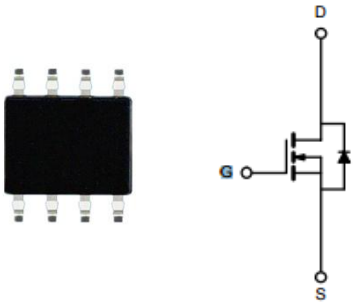
Description

This N-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
200V	0.08Ω	4.0A

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	200	V
VGS	Gate-Source Voltage	±20	V
ID	Continuous Drain Current-1	4.0	A
	Continuous Drain Current-T=100℃	3.2	
	Pulsed Drain Current2	40	
EAS	Single Pulse Avalanche Energy3	—	mJ
PD	Power Dissipation4	—	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	33	℃/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient1	65	

Package Marking and Ordering Information

Part NO.	Marking	Package
KSMN4490	KSMN4490	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	200	—	—	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	2.0	—	—	V
$R_{DS(ON)}$	Drain-Source On Resistance[2]	V_{DS}=10V,I_D=6A	—	0.065	0.080	Ω
		V_{DS}=2.5V,I_D=5A	—	0.073	—	---
G_{FS}	Forward Transconductance	V_{DS}=5V,I_D=12A	—	19	—	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V,V_{GS}=0V, f=1MHz	—	—	—	pF
C_{oss}	Output Capacitance		—	—	—	
C_{rss}	Reverse Transfer Capacitance		—	—	—	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=20V, V_{GS}=10V,R_{GEN}=3.3Ω	—	14	20	ns
t_r	Rise Time		—	20	30	ns
$t_{d(off)}$	Turn-Off Delay Time		—	32	50	ns
t_f	Fall Time		—	25	35	ns
Q_g	Total Gate Charge	V_{GS}=4.5V, V_{DS}=20V, I_D=6A	—	34	42	nC
Q_{gs}	Gate-SourceCharge		—	7.5	—	nC
Q_{gd}	Gate-Drain “Miller” Charge		—	12	—	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode ForwardVoltage[2]	V_{GS}=0V,I_S =1A	—	0.75	1.2	V
t_{rr}	Reverse Recovery Time	I_F=7A,di/dt=100A/μS	—	70	100	ns
Q_{rr}	Reverse Recovery Charge		—	—	—	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

