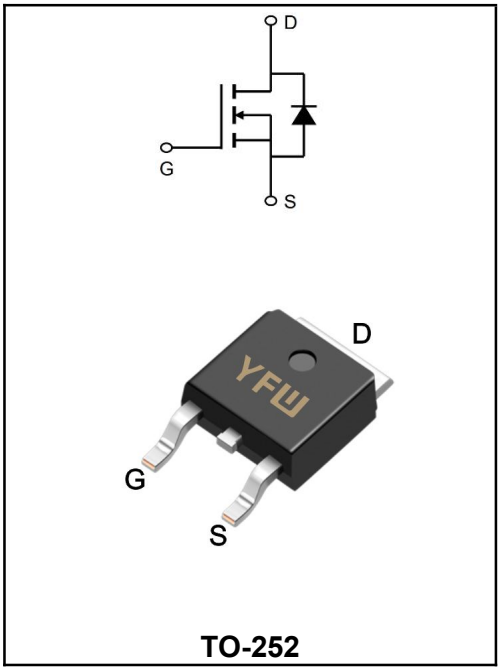
100V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	40A
V_{DSS}	100V
R_{DSON}-typ(@V_{GS}=10V)	＜31mΩ(Typ:24mΩ)



TO-252

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℃ 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	40	A
Pulsed Drain Current (Note1)	I_{DM}	100	A
Power Dissipation	P_D	83	W
Single Pulse Avalanche Energy	E_{AS}	100	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case (Note2)	$R_{\theta JC}$	1.8	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62	°C/W

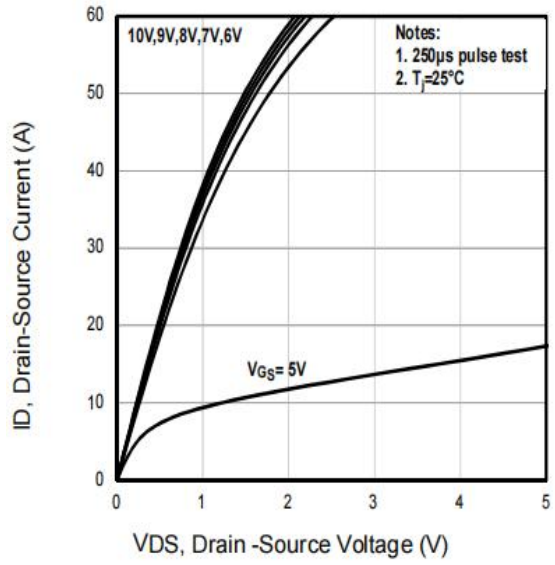
Note1:Pulse test: 300 μs pulse width, 2 % duty cycl

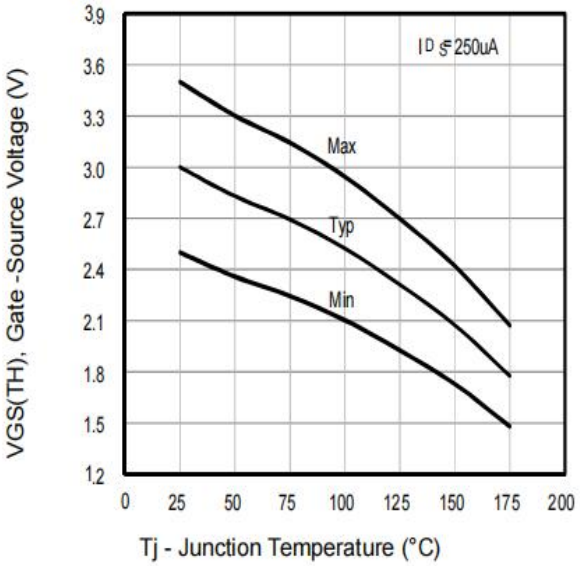
Maximum Ratings at Tc=25°C unless otherwise specified

