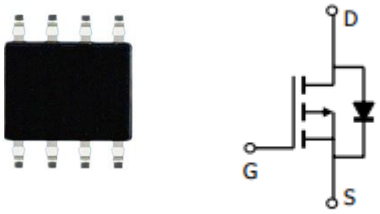
Description

This P-channel MOSFET s use advanced trench technology and design to provide excellent RDS(on) with low gate charge. It can be used in a wide variety of applications.

Features

BVDSS	RDSON	ID
-30V	34MΩ	-7A

1) Low gate charge.
2) Green device available.
3) Advanced high cell denity trench technology for ultra RDS(ON)
4) Excellent package for good heat dissipation.



SOP-8

Absolute Maximum Ratings Tc=25℃,unless otherwise noted

Symbol	Parameter	Ratings	Units
VDS	Drain-Source Voltage	-30	V
VGS	Gate-Source Voltage	±20	V
ID	Continuous Drain Current-1	-7	A
	Continuous Drain Current-T=100℃	-4.6	
	Pulsed Drain Current2	-40	
EAS	Single Pulse Avalanche Energy3	—	mJ
PD	Power Dissipation4	3.1	W
TJ, TSTG	Operating and Storage Junction Temperature Range	-55 to 150	℃

Thermal Characteristics

Symbol	Parameter	Ratings	Units
$R_{\theta JC}$	Thermal Resistance ,Junction to Case1	40	℃/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient1	75	

Package Marking and Ordering Information

Part NO.	Marking	Package
KSMP4449	KSMP4449	SOP-8

Electrical Characteristics T_C=25℃ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{DS}=0V,I_D=250μA	-30	—	—	v
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=0V, V_{DS}=32V	—	—	-1	μA
I_{GSS}	Gate-Source Leakage Current	V_{DS}=±20V, V_{DS}=0A	—	—	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{DS}=VDS, I_D=250μA	-1	-2	-3	V
$R_{DS(ON)}$	Drain-Source On Resistance[2]	V_{DS}=10V,I_D=6A	—	27	34	MΩ
		V_{DS}=2.5V,I_D=5A	—	38	—	---
G_{FS}	Forward Transconductance	V_{DS}=5V,I_D=12A	—	15	—	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V,V_{GS}=0V, f=1MHz	—	980	1225	pF
C_{oss}	Output Capacitance		—	150	—	
C_{rss}	Reverse Transfer Capacitance		—	115	—	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=20V, V_{GS}=10V,R_{GEN}=3.3Ω	—	7.7	—	ns
t_r	Rise Time		—	6	—	ns
$t_{d(off)}$	Turn-Off Delay Time		—	20	—	ns
t_f	Fall Time		—	7	—	ns
Q_g	Total Gate Charge	V_{GS}=4.5V, V_{DS}=20V, I_D=6A	—	18.7	24	nC
Q_{gs}	Gate-SourceCharge		—	9.6	—	nC
Q_{gd}	Gate-Drain “Miller” Charge		—	3.2	—	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode ForwardVoltage[2]	V_{GS}=0V,I_S =1A	—	-0.77	-1	V
t_{rr}	Reverse Recovery Time	I_F=7A,di/dt=100A/μS	—	21	26	ns
Q_{rr}	Reverse Recovery Charge		—	13	—	nC

Notes:

1. The data tested by surface mounted on a 1 inch² FR-4 board 2OZ copper.
2. The data tested by pulse width≤300us,duty cycle≤2%
3. The EAS data shows Max.rating.The test condition is V_{DD}=25v,V_{GS}=10V,L=0.1mH,i_{AS}=17.8A
4. The power dissipation is limited by 150℃ junction temperature.

