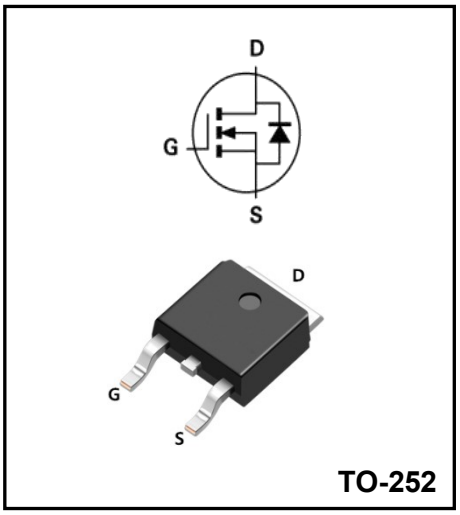
100V N- Channel Advanced Power MOSFET

MAIN CHARACTERISTICS

I_D	60A
V_{DSS}	100V
R_{DSON}-typ(@V_{GS}=10V)	＜9.5mΩ(Type:8.2 mΩ)



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

Product Specification Classification

Part Number	Package	Marking	Pack
YFW60N10AD	TO-252	YFW 60N10AD XXXXX	2500PCS/Tape

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	60	A
Pulsed Drain Current (Note1)	I_{DM}	180	A
Power Dissipation	P_D	125	W
Single Pulse Avalanche Energy (Note5)	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(Note 2)	$R_{\theta JC}$	1	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62	°C/W

Electrical Characteristics at Tc=25°C unless otherwise specified

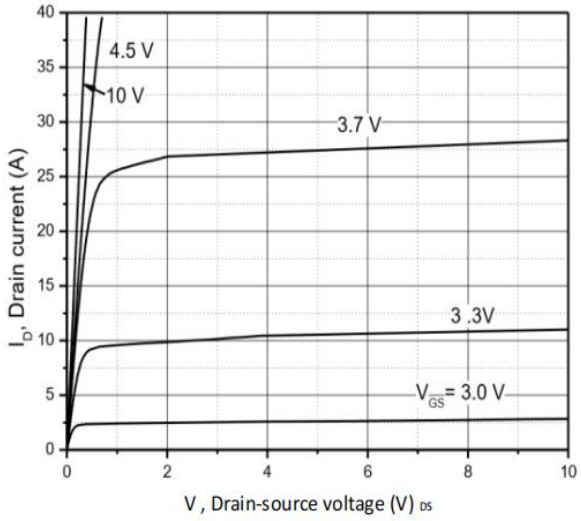
Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{GS} = 0 V,I_D = 250 μA	BV_{DSS}	100	-	-	V
Drain-Source Leakage Current	V_{DS} = 100V, V_{GS} = 0 V	I_{DSS}	-	-	1	μA
	V_{DS}=100V,Tc=125°C		-	-	100	μA
Gate Leakage Current	V_{GS} = ± 20 V, V_{DS} = 0 V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	V_{DS} = V_{GS} , I_D = 250 μA	$V_{GS(th)}$	1.3	-	2.3	V
Drain-Source On-State Resistance (Note 3)	V_{GS} = 10 V, I_D = 20A	$R_{DS(on)}$	-	8.2	9.5	mΩ
	V_{GS} = 4.5 V, I_D = 10 A	$R_{DS(on)}$		11.5	13.5	mΩ
Input Capacitance	V_{GS} = 0 V, V_{DS} = 50 V, f = 1MHz	C_{iss}	-	2604	-	pF
Output Capacitance		C_{oss}	-	361.2	-	pF
Reverse Transfer Capacitance		C_{rss}	-	6.5	-	pF
Turn-on Delay Time	V_{DS}=50V, I_D=25A V_{GS}=10V,RG=2.2Ω (Note3,4)	$t_{d(ON)}$	-	20.6	-	ns
Rise Time		t_r	-	5	-	ns
Turn-Off Delay Time		$t_{d(OFF)}$	-	51.8	-	ns
Fall Time		t_f	-	9	-	ns
Total Gate Charge	V_{DS}=50V,I_D=25A, V_{GS}=10V (Note3,4)	Q_G	-	49.9	-	nC
Gate to Source Charge		Q_{GS}	-	6.5	-	nC
Gate to Drain Charge		Q_{GD}	-	12.4	-	nC

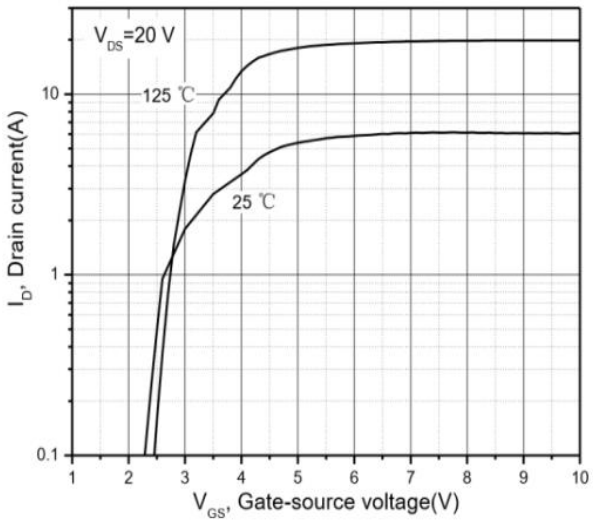
Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

