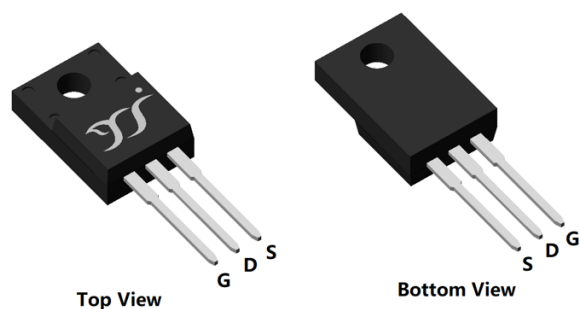


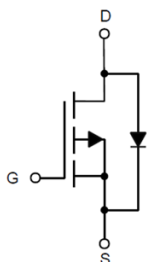
## P-Channel Enhancement Mode Field Effect Transistor



Top View

Bottom View

**ITO-220AB**



### Product Summary

$V_{DS}$	-60 V
$I_D$	-80 A
$R_{DS(ON)}$ ( at $V_{GS}=-10V$ )	<9.5 m
$R_{DS(ON)}$ ( at $V_{GS}=-6V$ )	<11 m
100% EAS Tested	
100% $\nabla V_{DS}$ Tested	

### General Description

gate trench MOSFET technology  
 $R_{DS(on)}$  & FOM  
 Excellent stability and uniformity  
 -0 Flammability Rating  
 Free

### Applications

power management

### Absolute Maximum Ratings ( $T_A=25^\circ C$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		$V_{DS}$	-60	V
Gate-source Voltage		$V_{GS}$	$\pm 18$	V
Drain Current	$T_A=25^\circ C$	$I_D$	-12	A
	$T_A=100^\circ C$		-7.5	
	$T_C=25^\circ C$		-80	
	$T_C=100^\circ C$		-50	
Pulsed Drain Current <sup>A</sup>		$I_{DM}$	-320	A
Avalanche energy <sup>B</sup>		EAS	729	mJ
Total Power Dissipation <sup>C</sup>	$T_A=25^\circ C$	$P_D$	2.5	W
	$T_A=100^\circ C$		1	
	$T_C=25^\circ C$		73	
	$T_C=100^\circ C$		29	
Junction and Storage Temperature Range		$T_J, T_{STG}$	-55~+150	$^\circ C$

### Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient <sup>D</sup>	Steady-State	$R_{\theta JA}$	40	50	$^\circ C/W$
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	1.4	1.7	

### Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJF80GP06H	B1	YJF80GP06H	50	/	5000	Tube



# YJF80GP06H

## Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =-25	-60	-	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-60V, V <sub>GS</sub> =0V	-	-	-1	
		V <sub>DS</sub> =-60V, V <sub>GS</sub> =0V, T <sub>J</sub> =150°C	-	-	-100	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±18V, V <sub>DS</sub> =0V	-	-	±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =-	-2	-2.6	-3.5	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-40A	-	7	9.5	
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-20A	-	7	9.5	
		V <sub>GS</sub> =-6V, I <sub>D</sub> =-20A	-	8	11	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-40A, V <sub>GS</sub> =0V	-	-0.9	-1.2	V
Gate resistance	R <sub>G</sub>	f=1MHz, Open drain	-	9	-	
Maximum Body-Diode Continuous Current	I <sub>S</sub>		-	-	-80	A
<b>Dynamic Parameters</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V, f=1MHz	-	5450	-	pF
Output Capacitance	C <sub>oss</sub>		-	920	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	50	-	
<b>Switching Parameters</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-30V, I <sub>D</sub> =-20A	-	82	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	25	-	
Gate-Drain Charge	Q <sub>gd</sub>		-	17	-	
Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =-20A, di/dt=500A/us	-	45	-	nC
Reverse Recovery Time	t <sub>rr</sub>		-	150	-	ns
Turn-on Delay Time	t <sub>D(on)</sub>	V <sub>GS</sub> =-10V, V <sub>DD</sub> =-30V, I <sub>D</sub> =-20A R <sub>GEN</sub> =1.6	-	15	-	ns
Turn-on Rise Time	t <sub>r</sub>		-	50	-	
Turn-off Delay Time	t <sub>D(off)</sub>		-	135	-	
Turn-off fall Time	t <sub>f</sub>		-	160	-	

A. Repetitive rating; pulse width limited by max. junction temperature.

B. T<sub>J</sub>=25°C, V<sub>DD</sub>=-40V, V<sub>G</sub>=-10V, R<sub>G</sub> 2mH, I<sub>AS</sub>=-27A.

C. P<sub>a</sub> is based on max. junction temperature, using junction-case and junction-ambient thermal resistance.

D. The value of R is measured with the device mounted on 1 in<sup>2</sup> FR-4 board with 2oz. Copper, in the still air environment with T<sub>A</sub>=25°C. The maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.



