



N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	30V
I_D	5.6A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	24mohm
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	38mohm

General Description

Trench Power LV MOSFET technology
High density cell design for low $R_{DS(ON)}$
High Speed switching
Moisture Sensitivity Level 1
Epoxy Meets UL 94 V-0 Flammability Rating
Halogen Free

Applications

Battery protection
Load switch
Power management

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	30	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25$	I_D	5.6	A
	$T_A=70$		4.5	
Pulsed Drain Current ^A		I_{DM}	30	A
Total Power Dissipation	$T_A=25$	P_D	1.2	W
	$T_A=70$		0.8	W



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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_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30			V	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$			1	μA	
Gate-Body Leakage Current	I_{GSS1}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2.2	V	
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5.6A$		17	24	m	
		$V_{GS}=4.5V, I_D=5A$		26	38		
Diode Forward Voltage	V_{SD}	$I_S=5.6A, V_{GS}=0V$			1.2	V	
Dynamic Parameters							
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		526		pF	
Output Capacitance	C_{oss}				78		
Reverse Transfer Capacitance	C_{rss}				69		
Switching Parameters							

Total Gate Charge

Q_g

$V_{GS}=10$



Typical Performance Characteristics

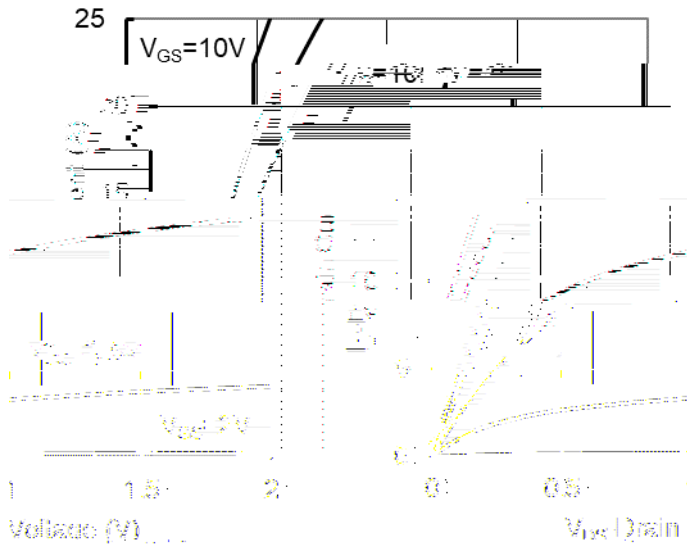


Figure1. Output Characteristics

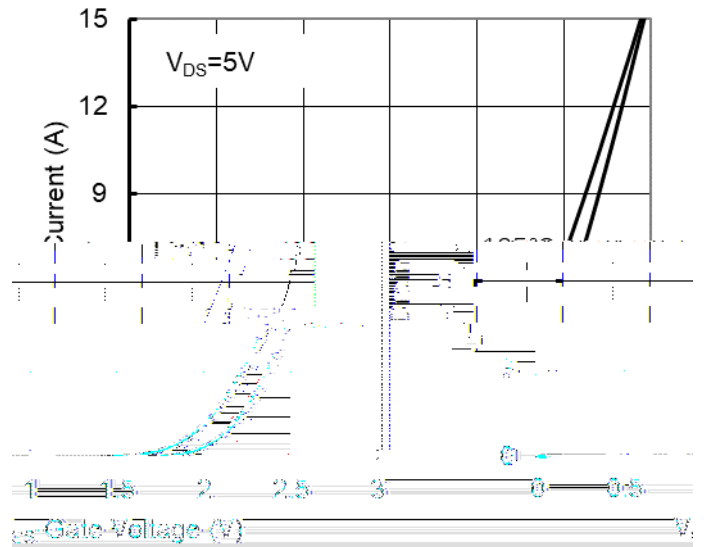


Figure2. Transfer Characteristics



Figure 3: On-Resistance vs. Drain Current and Gate Voltage

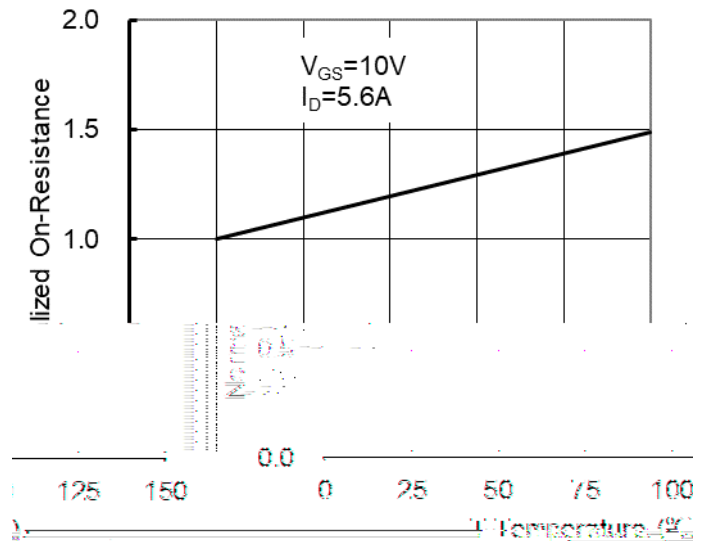
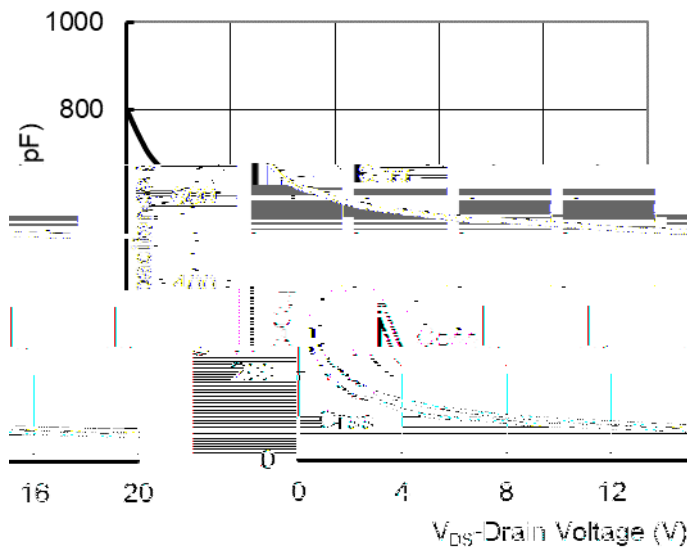


