

40V N-Channel Enhancement Mode Power MOSFET

MAIN CHARACTERISTICS

I_D	30A
V_{DS}	40V
$R_{DS(on)-typ}(@V_{GS}=10V)$	$<23m\Omega$ (Typ:14mΩ)

FEATURES

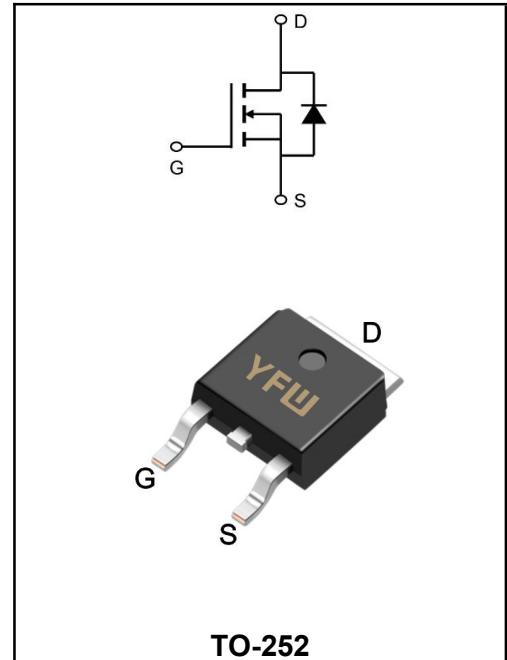
- Advanced Trench Technology
- Excellent RDS(ON) and Low Gate Charge

Application

- Load Switch
- PWM Application
- Power Management

MECHANICAL DATA

- Case: TO-252/AD
- 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	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	40	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	30	A
Pulsed Drain Current(Note1)	I_{DM}	80	A
Total Power Dissipation	P_D	35	W
Single Pulse Avalanche Energy(Note1)	E_{AS}	25.8	mJ
Operating Junction Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.9	°C/W
Thermal Resistance, Junction ambient	$R_{\theta JA}$	55	°C/W