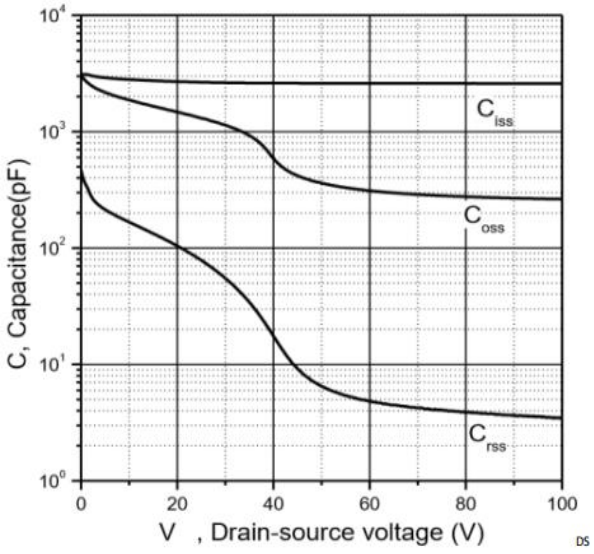
Characteristics	Test Condition	Symbo	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current (Note 2)		I_S	-	-	60	A
Maximun Body-Diode Pulsed Current		I_{SM}	-	-	180	A
Reverse Recovery Time	I_S = I_F, ISD=12A,V_{GS} = 0 V, dI / dt = 100 A/μs (Note3)	trr	-	60.4	-	ns
Reverse Recovery Charge		Qrr	-	106.1	-	μC
Drain-Source Diode Forward Voltage	V_{GS}=0V , I_S=12A , T_J=25℃	V_{SD}	-	-	1.3	V

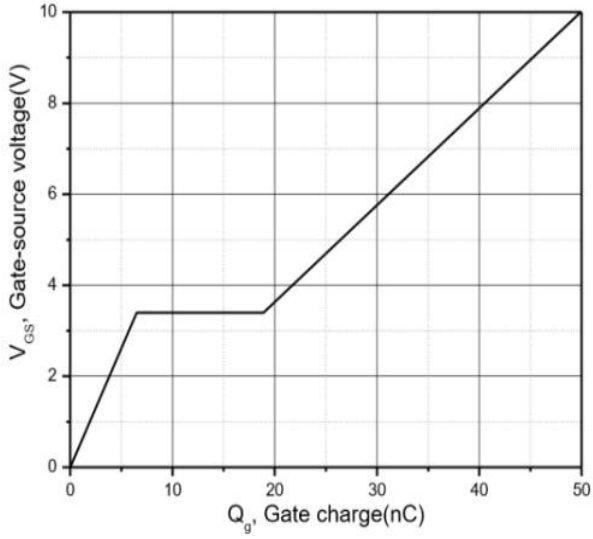
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle.