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## Typical Electrical and Thermal Characteristics Diagrams

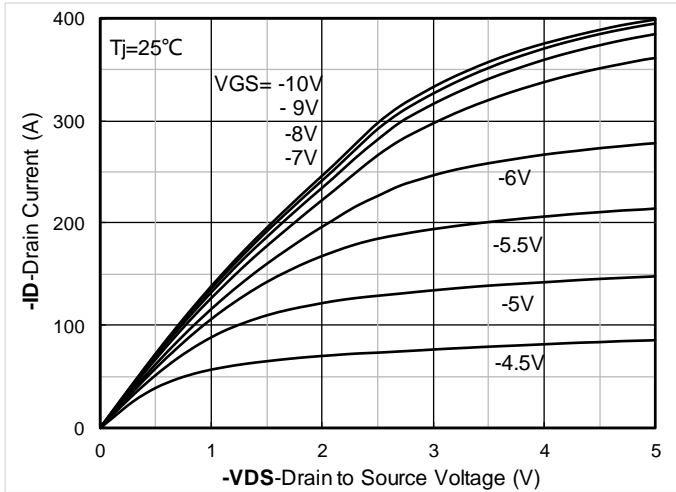


Figure 1. Output Characteristics

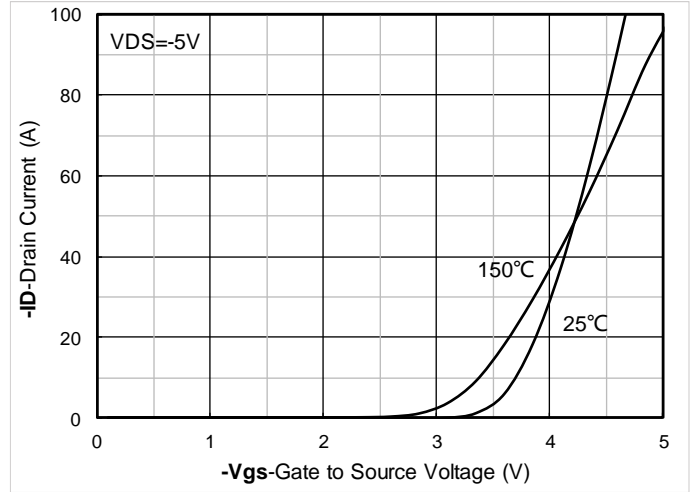


Figure 2. Transfer Characteristics

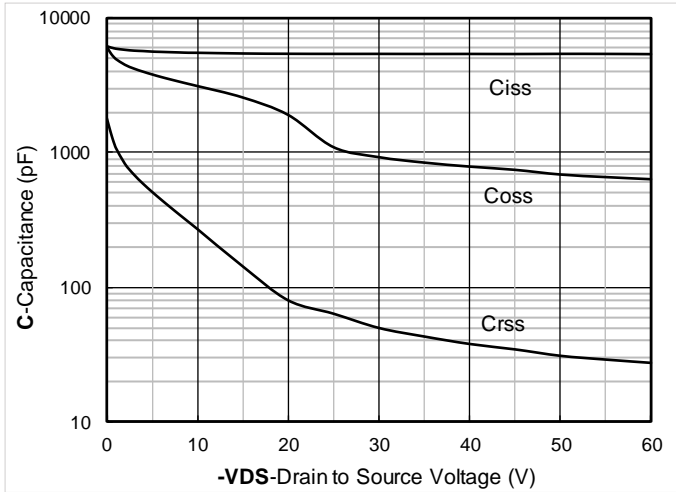


Figure 3. Capacitance Characteristics