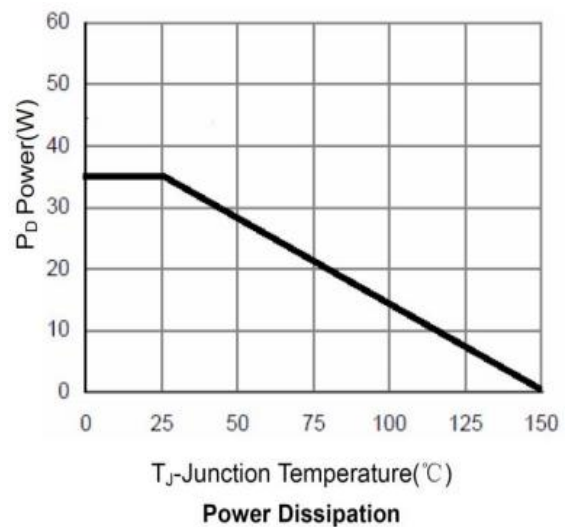
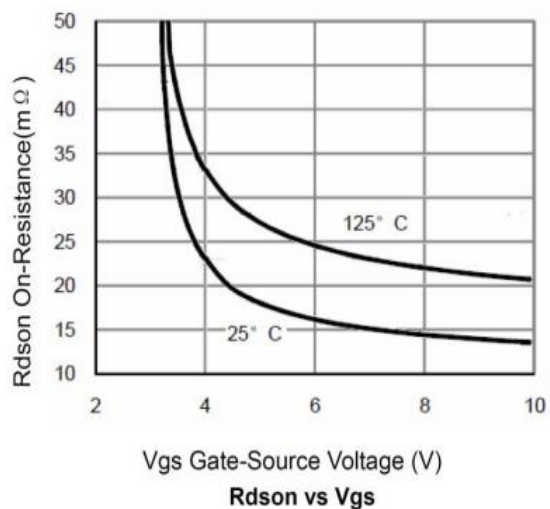
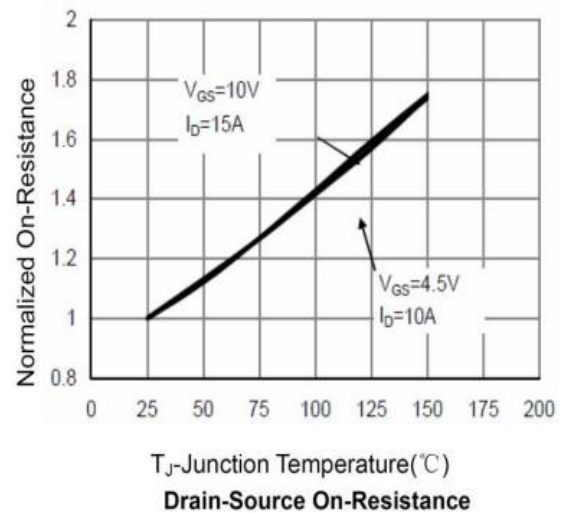
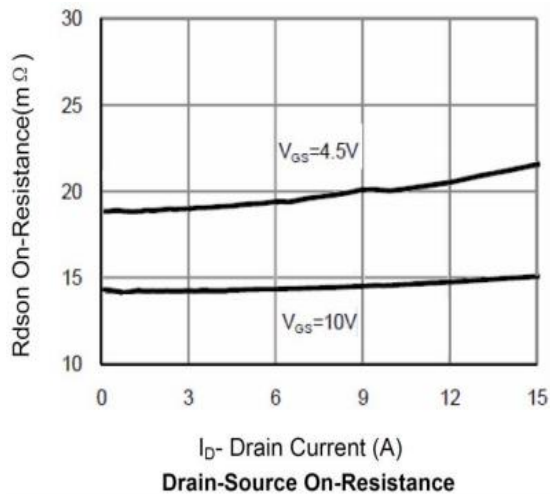
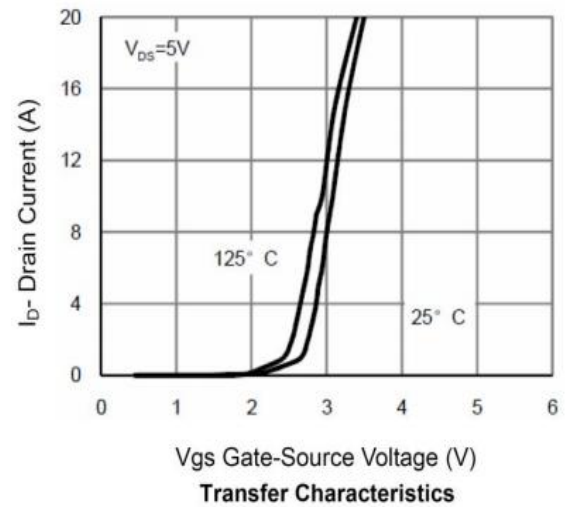
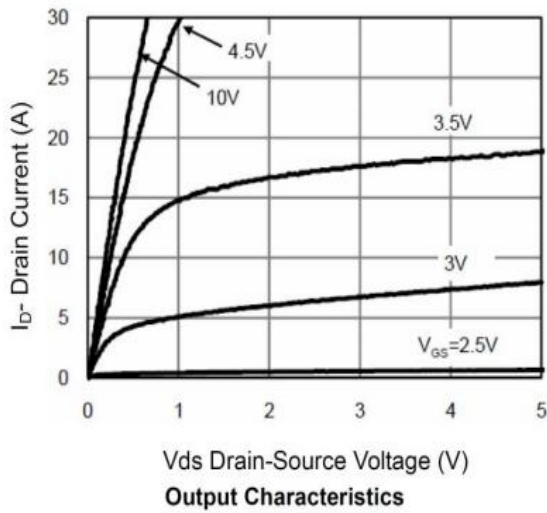
Note1: Pulse test: 300 μs pulse width, 2 % duty cycle

