



P-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	-60V
I_D	-22.5A
$R_{DS(ON)}$ (at $V_{GS}=-10V$)	47 m
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	60 m
100% EAS Tested	

General Description

Split gate trench MOSFET technology
 Low $R_{DS(on)}$ & FOM
 Low C_{rss}
 Extremely low switching loss
 Excellent stability and uniformity

-0 Flammability Rating

halogen Free

Applications

Power management
 Industrial DC/DC Conversion Circuits

Absolute Maximum Ratings ($I_A=25$ unless otherwise noted)

		Symbol	Limit	
Drain-source Voltage		V_{DS}	-60	
Gate-source Voltage		V_{GS}	20	
Drain Current	$T_C=25$	I_D	-22.5	
	$T_C=100$		-14.3	
Pulsed Drain Current ^A		I_{DM}	-90	
Avalanche energy ^B		EAS	81	
Total Power Dissipation ^C	$T_C=25$	P_D	43	W
	$T_C=100$		17.2	

Junction and Storage Temperature Range

T_J, T_{STG}



Electrical Characteristics (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =-250	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V	T _J =25		-1	
			T _J =55		-5	
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	-1.3	-1.8	-2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D =-20A		35	47	m
		V _{GS} = -4.5V, I _D =-10A		45	60	
Gate Resistance	R _g	f=1MHz, Open Drain		12		
Diode Forward Voltage	V _{SD}	I _S =-20A, V _{GS} =0V		-0.95	-1.3	V
Maximum Body-Diode Continuous Current	I _S				-23	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-30V, V _{GS} =0V, f=1MHZ		1100		pF
Output Capacitance	C _{oss}			350		
Reverse Transfer Capacitance	C _{rss}			28		
Switching Parameters						
Total Gate Charge	Q _{g(-10V)}	V _{GS} =-10V, V _{DS} =-30V, I _D =-20A		18.7		nC
Total Gate Charge	Q _{g(-4.5V)}			8.8		
Gate-Source Charge	Q _{gs}			4.7		
Gate-Drain Charge	Q _{gd}			3.0		
Reverse Recovery Chrage	Q _{rr}	I _F =-20A, di/dt=100A/us		8.2		
Reverse Recovery Time	t _{rr}			20.2		
Turn-on Delay Time	t _{D(on)}					ns