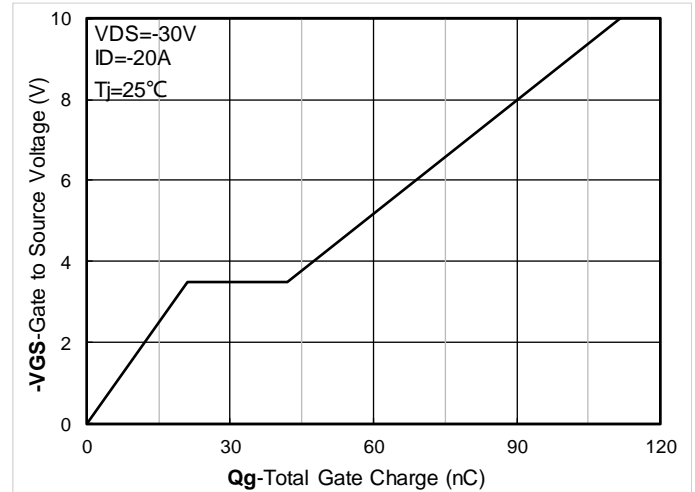


Figure 4. Gate Charge

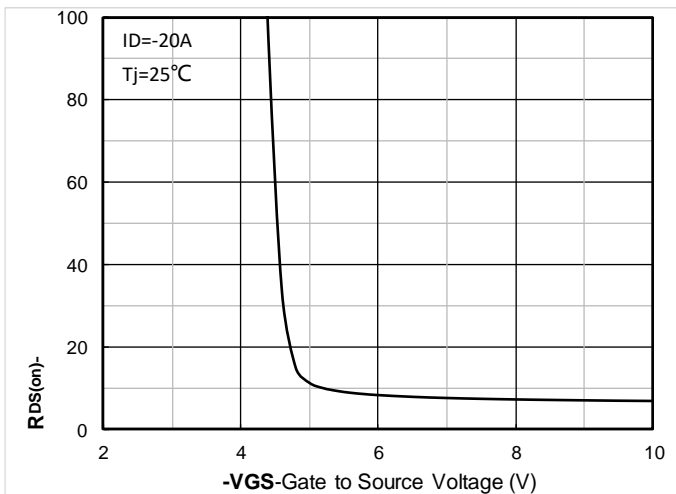


Figure 5. On-Resistance vs Gate to Source Voltage

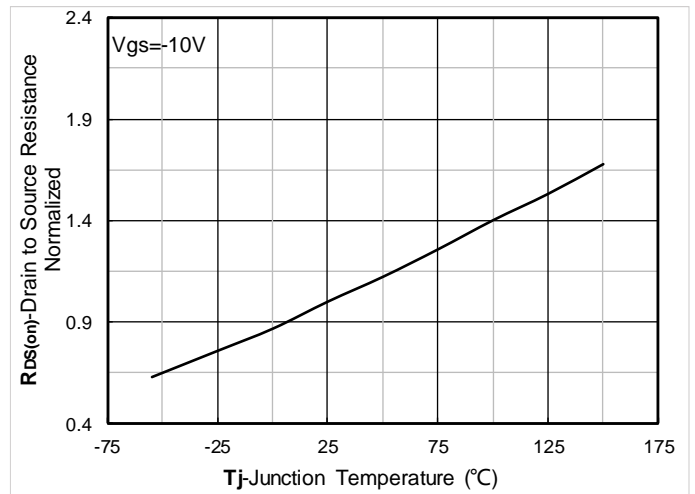


Figure 6. Normalized On-Resistance



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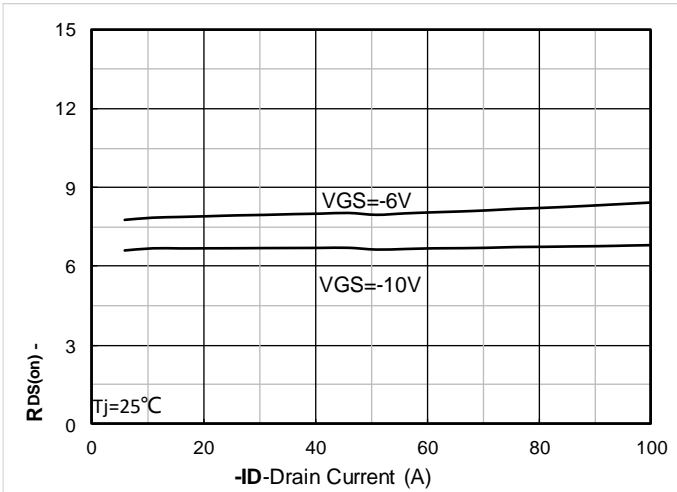


