

60V P-Channel Enhancement Mode MOSFET

MAIN CHARACTERISTICS

I_D	-50A
V_{DSS}	-60V
R_{DS(ON)-typ(@V_{GS}=10V)}	< 30mΩ (Type:25 mΩ)

FEATURES

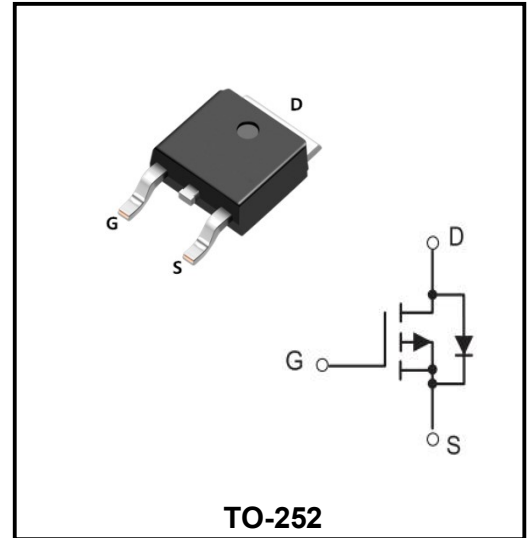
Adopt advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

APPLICATIONS

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

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



Product Specification Classification

Part Number	Package	Marking	Pack
YFW50P06AD	TO-252	YFW 50P06AD XXXXX	2500PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continue Drain Current	I_D	-50	A
Pulsed Drain Current (Note1)	I_{DM}	-200	A
Single Pulsed Avalanche Energy	E_{AS}	195	mJ
Power Dissipation	P_D	95	W
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.3	°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

