P-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	-60 V
I_D	-13 A
$R_{DS(ON)}$(at V_{GS}=-10V)	110 m
$R_{DS(ON)}$(at V_{GS}=-4.5V)	135 m

100% EAS Tested
100% V_{DS} Tested

General Description

Trench Power LV MOSFET technology
Excellent package for heat dissipation
High density cell design for low $R_{DS(ON)}$
Moisture Sensitivity Level 1
UL 94 V-0 Flammability Rating
alogen Free

Applications

Power switching application
Uninterruptible power supply
DC-DC convertor

Absolute Maximum Ratings (T_A=25 unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	-60	V
Gate-source Voltage		V_{GS}	±20	V
Drain Current	T_A=25℃	I_D	-3	A
	T_A=100℃		-2.1	
	T_C=25℃		-13	
	T_C =100℃		-8.2	
Pulsed Drain Current [A]		I_{DM}	-30	A
Avalanche energy [B]		EAS	25	mJ
Total Power Dissipation [C]	T_A=25℃	P_D	2.5	W
	T_A=100℃		1.25	

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=-	-60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-60V, V_{GS}=0V	-	-	-1	
		V_{DS}=-60V, V_{GS}=0V, Tj=175℃	-	-	-100	
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	-	-	±100	nA
Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-	-1.2	-1.7	-2.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-13A	-	85	110	
		V_{GS}=-4.5V, I_D=-4A	-	96	135	
Diode Forward Voltage	V_{SD}	I				

