

100V N-Channel Enhancement Mode Power MOSFET

MAIN CHARACTERISTICS

I_D	15A
V_{DSS}	100V
R_{DS(on)-typ(@V_{GS}=10V)}	< 110mΩ (Type: 88mΩ)

FEATURES

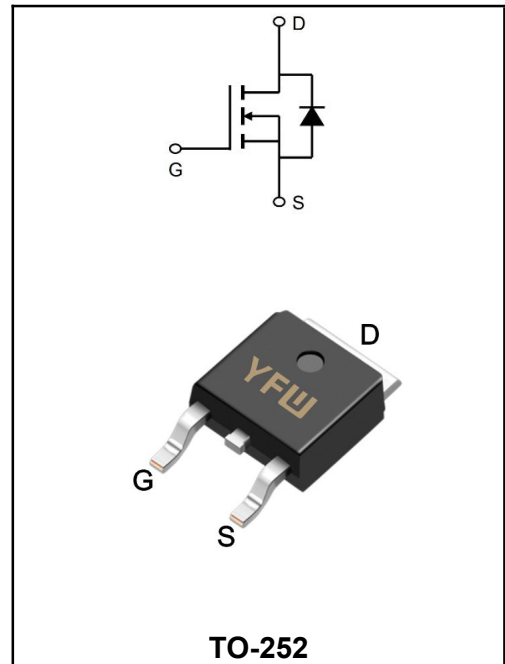
- Fast Switching
- Low ON Resistance
- Low Gate Charge
- 100% Single Pulse avalanche energy Test

APPLICATIONS

- Power switch circuit of adaptor and charger.

MECHANICAL DATA

- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum, 10s per JESD 22-B106



Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continue Drain Current	I_D	15	A
Pulsed Drain Current (Note1)	I_{DM}	60	A
Power Dissipation	P_D	35	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	8	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.5	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	100	°C/W