Figure 4: On-Resistance vs. Junction Temperature



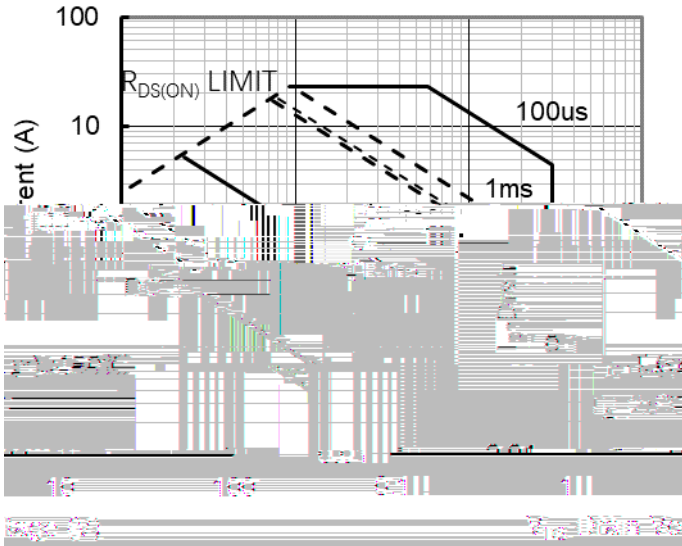


Figure7. Safe Operation Area

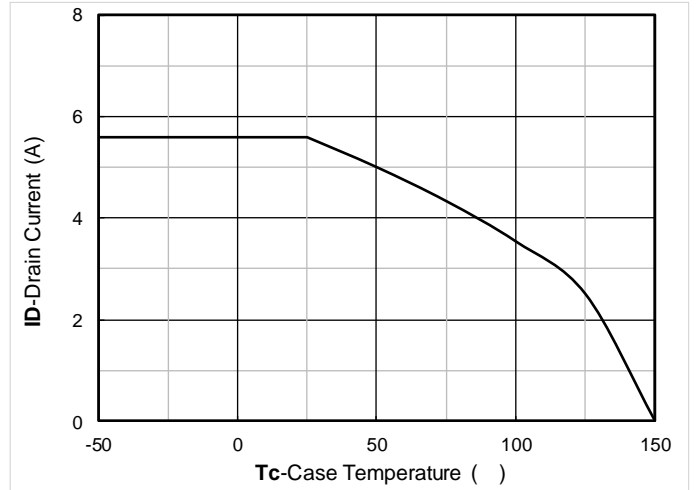


Figure8. Maximum Continuous Drain Current vs Ambient Temperature

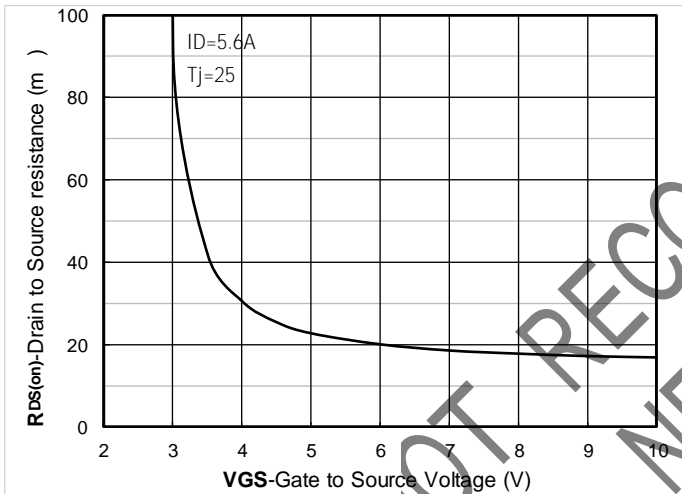


Figure 9. On-Resistance vs Gate to Source Voltage

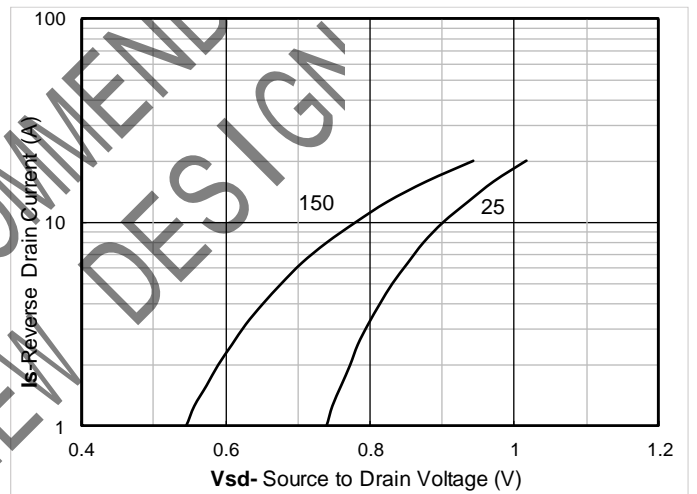


