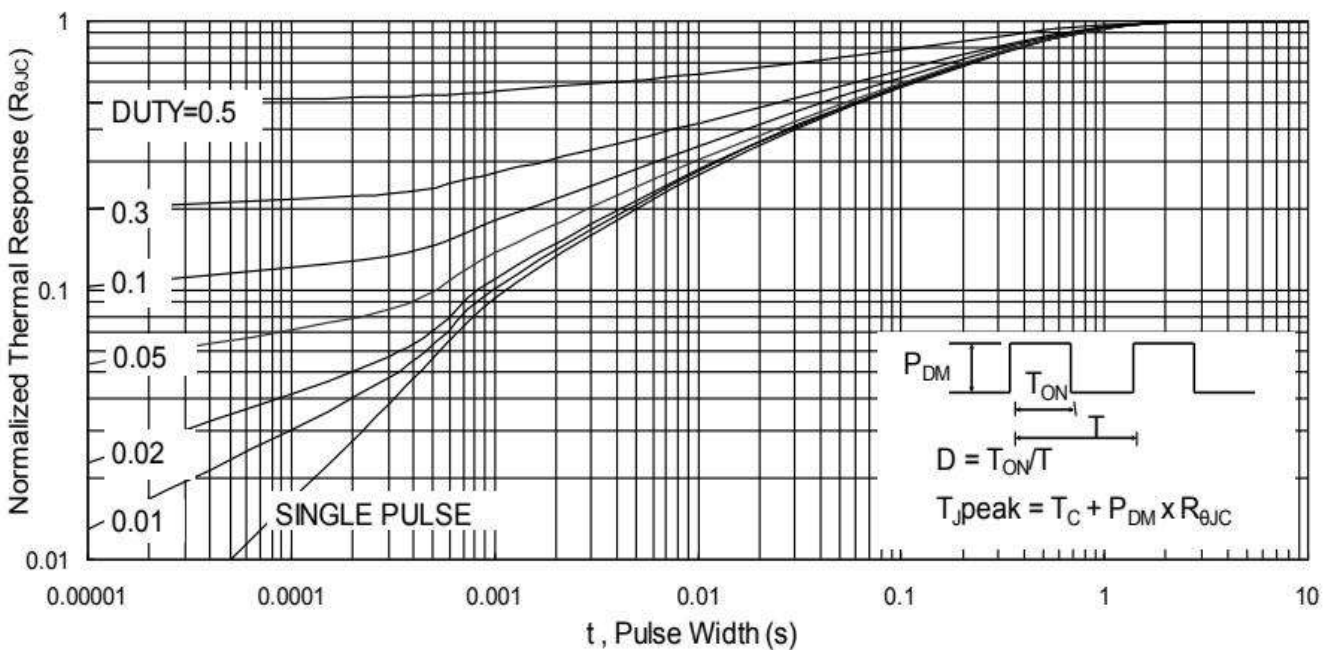
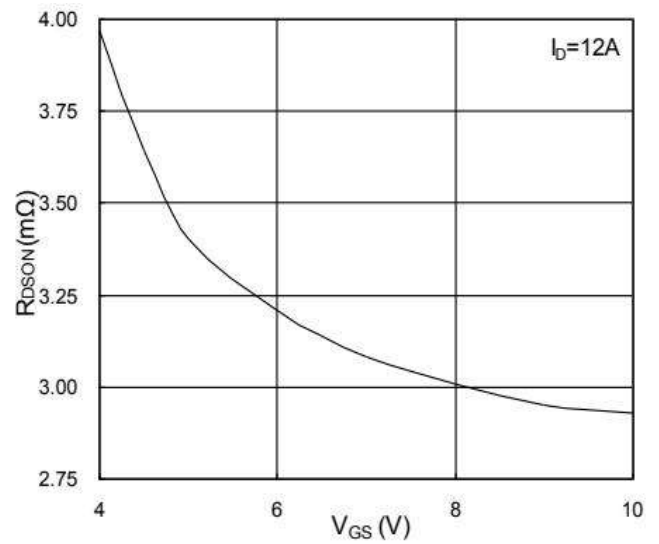
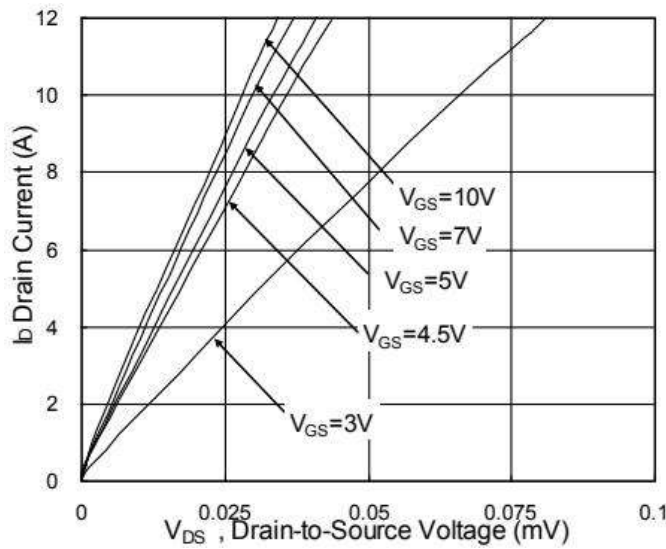
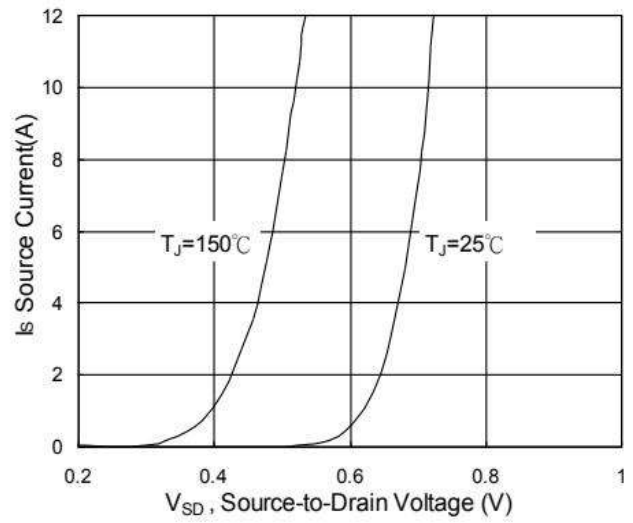
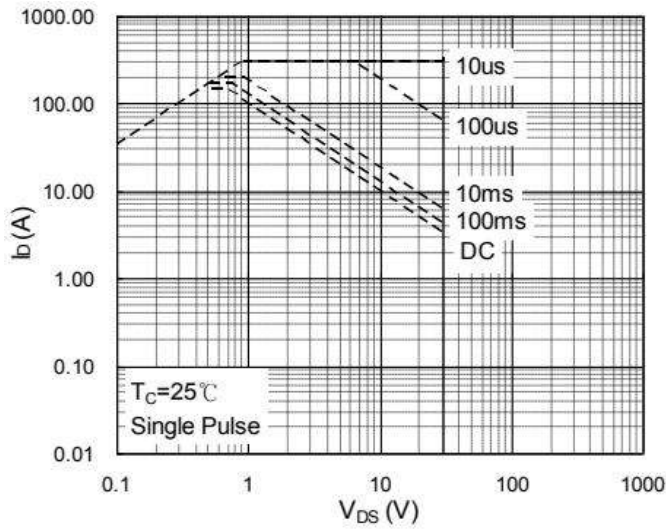
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS} = 0 V, I_D = 250 \mu A$	BV_{DSS}	30	-	-	V
Drain-Source Leakage Current	$V_{DS} = 30 V, V_{GS} = 0 V$	I_{DSS}	-	-	1	uA
Gate Leakage Current	$V_{GS} = \pm 20 V, V_{DS} = 0 V$	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu A$	V_{GS(th)}	2	-	4	V
Drain-Source On-State Resistance	$V_{GS} = 10 V, I_D = 30 A$	TO-252 PDFN	-	2.3	2.8	mΩ
		TO-263	-	2.4	2.8	mΩ
		TO-220AB	-	2.6	2.8	mΩ
Forward Transconductance	$V_{DS} = 5 V, I_D = 30 A$	g_{fs}	30	-	-	S
Input Capacitance	$V_{GS} = 0 V, V_{DS} = 15 V, f = 1 MHz$	C_{iss}	-	5100	-	pF
Output Capacitance		C_{oss}	-	1086	-	
Reverse Transfer Capacitance		C_{rss}	-	612	-	
Turn-on Delay Time(Note2)	$V_{DD} = 15 V, V_{GS} = 10 V, R_G = 3 \Omega, I_D = 30 A$	td(ON)	-	22	-	nS
Rise Time(Note2)		tr	-	15	-	
Turn-Off Delay Time(Note2)		td(OFF)	-	73	-	
Fall Time(Note2)		tf	-	35	-	
Total Gate Charge(Note2)	$V_{DS} = 15 V, V_{GS} = 10 V, I_D = 30 A$	Q_G	-	48	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	11	-	
Gate to Drain Charge(Note2)		Q_{GD}	-	21	-	

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

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Maximum Body-Diode Continuous Current		I_S	-	-	150	A
Maximum Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	600	A
Drain-Source Diode Forward Voltage	V _{GS} =0V , I _S =1A , T _J =25°C	V_{SD}	-	-	1.2	V

Note2:Pulse test: 300 μs 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-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	Typ 2.54	
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		

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				

PDFN5*6-8L

	Dim.	Min.	Max.
	A	4.8	5.2
	B	0.25	0.35
	C	1	1.2
	C1	Typ 0.254	
	C2	Typ 0.254	
	E	Typ 1.27	
	L	6	6.3
	L1	5.7	6
	L2	MAX 0.2	
R	Typ 13°		
All Dimensions in millimeter			