



YJ03G10A

N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}

I_D

R_{θJC}

Absolute

Parameter		Unit
Gate-source Voltage		V
Drain Current Thermal Resistance	T _A =25	A
	T _A =70	
Pulsed Drain Current ^A		I _{DM}
Avalanche energy ^B		E _{AS}
Total Power Dissipation ^C	T _A =25	15
	T _A =70	10

Symbolic representation of the transistor parameters and units.



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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
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	μA
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		
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, f=100kHz$		206		μF
Output Capacitance	C_{oss}			289		
Reverse Transfer Capacitance	C_{rss}			14		
Switching Parameters						
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	$I_F=3A, di/dt=100A/\mu s$		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_{diss} is based on max junction temperature, using 10 μs 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

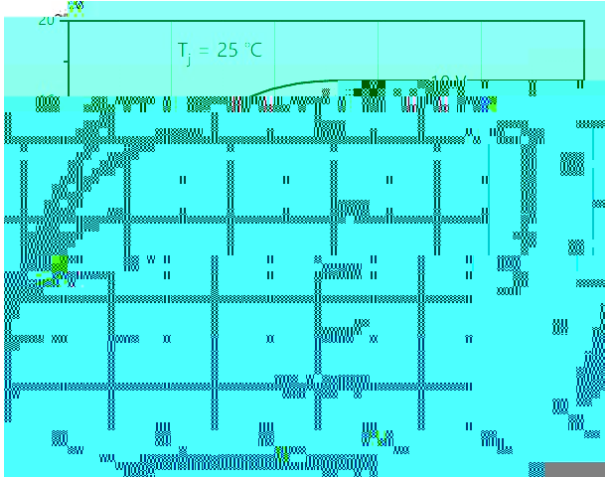


Figure1. Output Characteristics

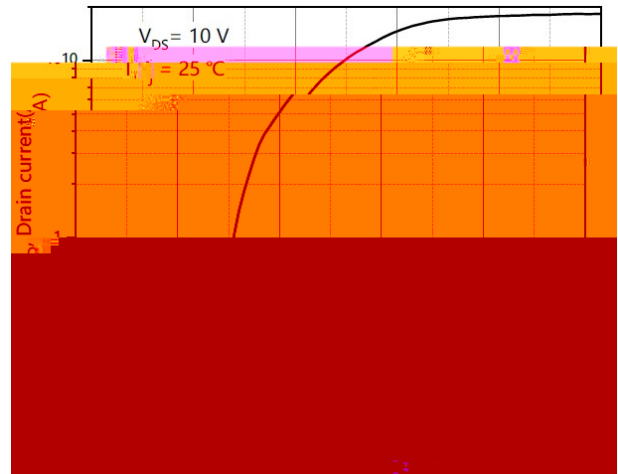


Figure2 Transfer Characteristics

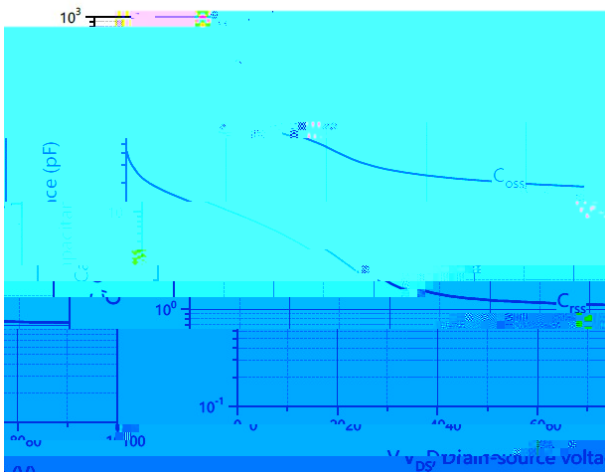


Figure3 Capacitance Characteristics

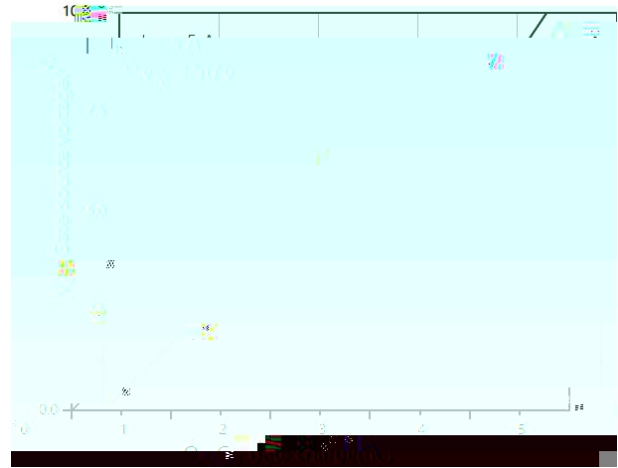


Figure4 Gate Charge

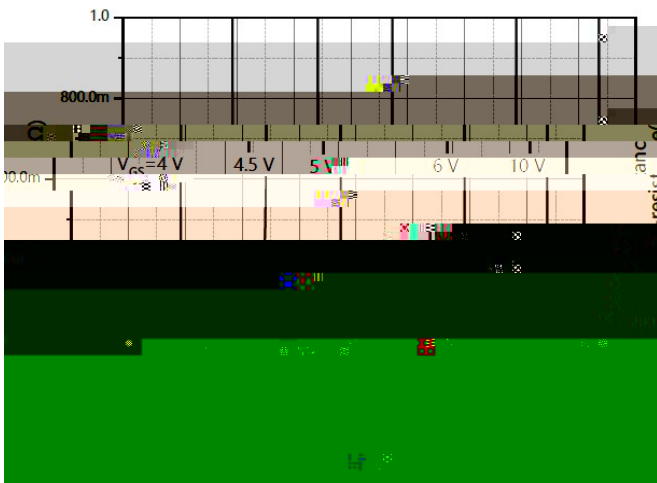


Figure5 : On Resistance vs. Drain Current and Gate Voltage

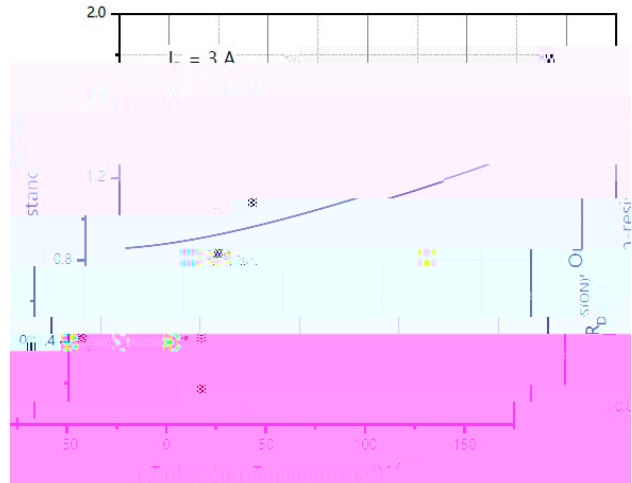


Figure6 Normalized On Resistance

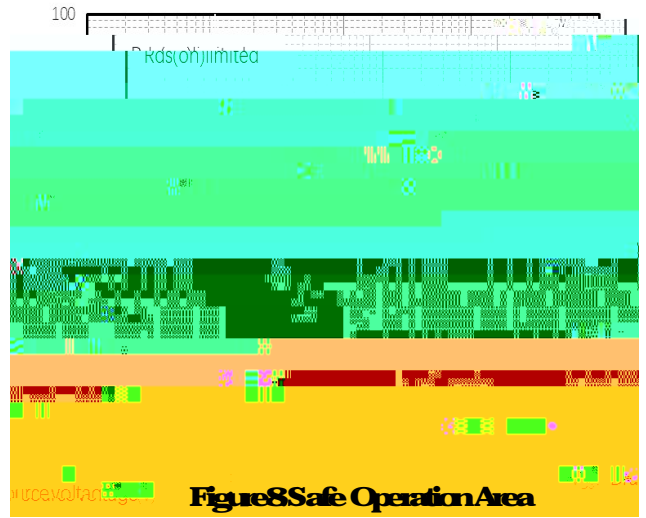


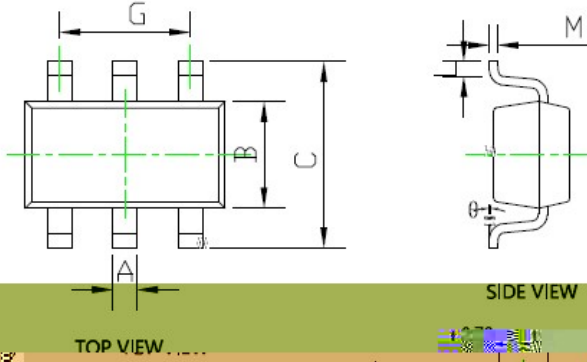
Figure 7. Drain current

Figure 8 Safe Operation Area

Figure 9 Normalized Maximum Transient thermal impedance



SOF-236L Package information



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.012	0.020	0.305	0.508
B	0.059	0.067	1.500	1.700



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