



## N Channel Enhancement Mode Field Effect Transistor

### Product Summary

$V_{DS}$	110V
$I_D$	3A
$R_{DS(ON)}$ (at $V_{GS}=10V$ )	140mΩ
$R_{DS(ON)}$ (at $V_{GS}=4.5V$ )	250mΩ

### General Description

Split Gate Trench MOSFET technology  
 Excellent package for heat dissipation  
 High density cell design for low  $R_{DS(ON)}$

### Applications

DC-DC Converters  
 Power management functions

### Absolute Maximum Ratings ( $T_A=25$ unless otherwise noted)

Parameter	Symbol	Limit	Unit	
Drain source Voltage	$V_{DS}$	110	V	
Gate source Voltage	$V_{GS}$	20	V	
Drain Current	$I_D$	$T_A=25$	3	A
		$T_A=70$	24	
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	12	A	
Avalanche energy <sup>B</sup>	$E_{AS}$	8	mJ	
Total Power Dissipation <sup>C</sup>	$P_D$	$T_A=25$	15	W
		$T_A=70$	10	

Jm m m m m m



# YJ08G10A

## Electrical Characteristics ( $T_j=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DS}$	$V_{GS}=0V, I_D=250\mu A$	110			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=110V, V_{GS}=0V$			1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=20V, V_{DS}=0V$			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.8	2.8	V
Static Drain-Source On Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=3A$		110	140	m
		$V_{GS}=4.5V, I_D=2A$		135	250	m
Diode Forward Voltage	$V_{SD}$	$I_S=3A, V_{GS}=0V$			1.3	V
Maximum Body Diode Continuous Current	$I_S$				3	A
Gate resistance	$R_G$	$f=1MHz, Q_{pdrain}$		8		
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=100kHz$		206		$\mu F$
Output Capacitance	$C_{oss}$			289		
Reverse Transfer Capacitance	$C_{rss}$			14		
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=10V, V_{DS}=50V, I_D=3A$		43		nC
Gate-Source Charge	$Q_{gs}$			15		
Gate-Drain Charge	$Q_{gd}$			11		
Reverse Recovery Charge	$Q_r$	$I_D=3A, di/dt=100A/\mu s$		394		nC
Reverse Recovery Time	$t_r$			321		
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=50V, I_D=3A$ $R_{GEN}=2$		147		ns
Turn-on Rise Time	$t_r$			35		
Turn-off Delay Time	$t_{d(off)}$			209		
Turn-off Fall Time	$t_f$			27		

A Repetitive rating pulse width limited by max junction temperature.

B  $V_{DS}=50V, R_G=25, L=0.5mH$

C  $P_d$  is based on max junction temperature, using 10 $\mu s$  junction to ambient thermal resistance.

D The value of  $R_{JA}$  is measured with the device mounted on a FR-4 board with 2oz. Copper, in a still air environment with  $T_A=25$  C. The value in any given application depends on the assembly process and board design.