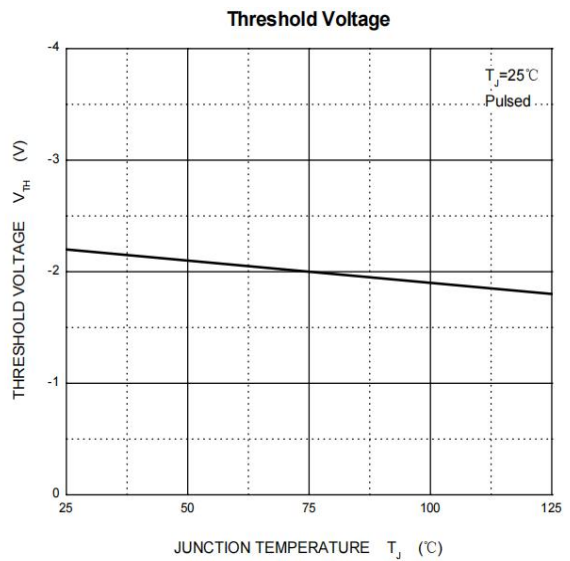
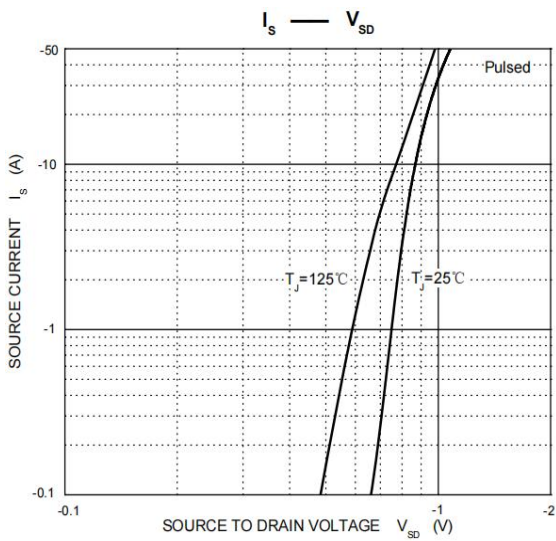
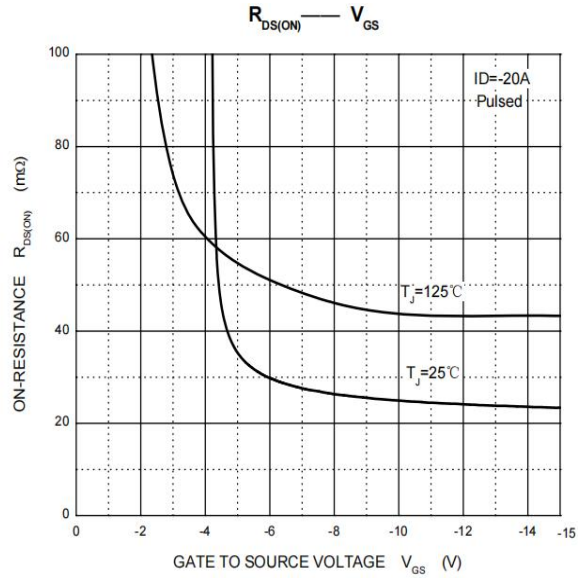
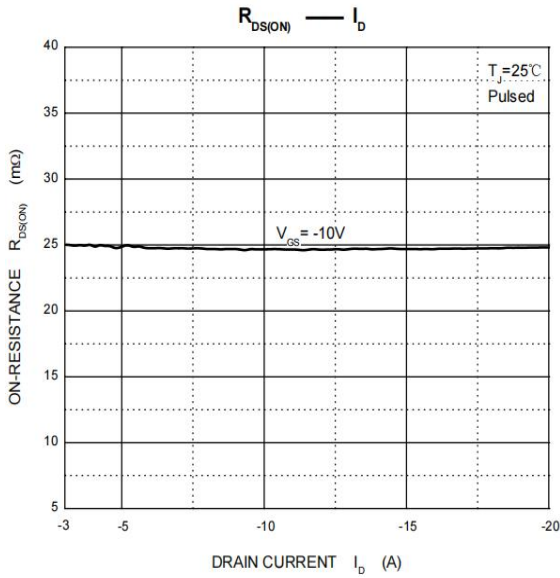
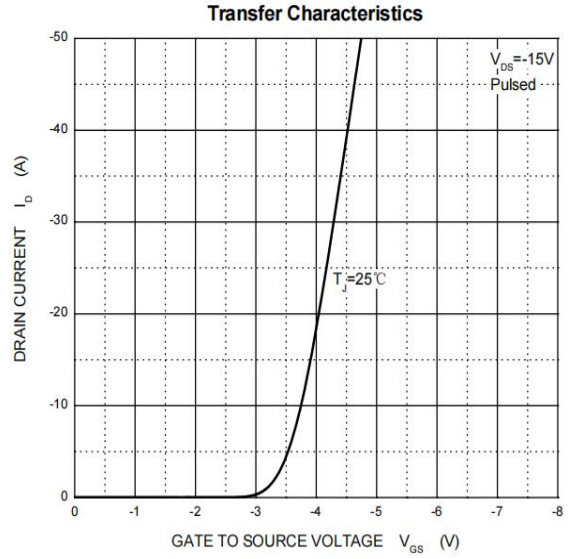
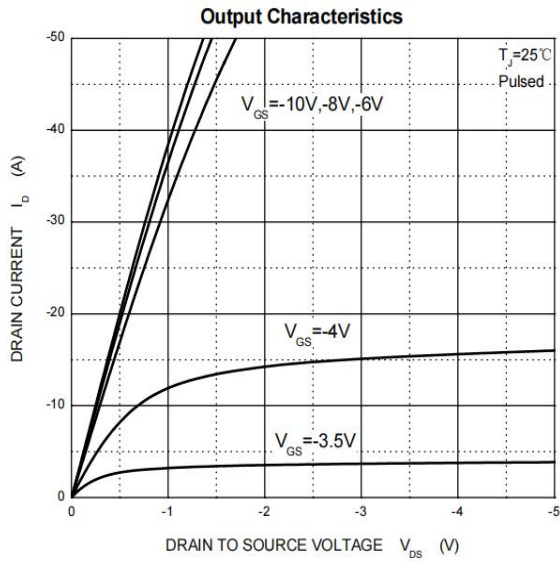
Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = -250 \mu A$	BV_{DSS}	-60	-	-	V
Drain-Source Leakage Current	$V_{DS} = -60V, V_{GS} = 0V$	I_{DSS}	-	-	-1	μA
Gate Leakage Current	$V_{GS} = \pm 20V, V_{DS} = 0V$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250 \mu A$	$V_{GS(th)}$	-1	-	-2.5	V
Drain-Source On-State Resistance	$V_{GS} = -10V, I_D = -20A$	$R_{DS(on)}$	-	25	30	m Ω
Input Capacitance	$V_{DS} = -25V, V_{GS} = 0V, f = 1.0MHz$	C_{iss}	-	4500	-	pF
Output Capacitance		C_{oss}	-	700	-	pF
Reverse Transfer Capacitance		C_{rss}	-	513	-	pF
Turn-on Delay Time(Note2)	$V_{DS} = -30V, V_{GS} = -10V, R_G = 3\Omega, R_L = 1.5\Omega$	$t_{d(ON)}$	-	15	-	ns
Rise Time(Note2)		t_r	-	17	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	40	-	ns
Fall Time(Note2)		t_f	-	42	-	ns
Total Gate Charge(Note2)	$V_{DS} = -30V, V_{GS} = -10V, I_D = -20A$	Q_G	-	73	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	15	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	18	-	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	-	-	-50	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	-200	A
Drain-Source Diode Forward Voltage	$V_{GS} = 0V, I_S = -20A, T_J = 25$	V_{SD}	-	-	-1.2	V