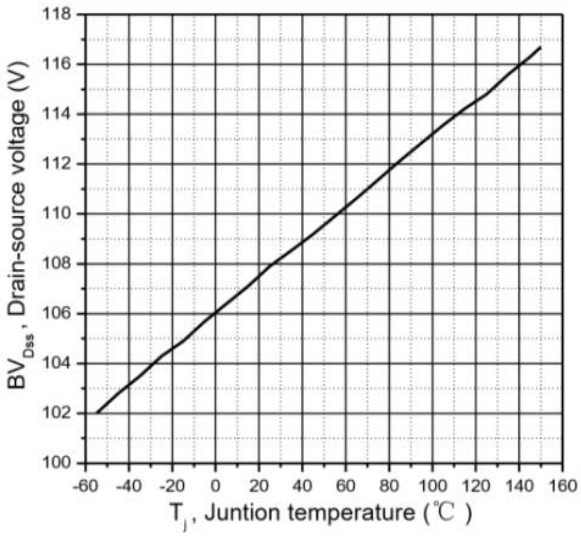
RATINGS AND CHARACTERISTIC CURVES

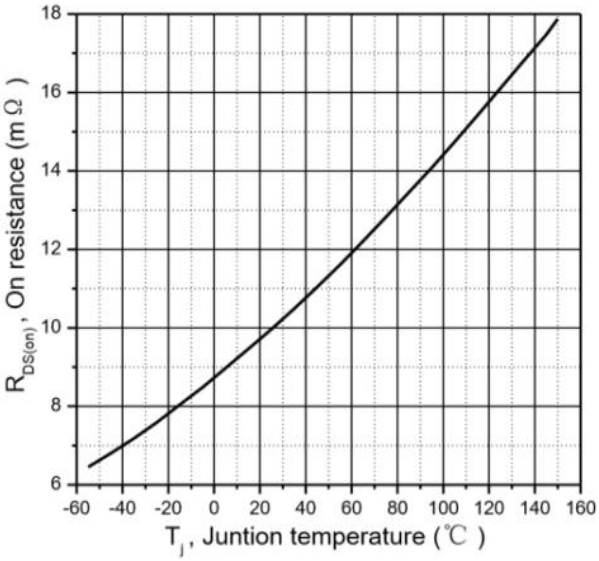












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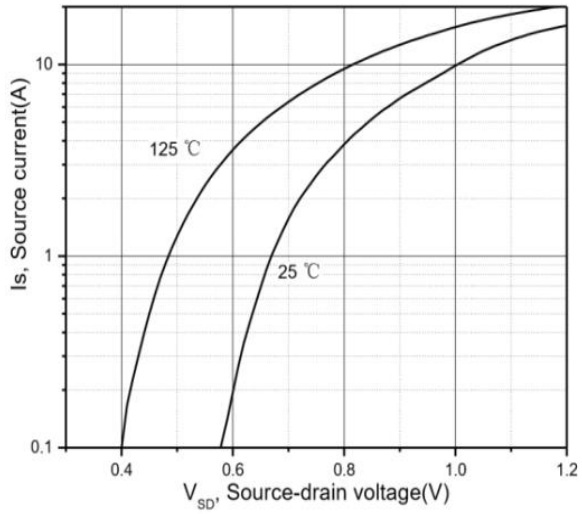

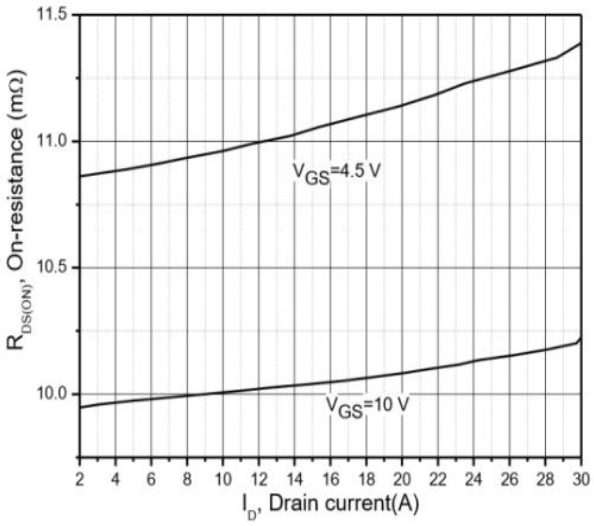

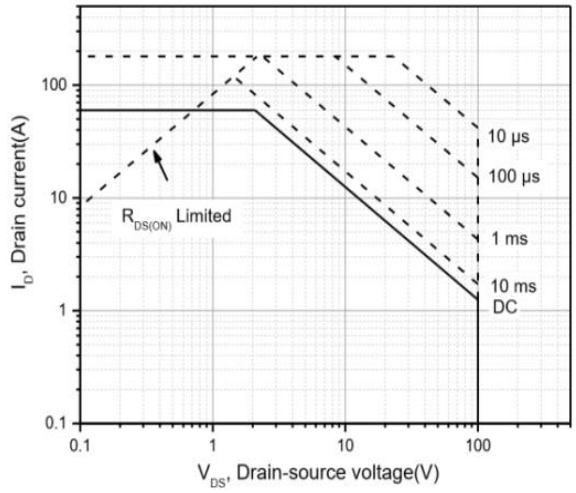

Package Outline Dimensions Millimeters

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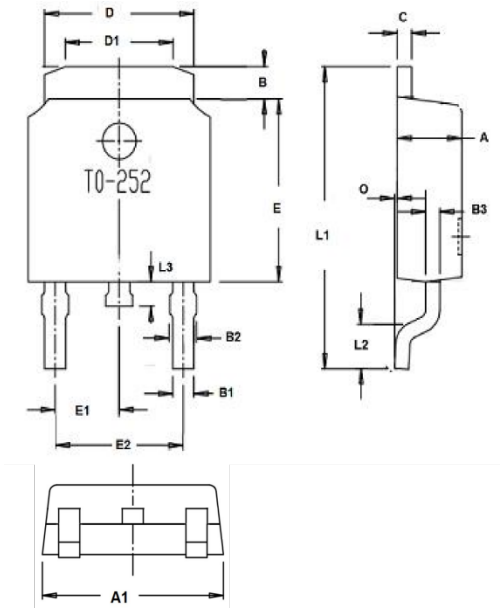

Dim.	Min.	Max.
A	2.1	2.5
A1	6.3	6.9
B	0.95	1.55
B1	0.6	0.8
B2	0.75	0.95
C	Typ0.5	
D	5.3	5.5
D1	3.65	4.05
E	5.8	6.4
E1	Typ2.3	
E2	Typ4.6	
O	0	0.15
L1	9	11
L2	Typ1.5	
L3	0.7	1
All Dimensions in millimeter		