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

Electrical Characteristics at Tc=25°C unless otherwise specified

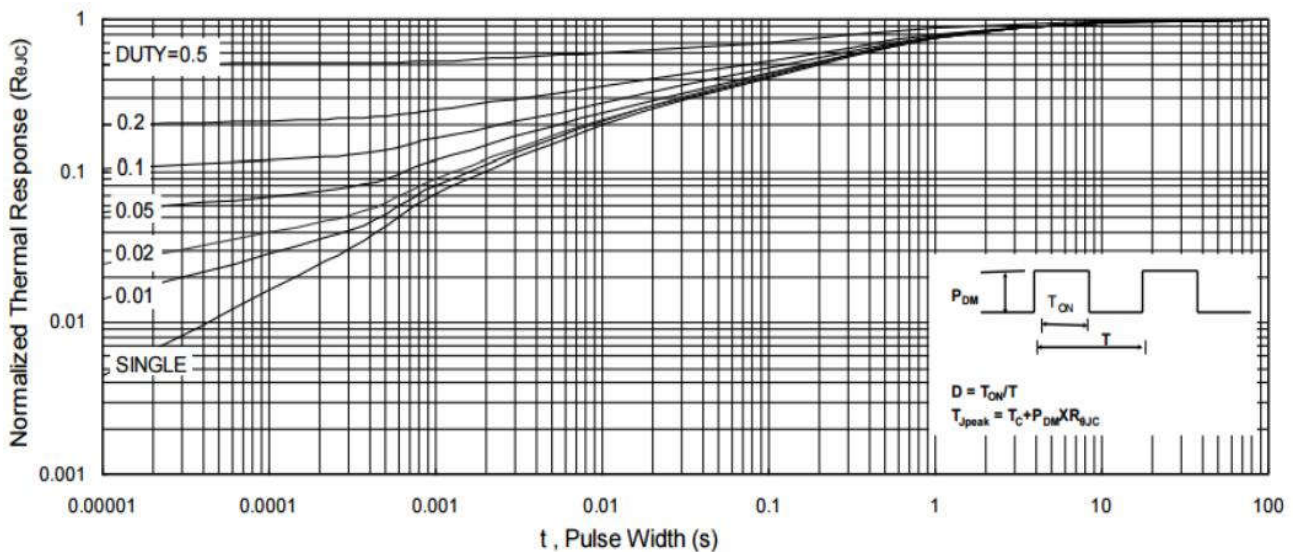
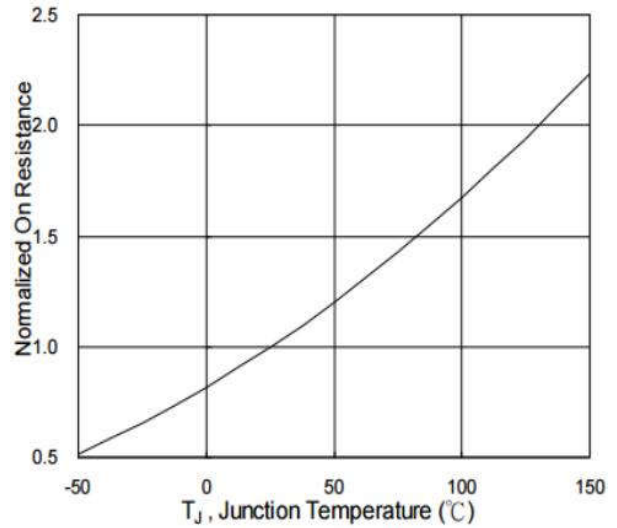
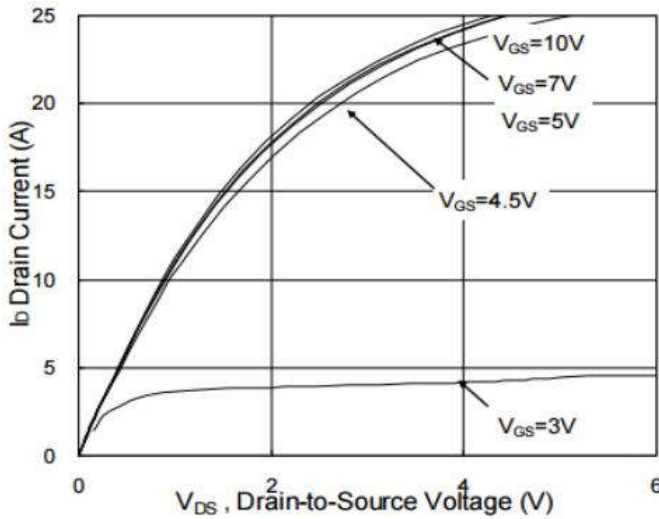
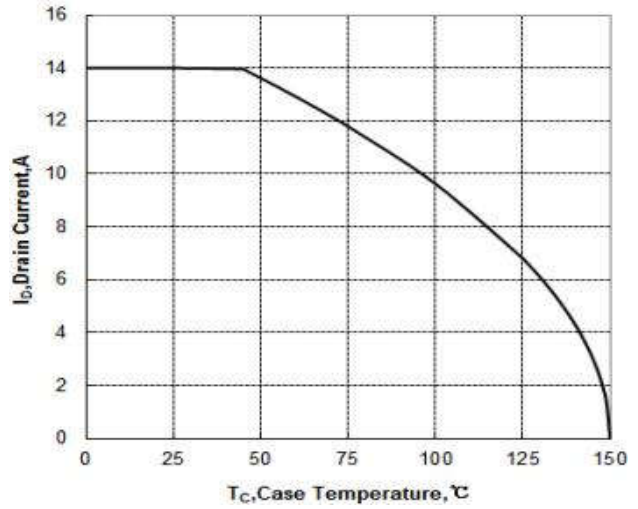
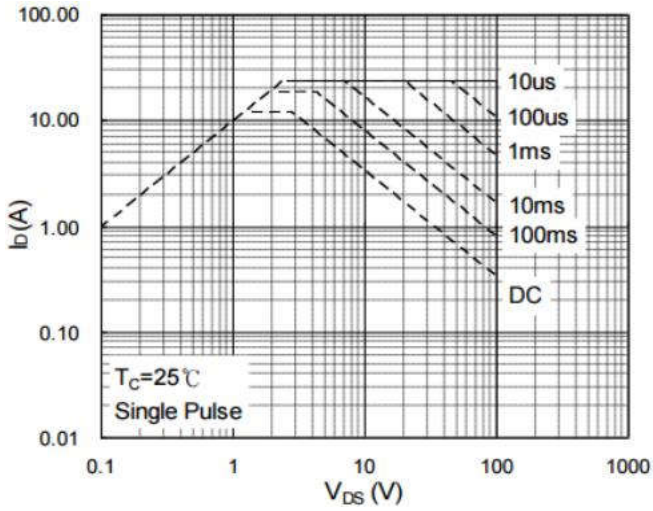
Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0 V, I_D = 250 \mu A$	BV_{DSS}	100	-	-	V
Drain-Source Leakage Current	$V_{DS} = 100 V, V_{GS} = 0 V$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 30 V, V_{DS} = 0 V$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu A$	$V_{GS(th)}$	1	-	2.5	V
Drain-Source On-State Resistance	$V_{GS} = 10 V, I_D = 7 A$	$R_{DS(on)}$	-	88	110	m Ω
	$V_{GS} = 4.5 V, I_D = 3 A$		-	96	140	m Ω
Forward Transconductance	$V_{DS} = 15 V, I_D = 7 A$	gfs	-	3.5	-	S
Input Capacitance	$V_{GS} = 0 V, V_{DS} = 15 V,$ $f = 1 MHz$	C_{iss}	-	891	-	pF
Output Capacitance		C_{oss}	-	58	-	pF
Reverse Transfer Capacitance		C_{rss}	-	23	-	pF
Turn-on Delay Time(Note2)		$t_{d(ON)}$	-	14	-	ns
Rise Time(Note2)	$I_D = 10 A, V_{DD} = 50 V,$ $R_G = 1 \Omega$	t_r	-	16	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	32	-	ns
Fall Time(Note2)		t_f	-	11	-	ns
Total Gate Charge(Note2)	$I_D = 10 A, V_{DD} = 80 V,$ $V_{GS} = 4.5 V$	Q_G	-	13	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	4.6	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	7.6	-	nC