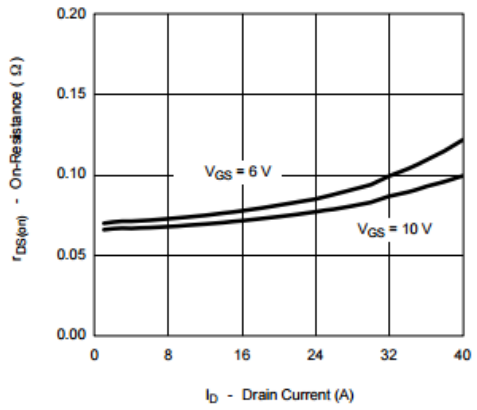


Figure 1.On-Resistance vs. Drain Current

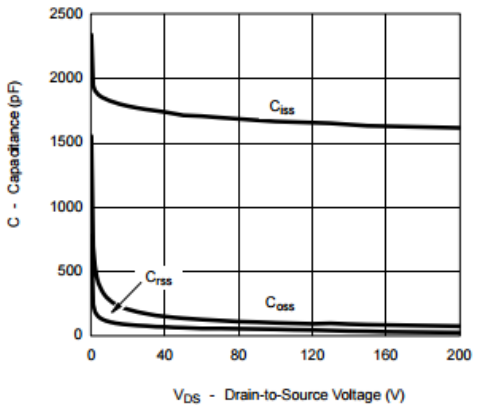


Figure 2. Capacitance

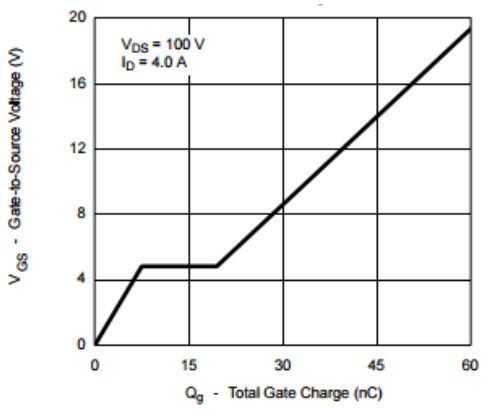


Figure3.Gate Charge

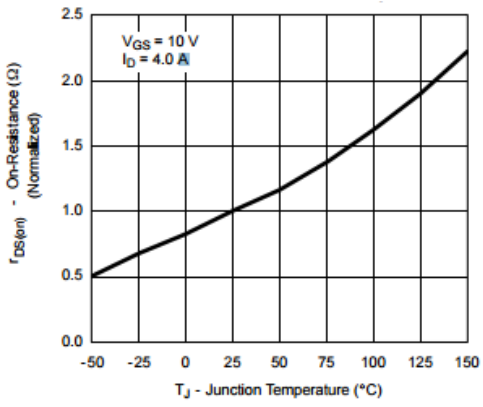


Figure4.On-Resistance vs. Junction Temperature

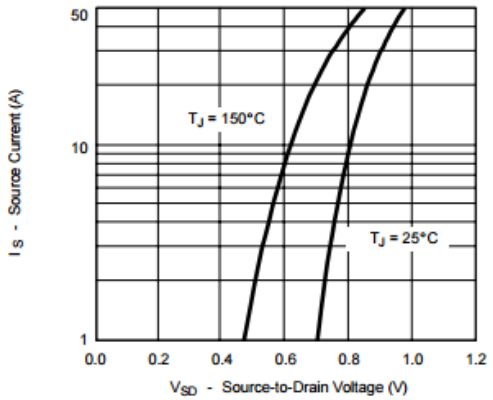


Figure 5:Source-Drain Diode Forward Voltage

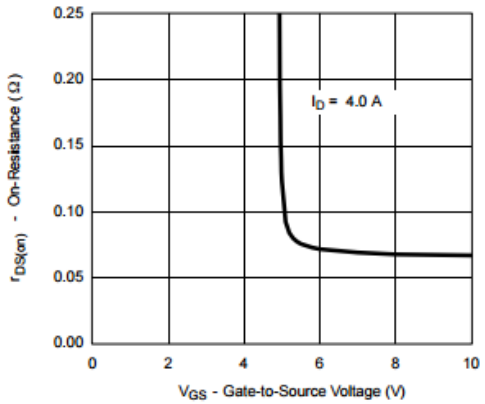


Figure 6: On-Resistance vs. Gate-to-Source Voltage

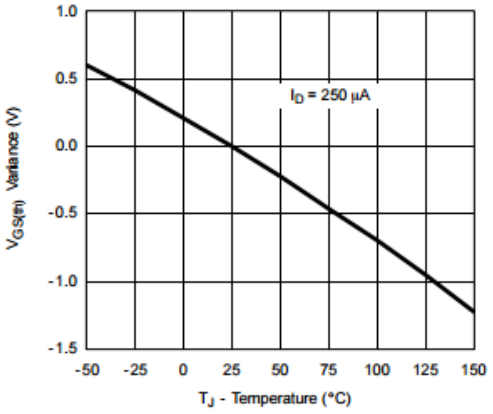


Figure 7: Threshold Voltage

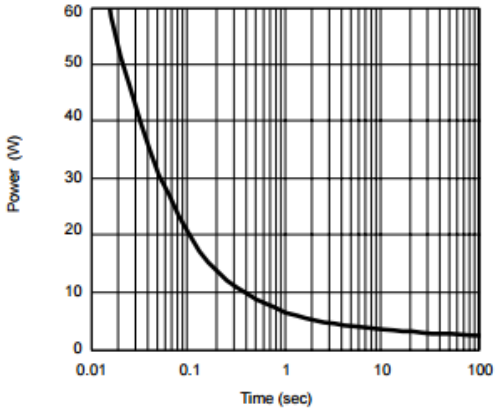


Figure 8.Avalanche Current vs. Time

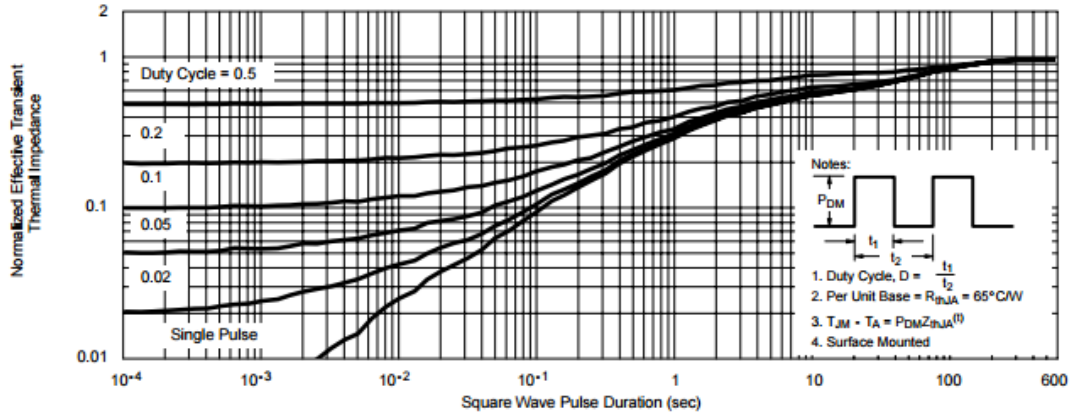


Figure 9: Normalized Maximum Transient Thermal Impedance