Typical Performance Characteristics

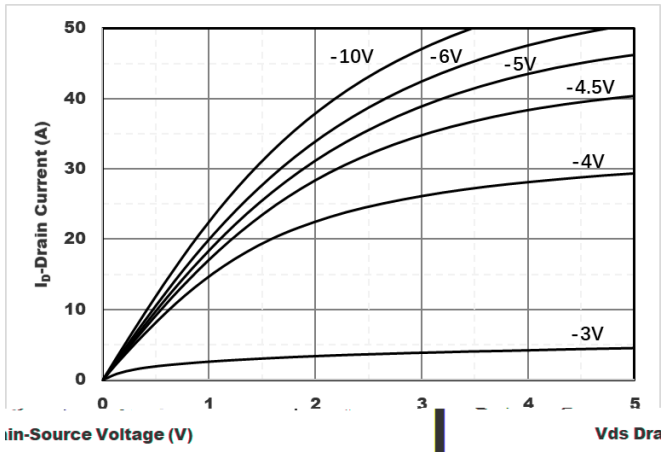


Figure1. Output Characteristics

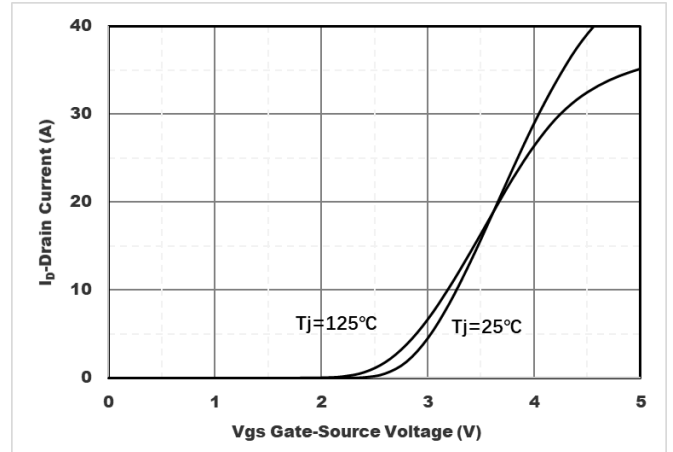


Figure2. Transfer Characteristics

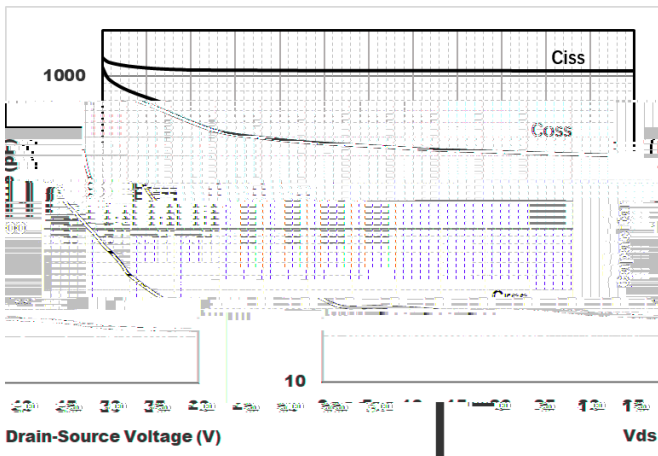


Figure3. Capacitance Characteristics

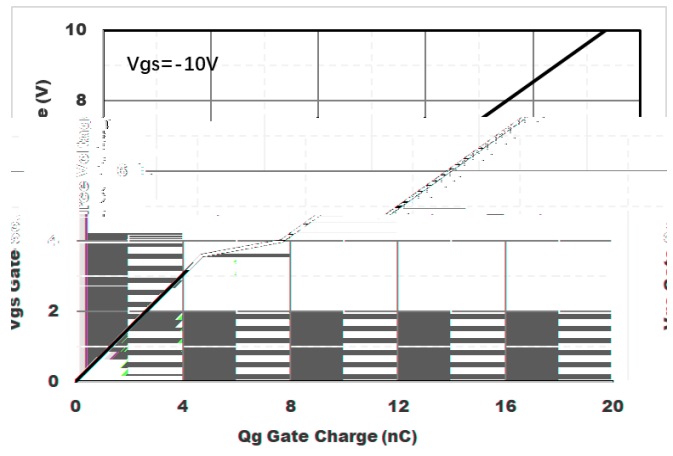


Figure4. Gate Charge

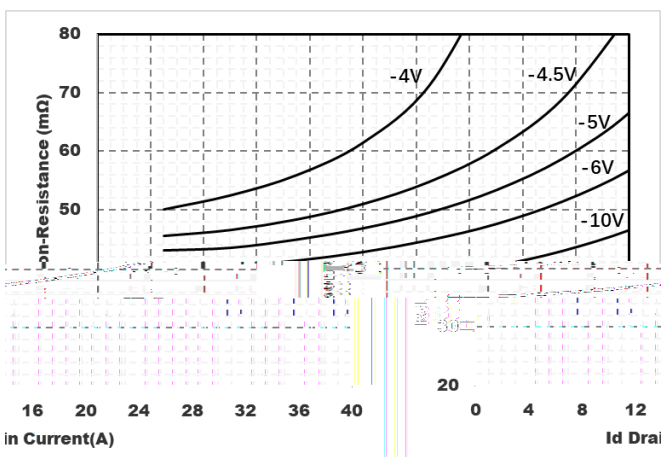