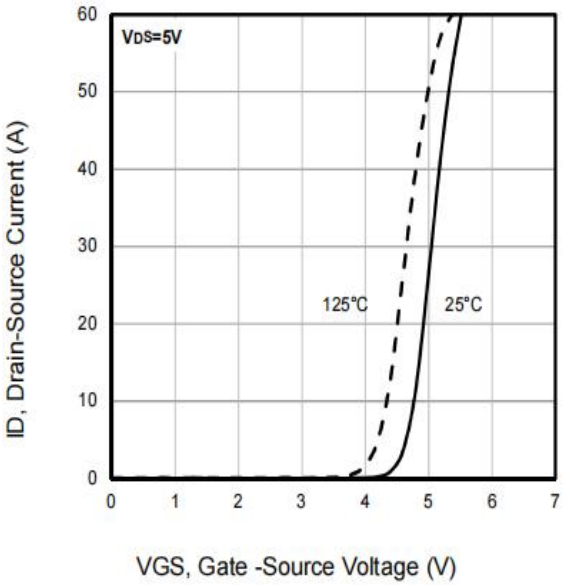
Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{GS} = 0 V,I_D = 250 μA	BV_{DSS}	100	-	-	V
Drain-Source Leakage Current	V_{DS} = 100V, V_{GS} = 0 V	I_{DSS}			1	μA
	V_{DS}=100V,Tc=125°C		-	-	100	μA
Gate Leakage Current	V_{GS} = ± 20 V, V_{DS} = 0 V	I_{GSS}	-	-	±100	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 = 20A	$R_{DS(on)}$	-	24	31	mΩ
	V_{GS} = 4.5 V, I_D = 10 A			36	-	mΩ
Input Capacitance	V_{GS} = 0 V, V_{DS} = 25 V f=1 MHz	C_{iss}	-	2180	-	pF
Output Capacitance		C_{oss}	-	100	-	pF
Reverse Transfer Capacitance		C_{rss}	-	60	-	pF
Turn-on Delay Time	V_{DD}=50V V_{GS}=10V RG=3Ω I_D=40A	$t_{d(ON)}$	-	10	-	ns
Rise Time		t_r	-	42	-	ns
Turn-Off Delay Time		$t_{d(OFF)}$	-	27	-	ns
Fall Time		t_f	-	26	-	ns
Total Gate Charge	V_{DS}=50V V_{GS}=10V I_D=40A	Q_G	-	38	-	nC
Gate to Source Charge		Q_{GS}	-	11	-	nC
Gate to Drain Charge		Q_{GD}	-	10	-	nC
Maximun Body-Diode Continuous Current (Note 2)		I_S	-	-	40	A
Maximun Body-Diode Pulsed Curre		I_{SM}	-	-	100	A
Drain-Source Diode Forward Voltage	I_{SD} = 40A	V_{SD}	-	-	1.2	V
Reverse Recovery Time	I_S = I_F , I_{SD}=40A,V_{GS} = 0 V, dI / dt = 100 A/μs	trr	-	25	-	ns
Reverse Recovery Charge		Qrr	-	28	-	μC

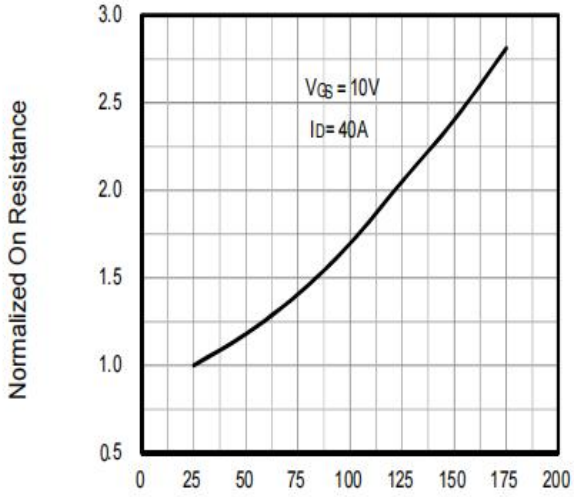
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