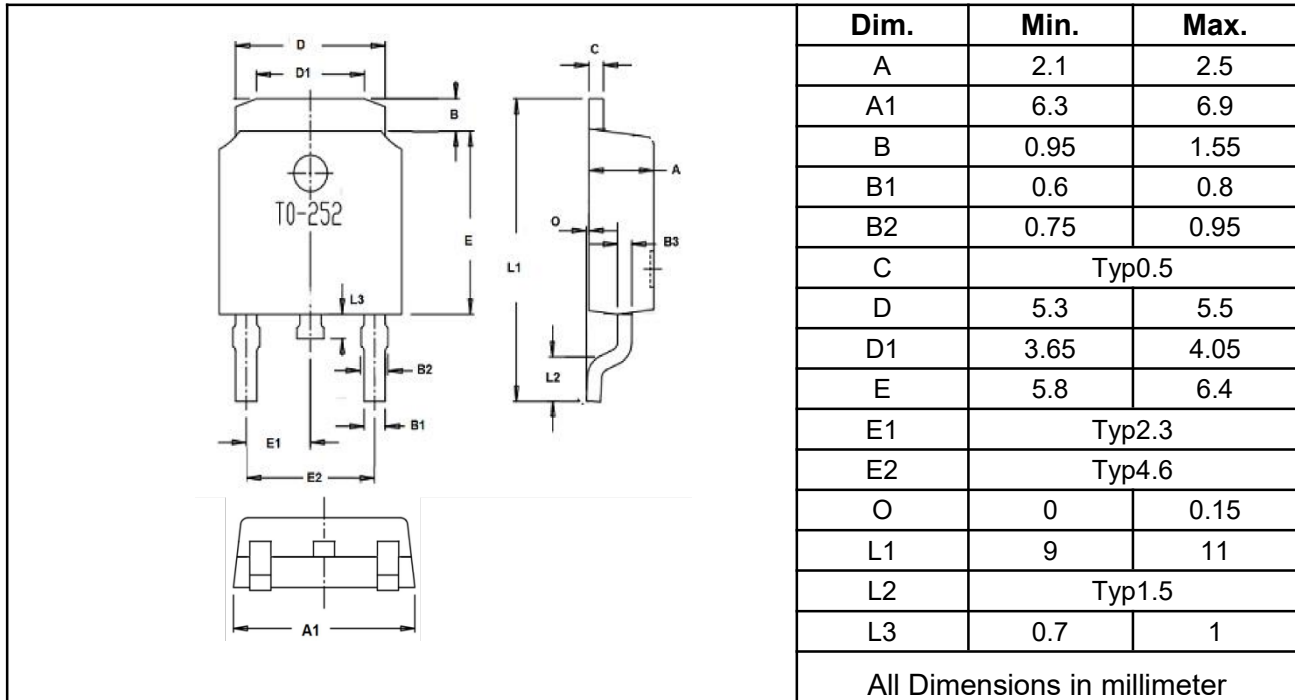
Note2:Pulse test: 300 μ s pulse width, 2 % duty cycle

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TO-252



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