Typical Characteristics T_J=25℃ unless otherwise noted

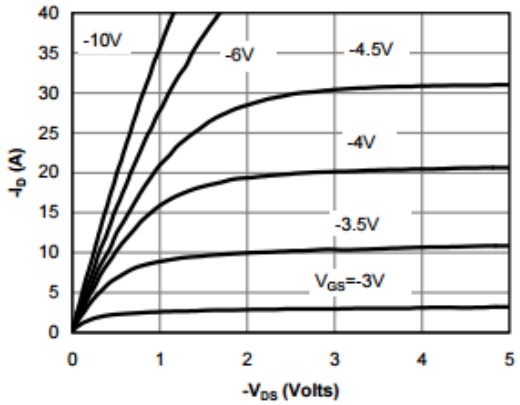


Figure 1. On-Region Characteristics

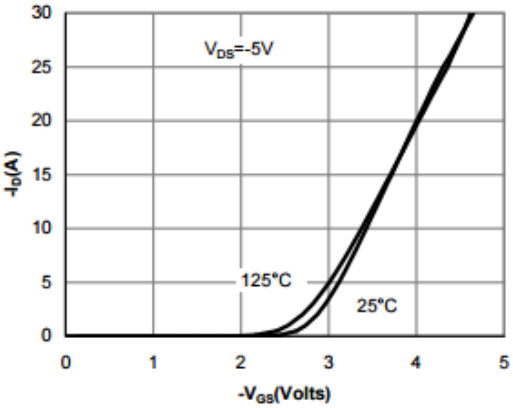


Figure 2. Transfer Characteristics

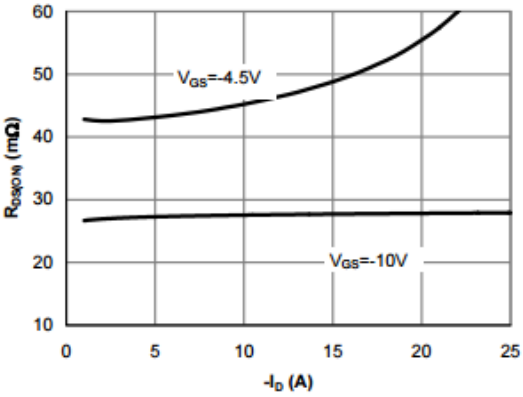


Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

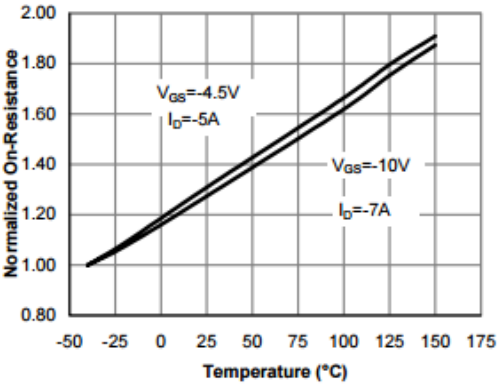


Figure 4: On-Resistance vs. Junction Temperature

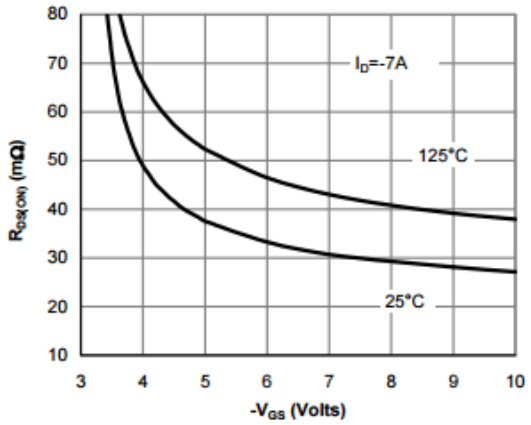


Figure 5: On-Resistance vs. Gate-Source Voltage

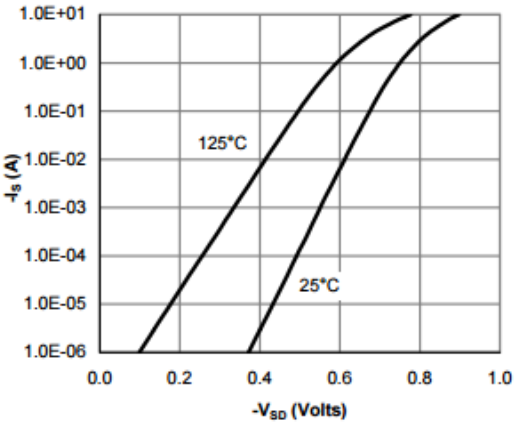


Figure 6: Body-Diode Characteristics

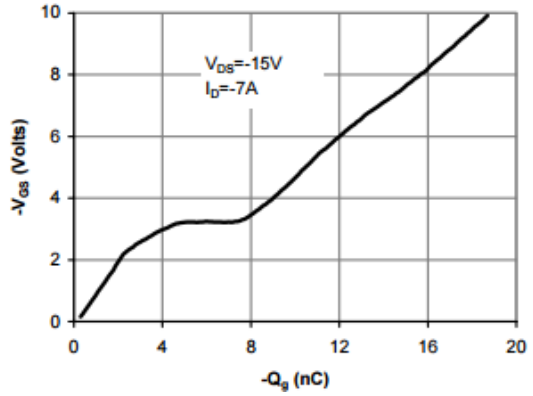


Figure 7: Gate-Charge Characteristics

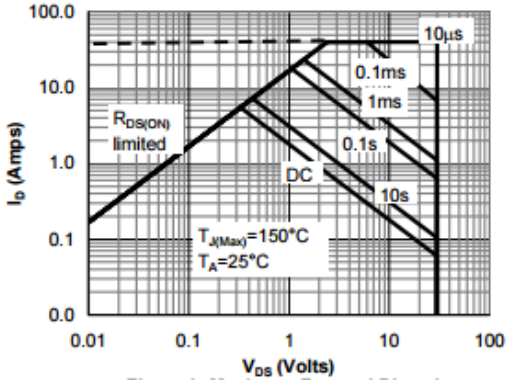


Figure 8.Maximum Safe Operating Area

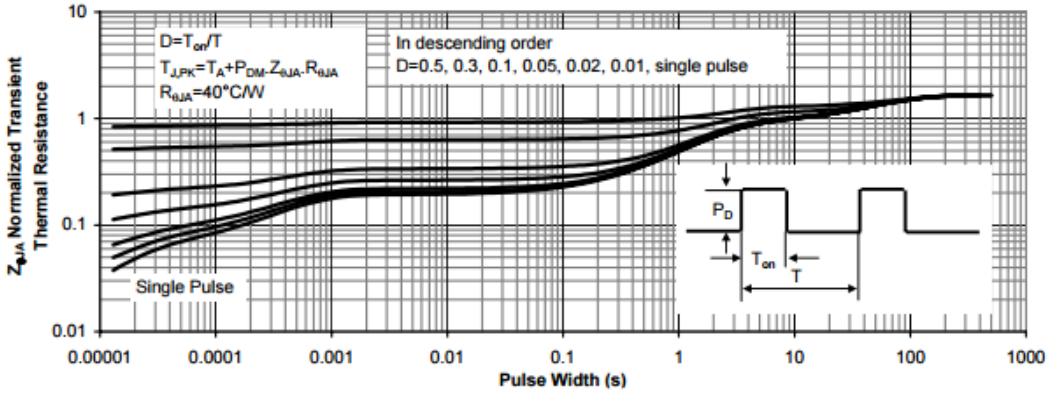


Figure 9: Normalized Maximum Transient Thermal Impedance