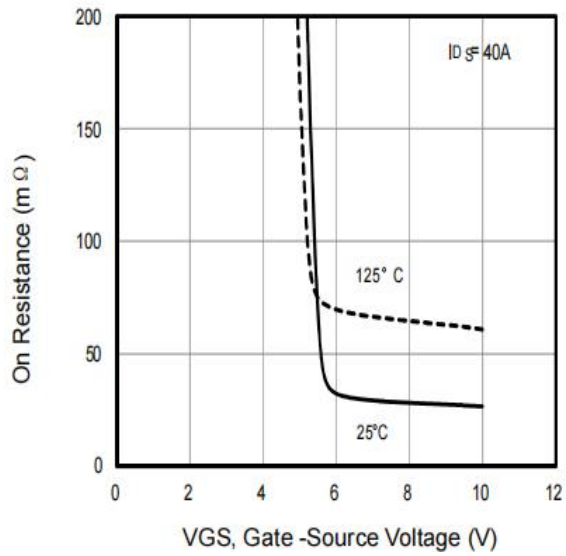
Ratings and Characteristic Curves

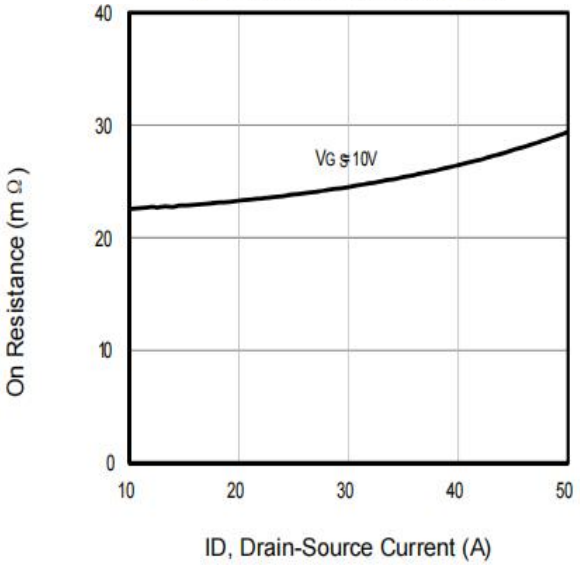




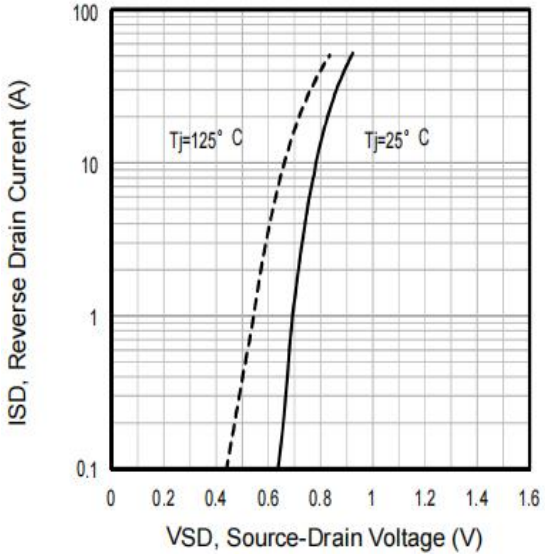


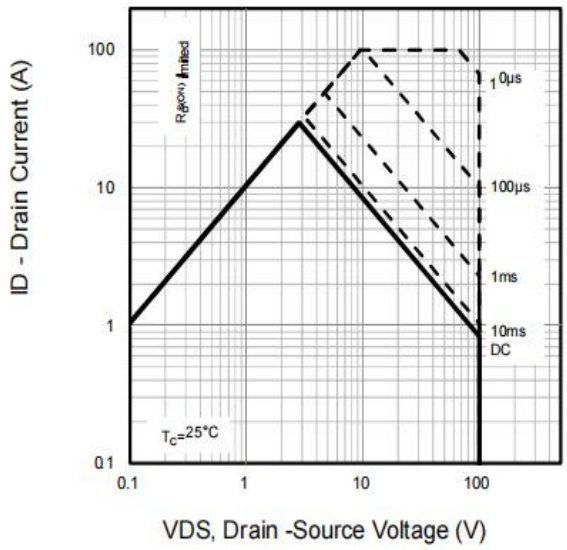