Maximum Ratings at Tc=25°C unless otherwise specified

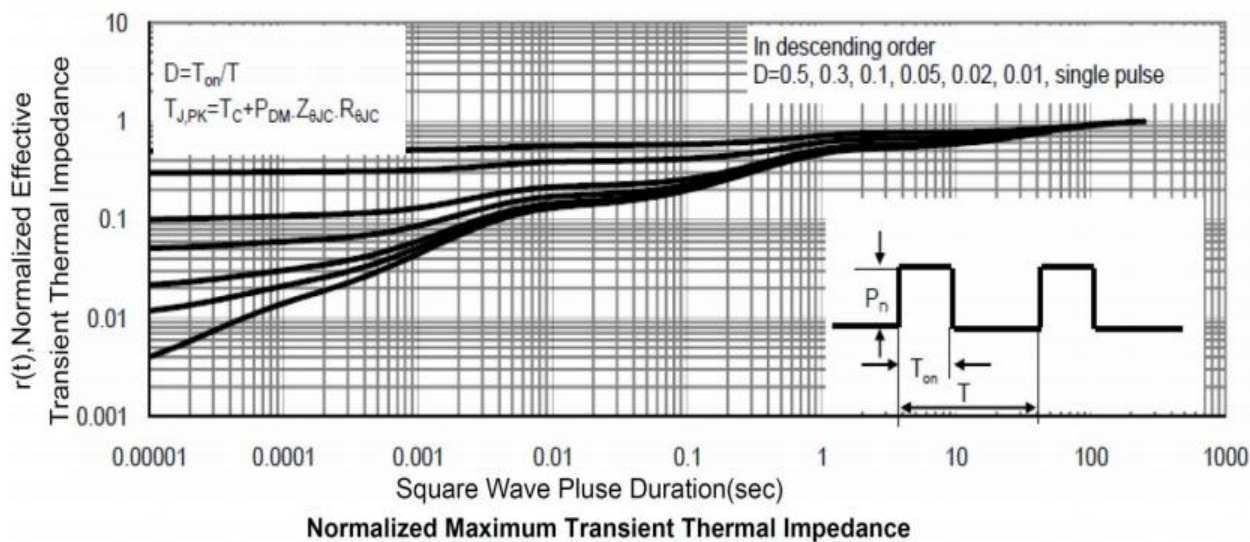
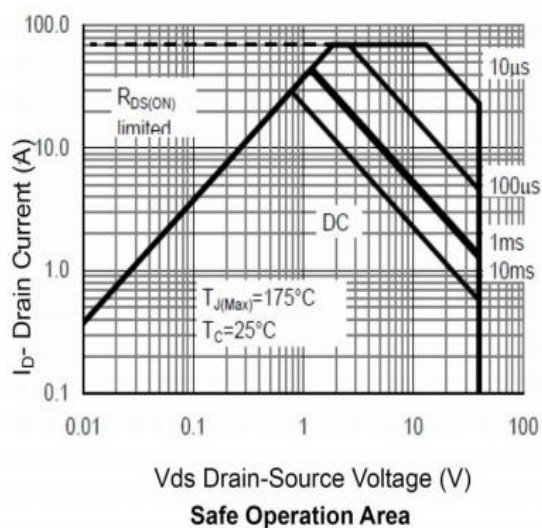
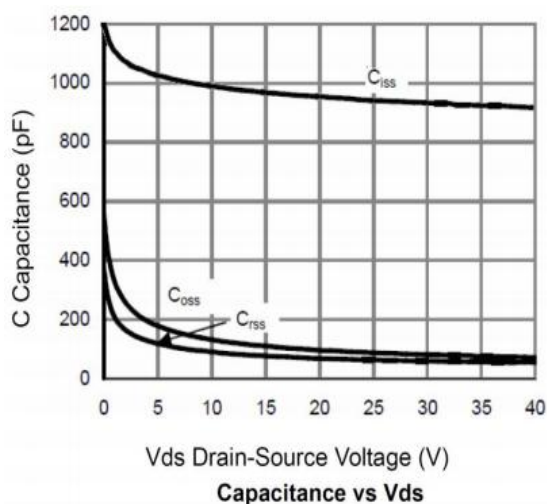
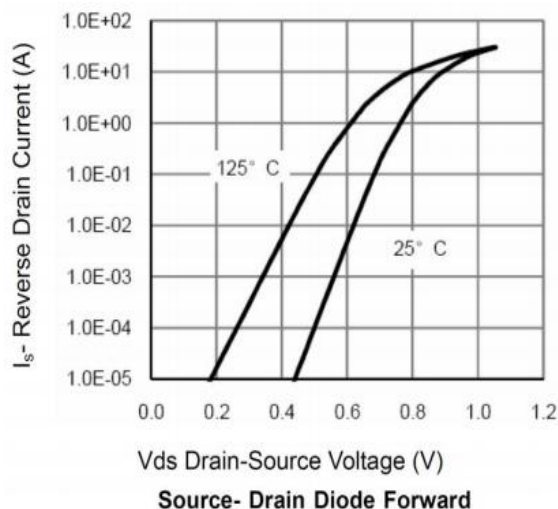
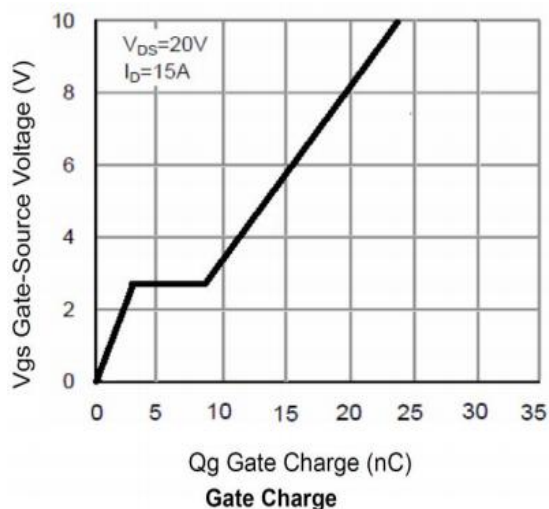
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	40	-	-	V
Drain-Source Leakage Current	$V_{DS}=40V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Gate Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1	-	2.5	V
Drain-Source on-Resistance	$V_{GS}=10V, I_D=15A$	$R_{DS(on)}$	-	14	23	m Ω
	$V_{GS}=4.5V, I_D=10A$			18	30	m Ω
Input Capacitance	$V_{DS}=20V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	1050	-	pF
Output Capacitance		C_{oss}	-	75	-	
Reverse Transfer Capacitance		C_{rss}	-	65	-	
Total Gate Charge	$I_D=10A,$ $V_{DD}=15V,$ $V_{GS}=10V$	Q_g	-	23	-	nC
Gate-Source Charge		Q_{gs}	-	3.5	-	
Gate-Drain Charge		Q_{gd}	-	5.5	-	
Turn-on delay time	$V_{GS}=10V$ $V_{DD}=15V$ $R_G=3\Omega$ $I_D=6A$	$t_{d(on)}$	-	5.5	-	ns
Rise Time		T_r	-	14	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	25	-	
Fall Time(Note2)		t_f	-	12	-	
Maximun Body-Diode Continuous Current		I_S	-	-	30	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	80	A
Drain-Source Diode Forward Voltage	$I_{SD}=1A$	V_{SD}	-	-	1.2	V