Typical Electrical and Thermal Characteristics Diagrams

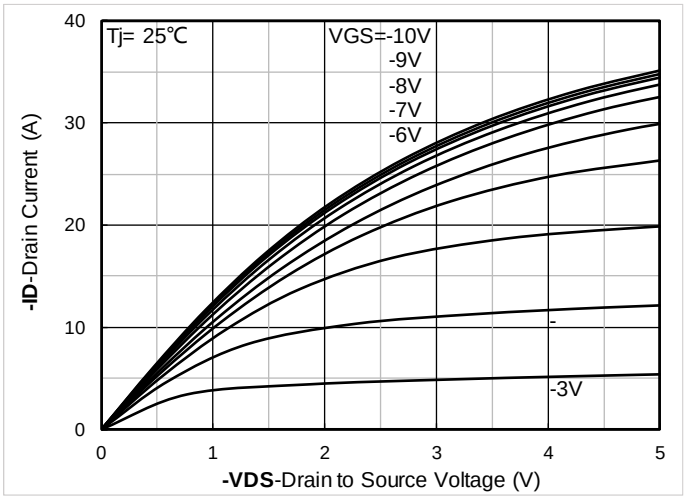


Figure 1. Output Characteristics

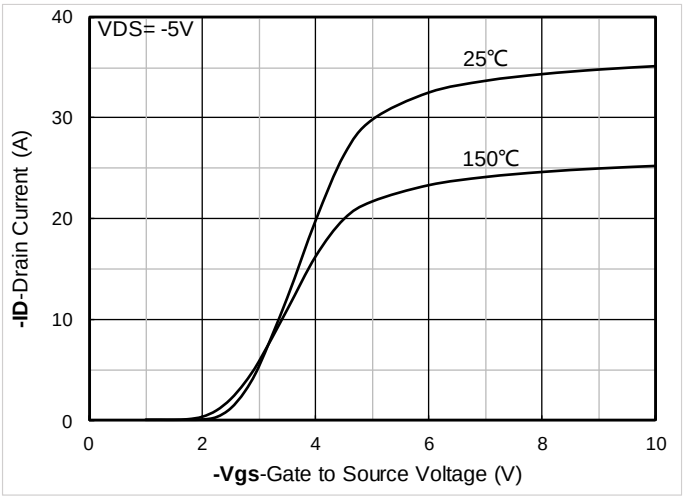


Figure 2. Transfer Characteristics

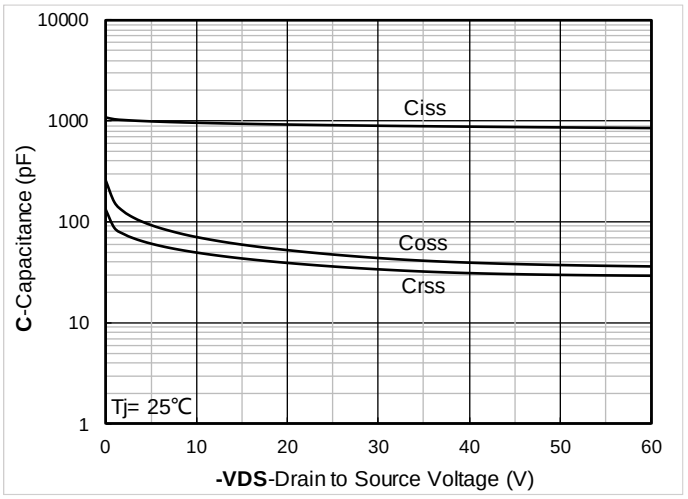


Figure 3. Capacitance Characteristics

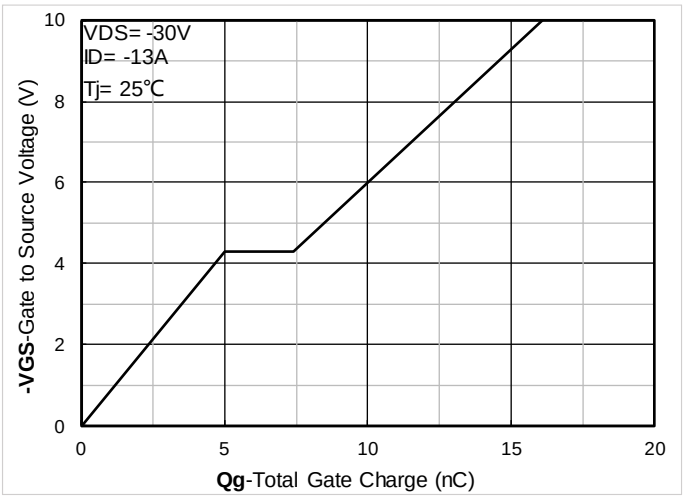


Figure 4. Gate Charge

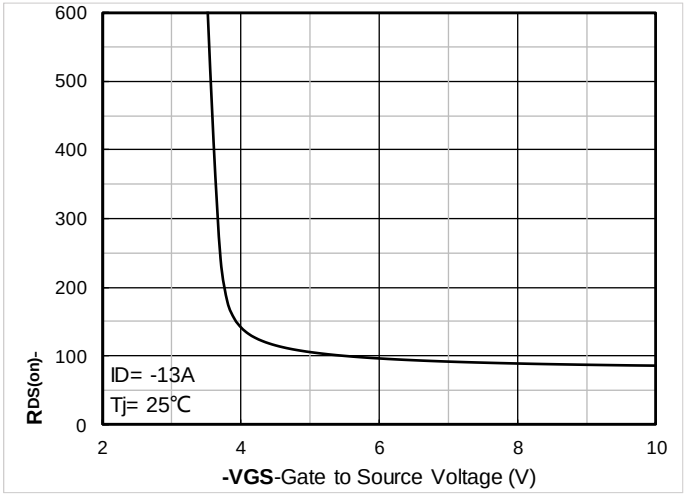


Figure 5. On-Resistance vs Gate to Source Voltage