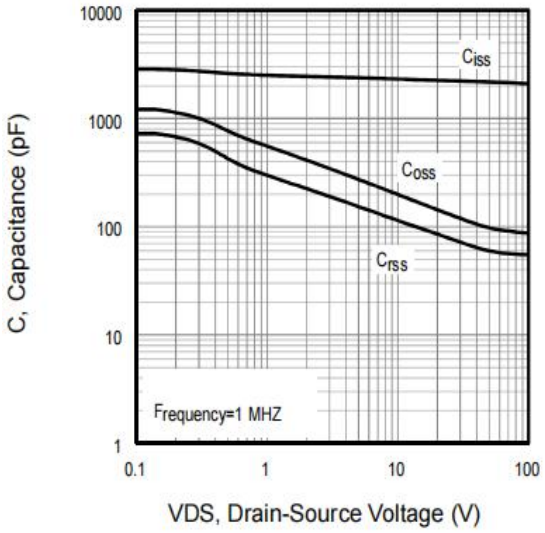


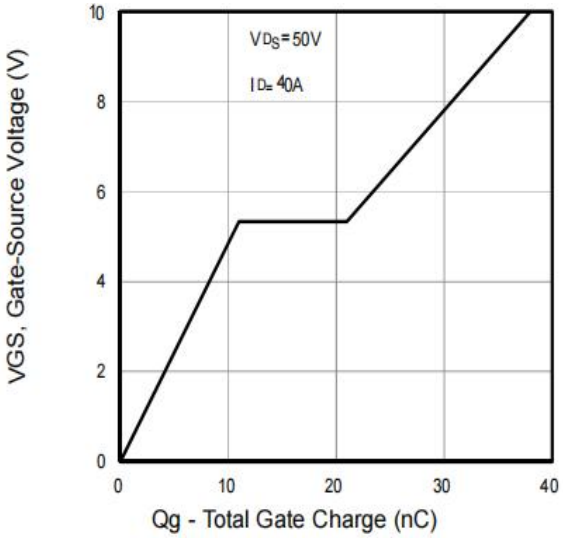


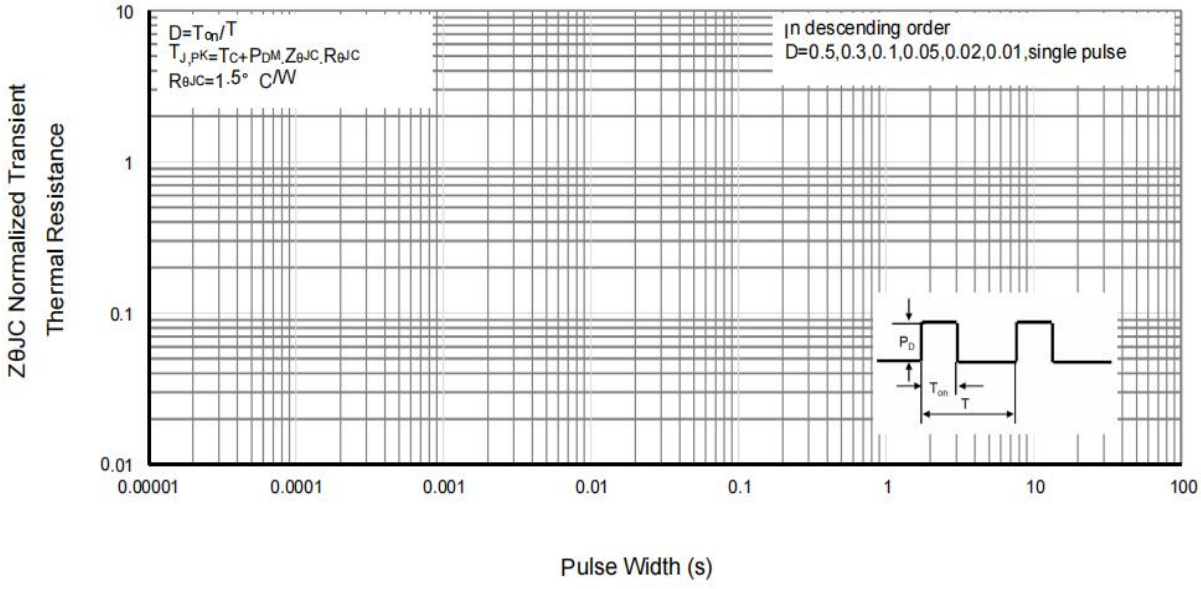
Ratings and Characteristic Curves



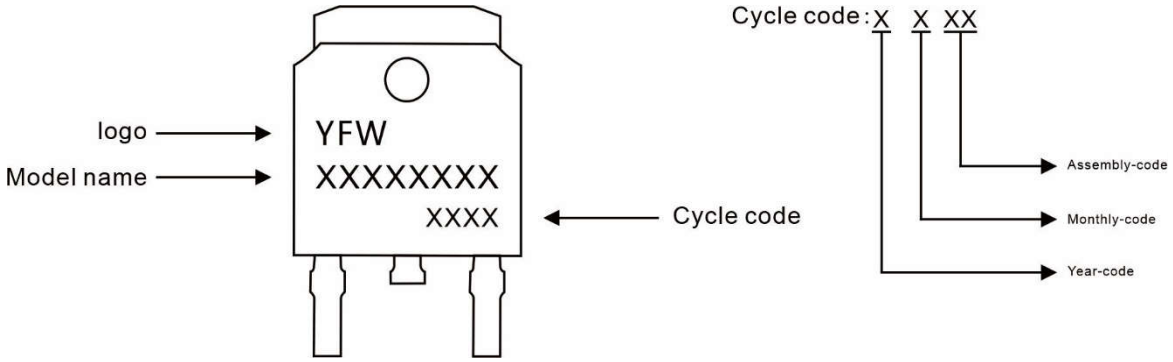








Marking Diagram