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

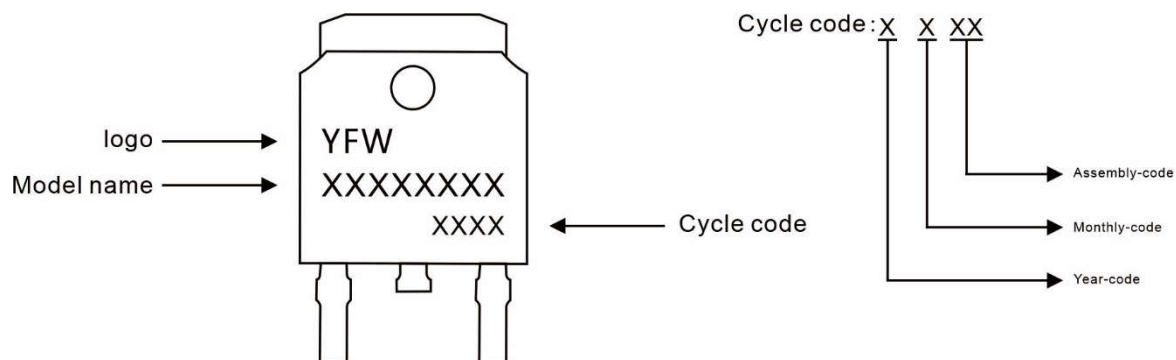
Characteristics	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	15	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	60	A
Drain-Source Diode Forward Voltage	$I_{SD} = 14 A$	V_{SD}	-	0.9	1.2	V
Reverse Recovery Time(Note2)	$I_{SD} = 14 A, V_{GS} = 0 V,$ $dI_F / dt = 100 A/\mu s$	trr	-	250	-	ns
Reverse Recovery Charge(Note2)		Qrr	-	1.2	-	μC

Note2:Pulse test: 300 μ s pulse width, 2 % duty cycle

Ratings and Characteristic Curves



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW15N10AD	TO-252	0.011oz(0.32g)	2500pcs/reel	5000pcs/box 25000pcs/Carton

Package Dimensions

TO-252

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	10.00	11.00	0.393	0.433
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059

Disclaimer

The information presented in this document is for reference only. Guangdong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <https://www.yfwdiode.com>, or consult YFW sales office for further assistance.