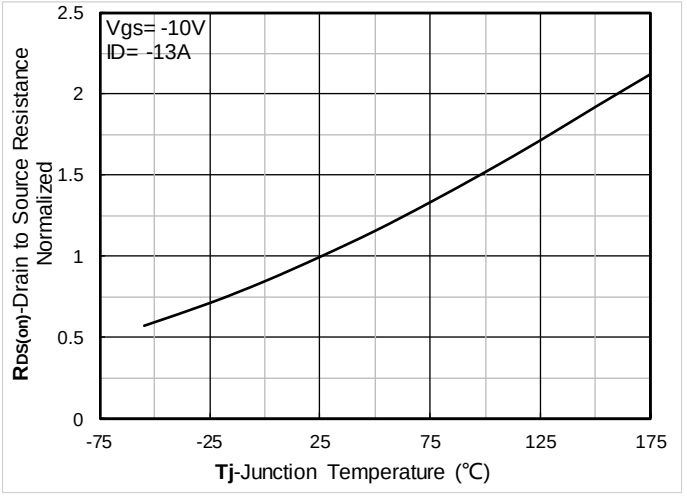


Figure 6. Normalized On-Resistance

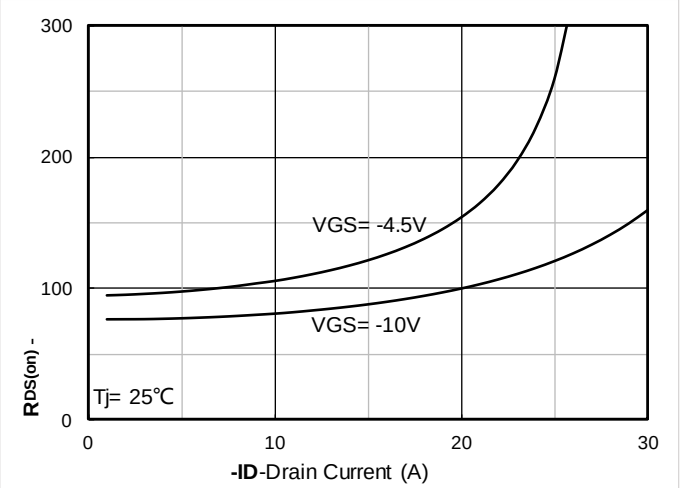


Figure 7. $R_{DS(on)}$ VS Drain Current

Figure 8. Forward characteristics of reverse diode

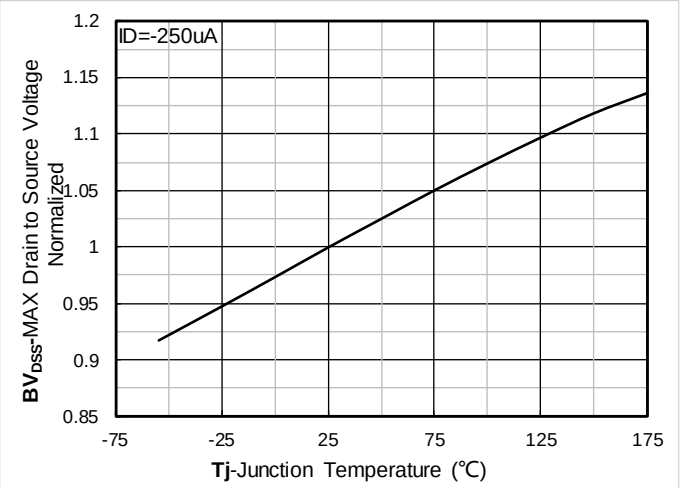


Figure 9. Normalized breakdown voltage

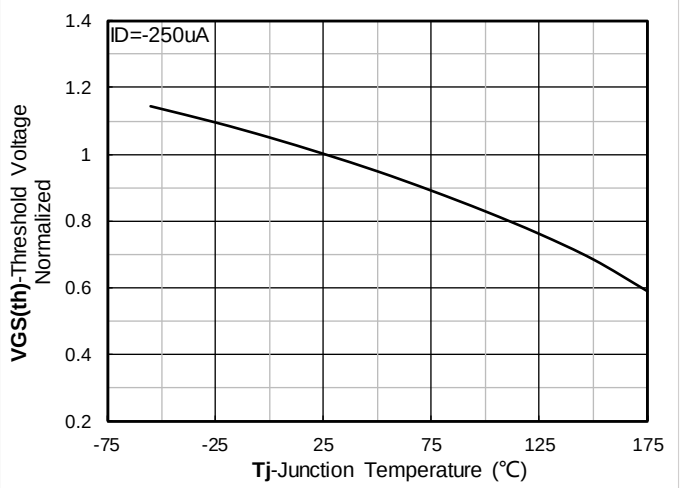
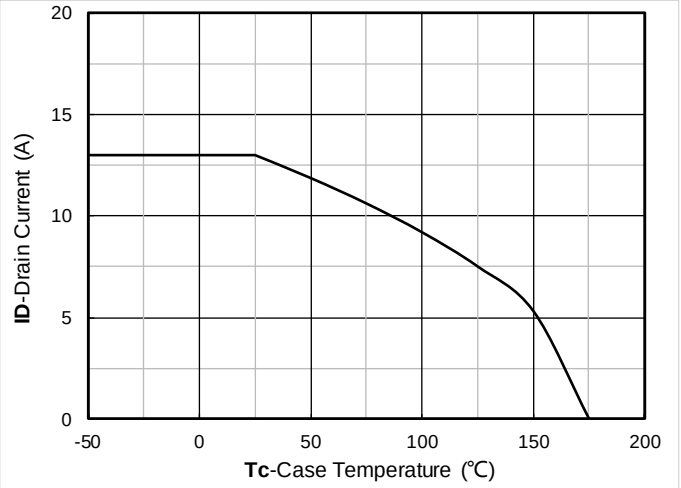
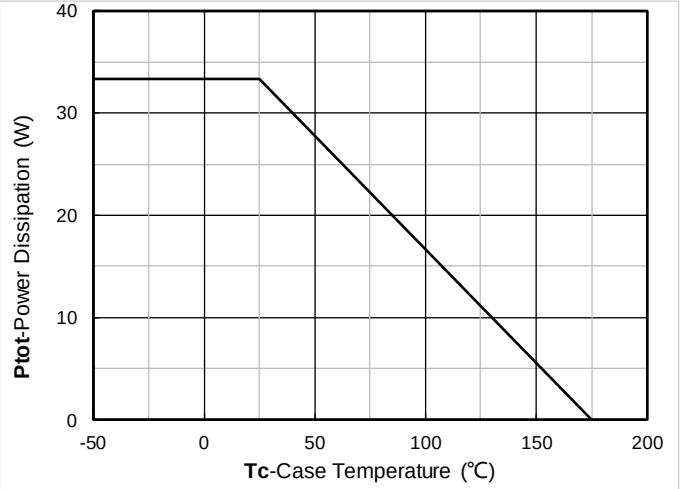
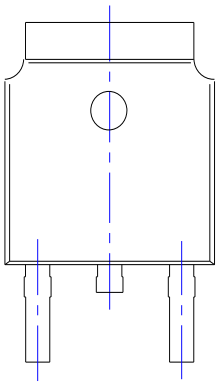


Figure 10. Normalized Threshold voltage





TO-252-B Package information

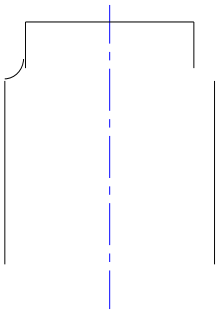


TOP VIEW



SIDE VIEW

DIMENSIONS					
SYMBOL	INCHES				
	MIN.	NOM.			
A1	0.000				
A2	0.087	0.091			
A3	0.035	0.039			
b	0.026	0.030			
c	0.018	0.020			
D	0.256	0.260			
D1					
D2	0.181	0.189			
E	0.390	0.398			
E1	0.236	0.240			



BOTTOM VIEW

SUGGESTED SOLDER PAD LAYOUT

NOTE:
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

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