### Typical Performance Characteristics

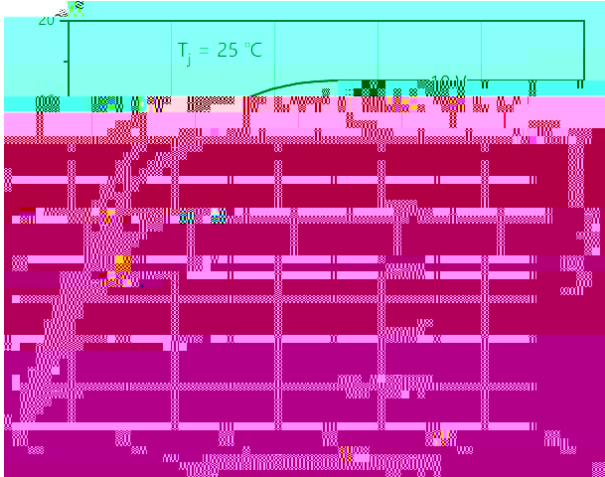


Figure1. Output Characteristics

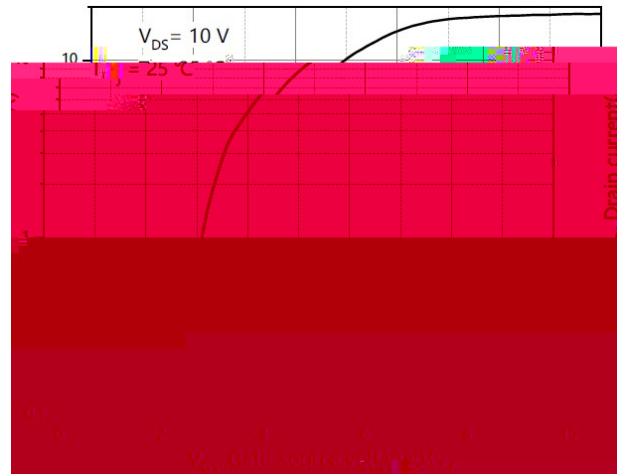


Figure2 Transfer Characteristics

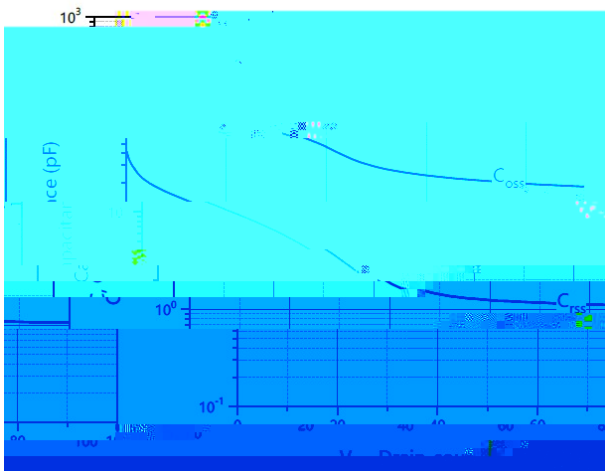


Figure3 Capacitance Characteristics



Figure4 Gate Charge

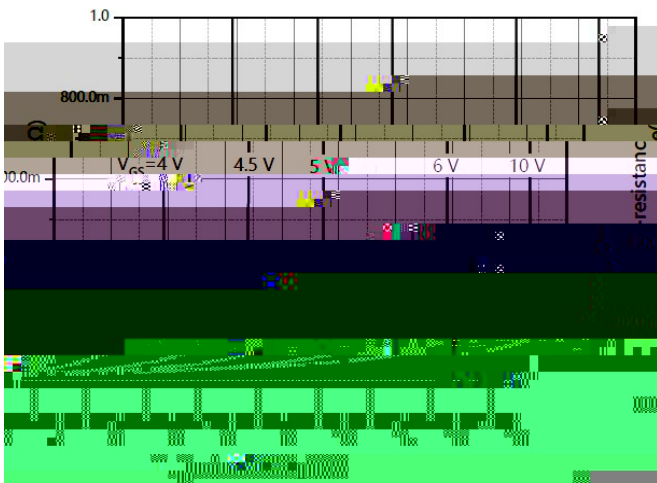


Figure5 : On Resistance vs. Drain Current and Gate Voltage

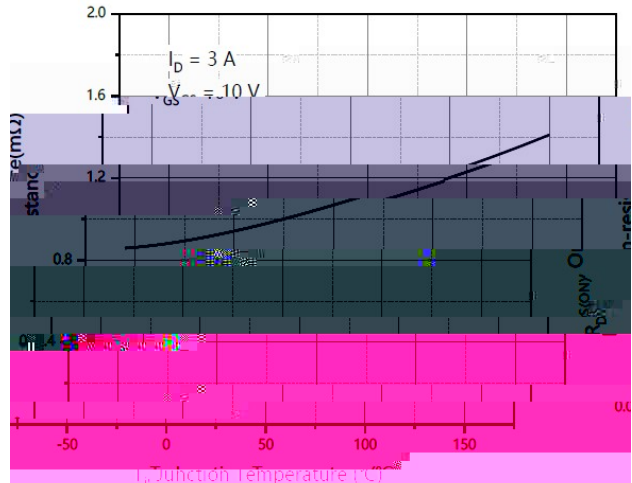


Figure6 Normalized On Resistance

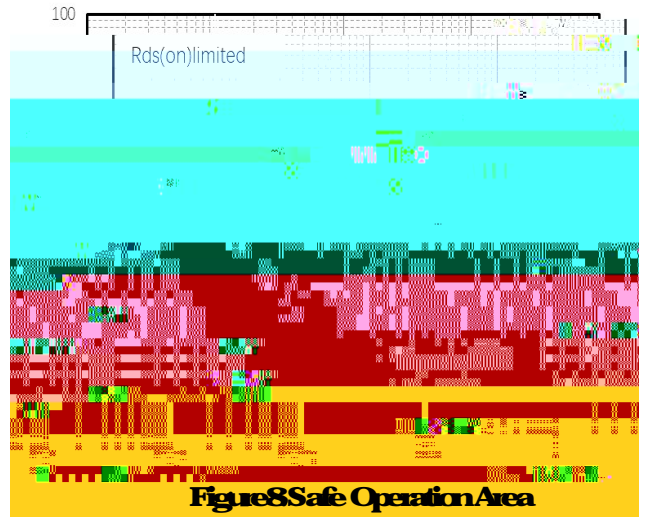


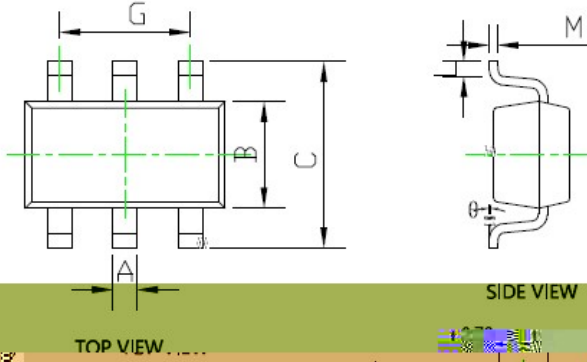
Figure 7. Drain current

Figure 9 Normalized Maximum Transient thermal impedance



# YJ08G10A

## SOF-236L Package information



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.059	0.072	1.50	1.83
B	0.059	0.067	1.50	1.70
C	0.100	0.100	2.54	2.54
G	0.050	0.050	1.27	1.27
M	0.004	0.004	0.10	0.10



# YJ08G10A

---

## Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology 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), Yangjie 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 <http://www.21yangjie.com>, or consult your nearest Yangjie's sales office for further assistance.