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

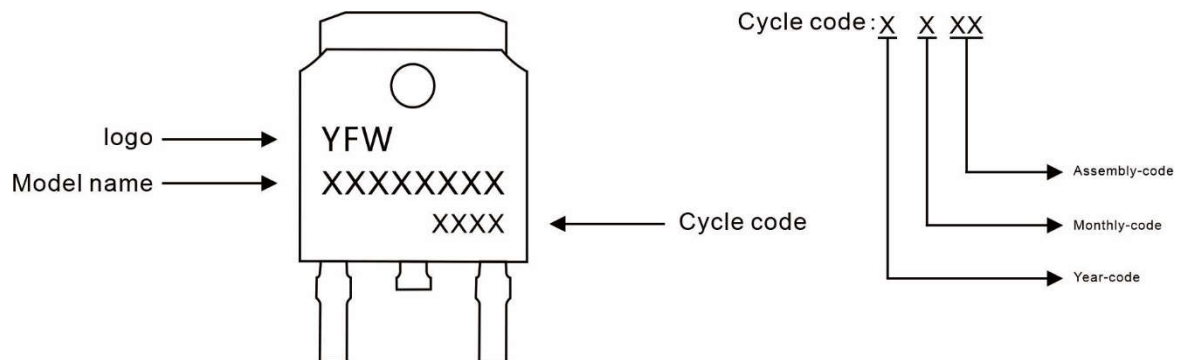
Ratings and Characteristic Curves



Ratings and Characteristic Curves



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW30N04AD	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	0.60	0.86	0.023	0.033
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	6.20	0.213	0.244
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	3.50	0.106	0.138
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.