Figure 10. Forward characteristics of reverse diode

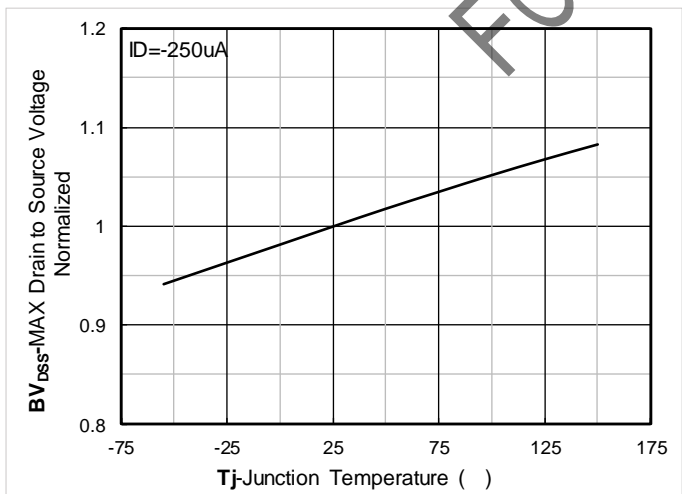


Figure 11. Normalized breakdown voltage

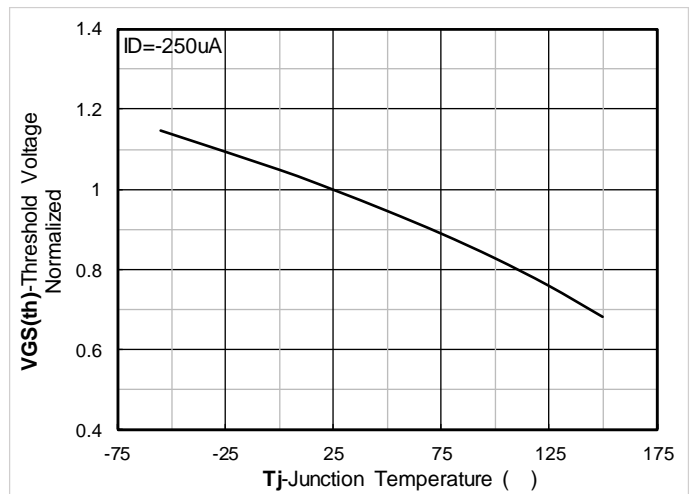


Figure 12. Normalized Threshold voltage

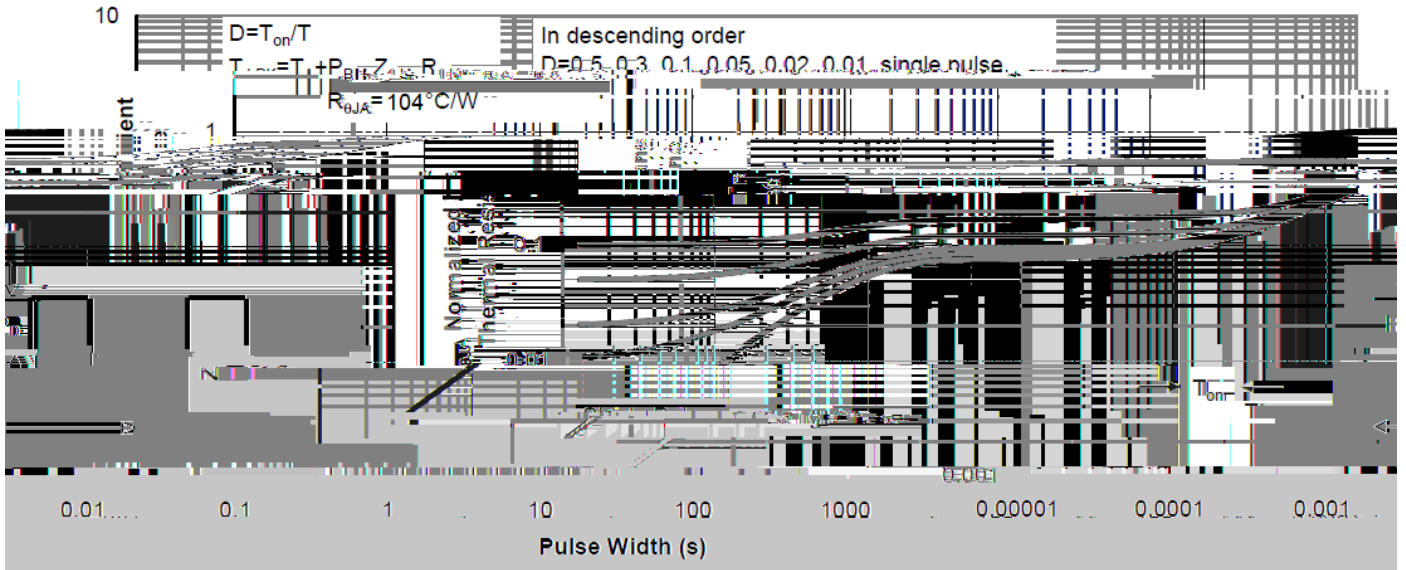


Figure13. Normalized Maximum Transient Thermal Impedance

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