Figure 7. RDS(on) VS Drain Current

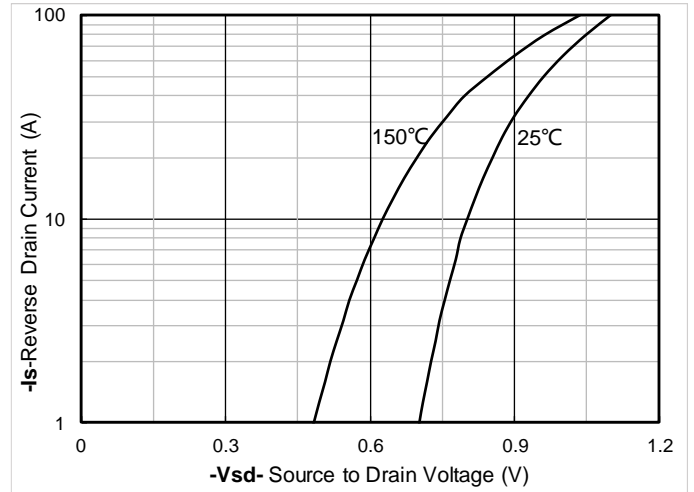


Figure 8. Forward characteristics of reverse diode

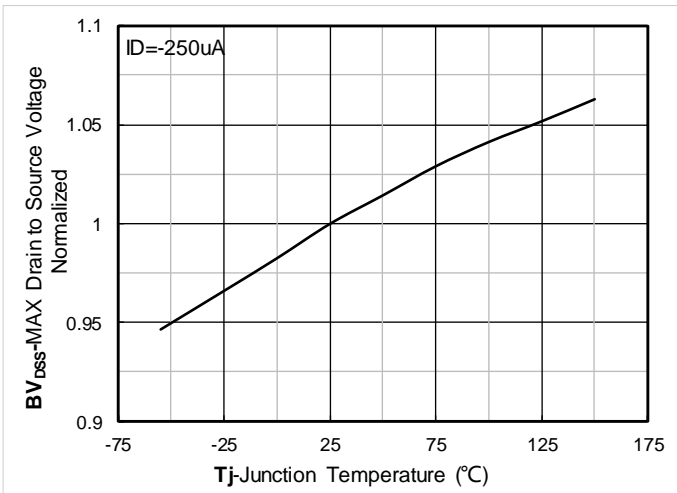


Figure 9. Normalized breakdown voltage

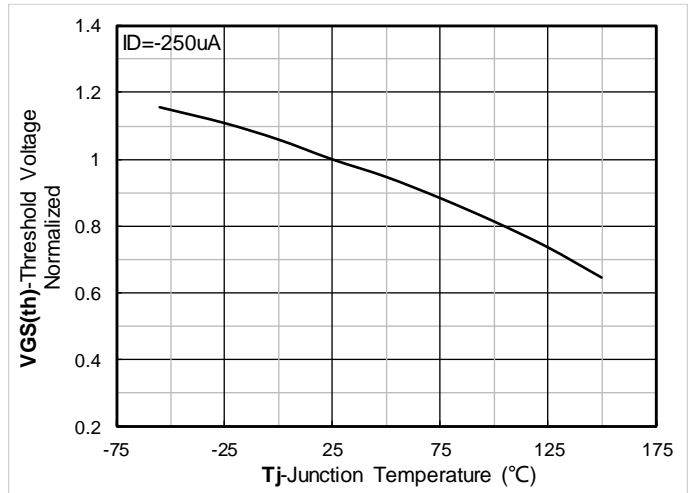


Figure 10. Normalized Threshold voltage

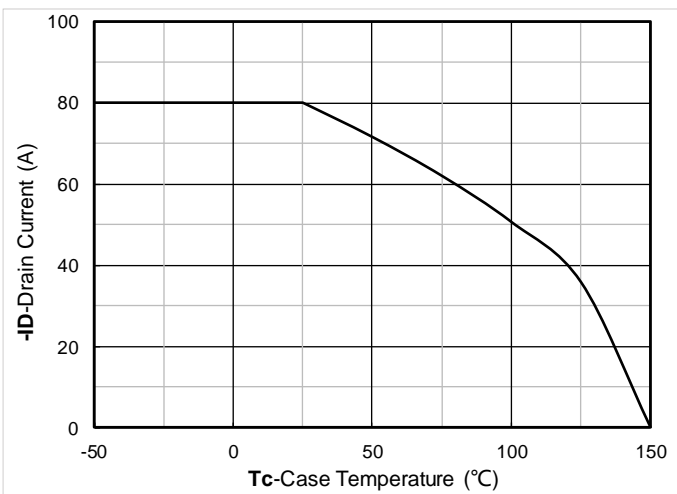


Figure 11. Current dissipation

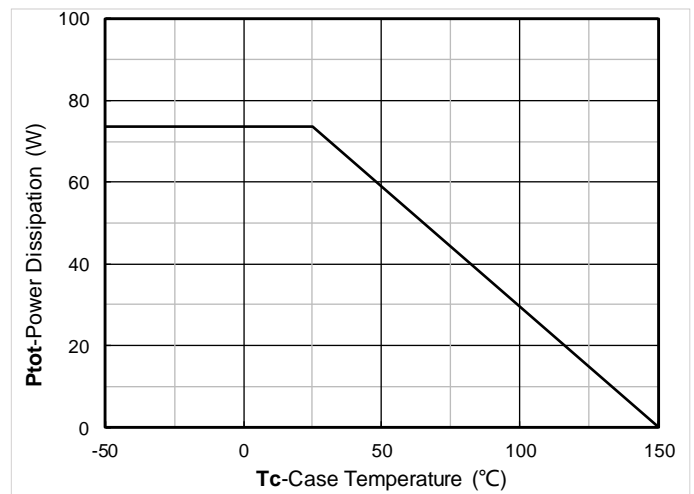


Figure 12. Power dissipation



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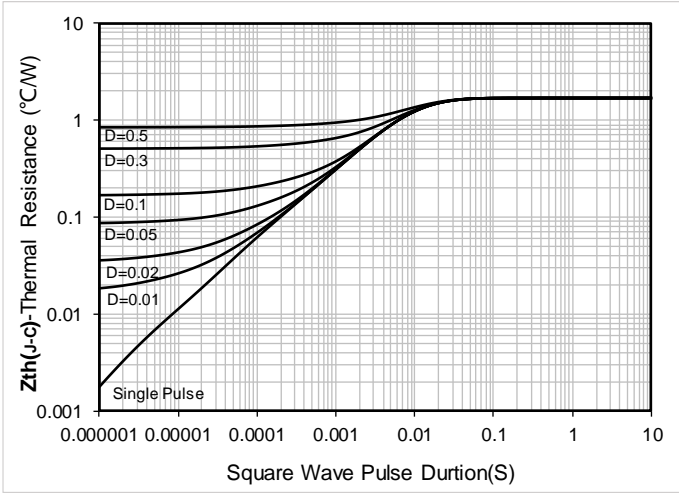


Figure 13. Maximum Transient Thermal Impedance