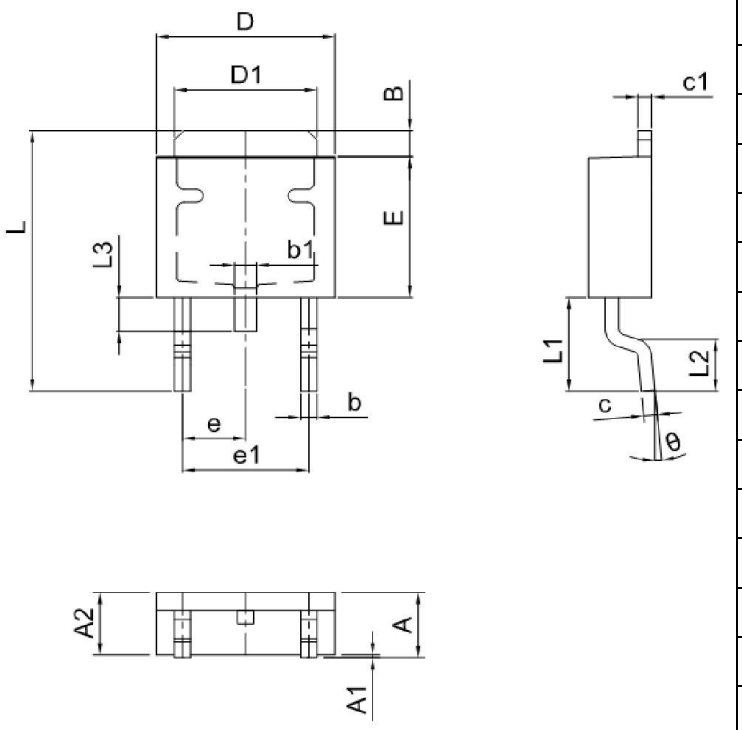


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW40N10AD	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

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