Figure5. : On-Resistance vs. Gate to Source Voltage

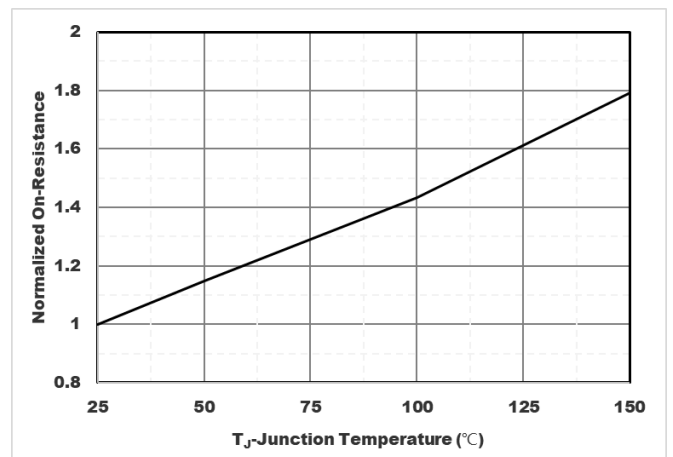


Figure6. Normalized On-Resistance

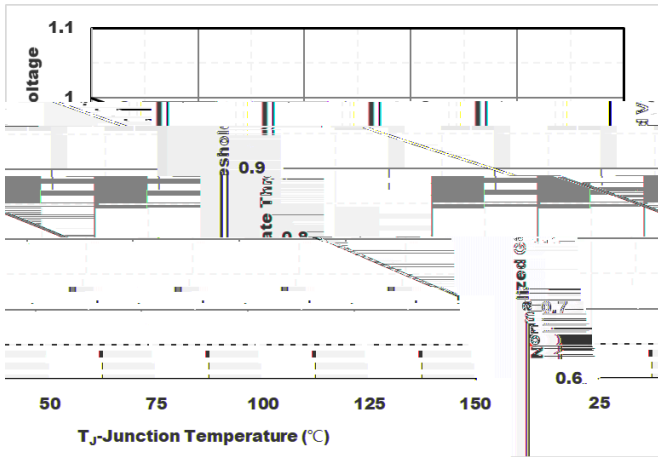


Figure7. Normalized Gate Threshold Voltage

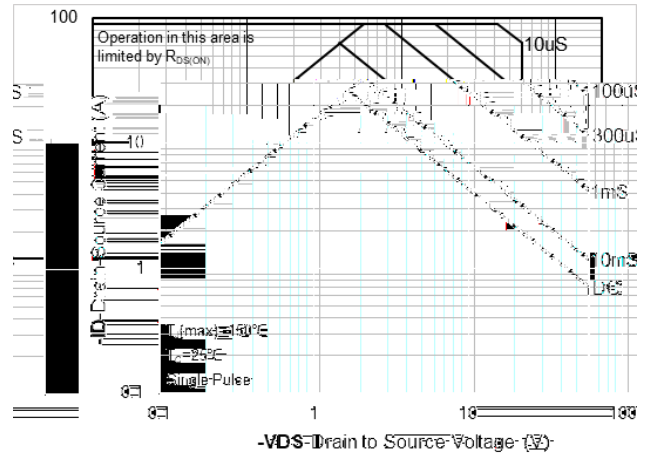


Figure8.Safe Operation Area

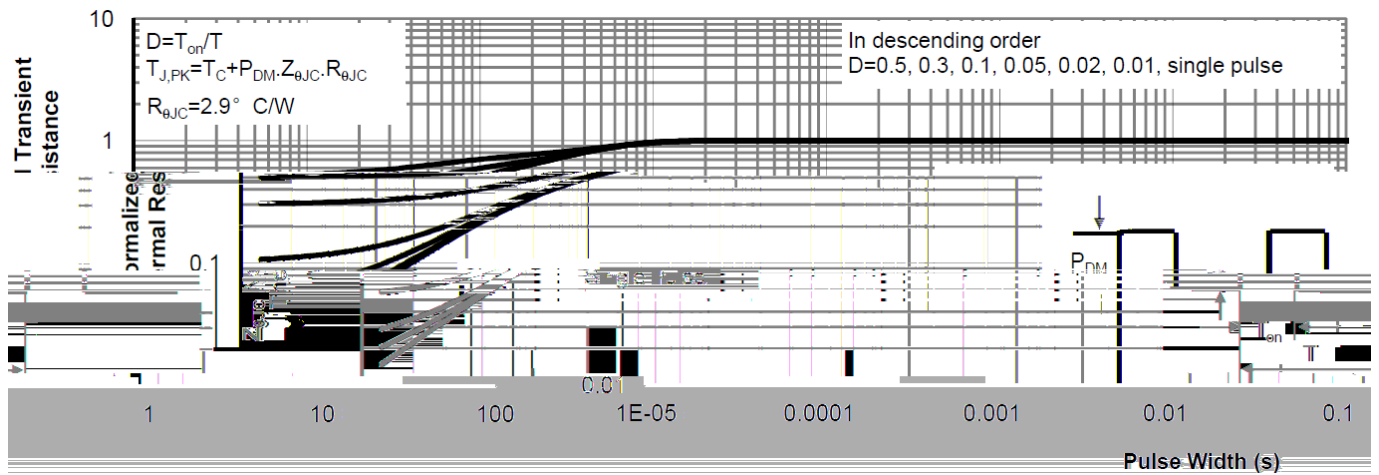
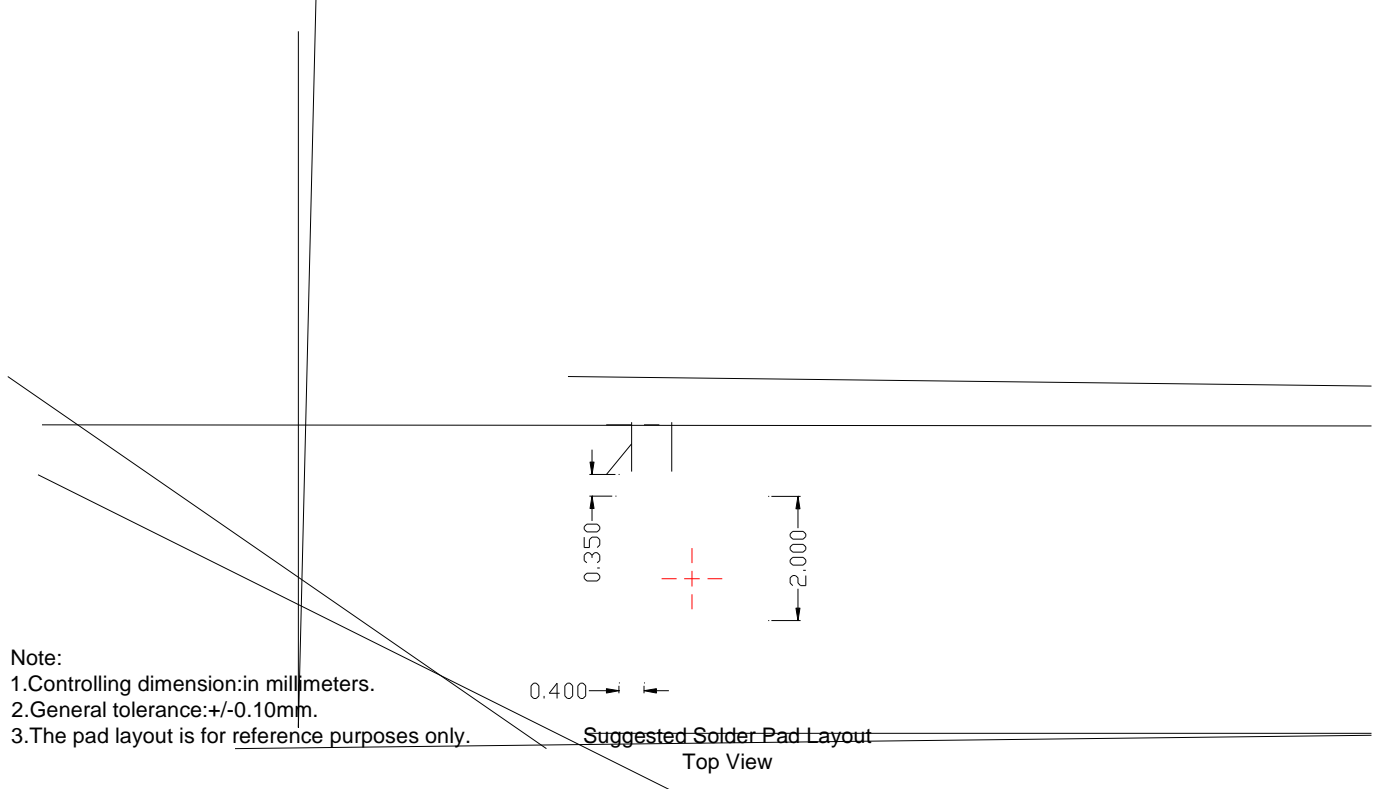


Figure9.Normalized Maximum Transient thermal impedance



DFN3333-8L Package information



Note:

- 1. Controlling dimension: in millimeters.
- 2. General tolerance: $\pm 0.10\text{mm}$.
- 3. The pad layout is for reference purposes only.



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 u7()T/F /P Ad d3LžC9h6eSTCžG&=A4BT4LcTn6hāYHBžNYfžNE&yf3F3aY4CžLp=EA