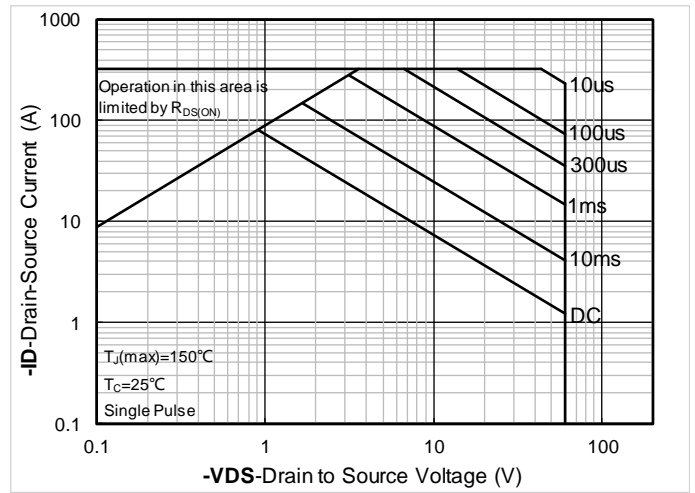


Figure 14. Safe Operation Area



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## ITO-220AB-B Package information

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.382	0.406	9.700	10.300
B	0.610	0.634	15.500	16.100
B1	0.354	0.370	8.990	9.390
C	0.173	0.189	4.400	4.800
C1	0.085		2.150	2.550
D	0.098		2.500	2.900
F	0.016		0.400	0.600
H				
L	0.496		12.600	13.600
N				

NOTE:  
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.  
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.



# YJF80GP06H

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