KERSMI ELECTRONIC CO.,LTD. **-100V P-channel MOSFETS**

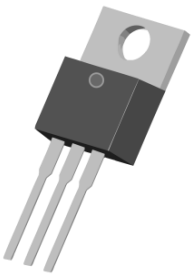
Description

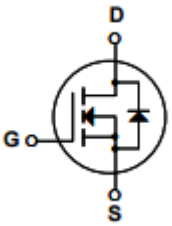
This P-channel MOSFETS use advanced trench technology and design to provide excellent RDS(on) with low gate charge. It can be used in a wide variety of applications.

Features

BVDSS	RDSON	ID
-100V	0.3Ω	-12A

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.





TO-220

Absolute Maximum Ratings T_C=25℃,unless otherwise noted

Symbol	Parameter	Ratings	Units
VDS	Drain-Source Voltage	-100	V
VGS	Gate-Source Voltage	±20	V
ID	Continuous Drain Current-1	-12	A
	Continuous Drain Current-T=100℃	-8.2	
	Pulsed Drain Current2	-48	
EAS	Single Pulse Avalanche Energy3	400	mJ
PD	Power Dissipation4	88	W
TJ, TSTG	Operating and Storage Junction Temperature Range	-55 to +175	℃

Thermal Characteristics

Symbol	Parameter	Ratings	Units
RθJC	Thermal Resistance ,Junction to Case1	62	℃/W
RθJA	Thermal Resistance, Junction to Ambient1	1.7	

Package Marking and Ordering Information

Part NO.	Marking	Package
KSM9530	KSM9530	TO-220

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	-100	—	—	v
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=0V, V_{DS}=32V	—	—	-100	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	—	-4.0	V
$R_{DS(ON)}$	Drain-Source On Resistance[2]	V_{DS}=10V,I_D=6A	—	—	0.3	Ω
		V_{DS}=2.5V,I_D=5A	—	—	—	---
G_{FS}	Forward Transconductance	V_{DS}=5V,I_D=12A	3.7	—	—	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V,V_{GS}=0V, f=1MHz	—	860	—	pF
C_{oss}	Output Capacitance		—	340	—	
C_{rss}	Reverse Transfer Capacitance		—	93	—	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=20V, V_{GS}=10V,R_{GEN}=3.3Ω	—	12	—	ns
t_r	Rise Time		—	52	—	ns
$t_{d(off)}$	Turn-Off Delay Time		—	31	—	ns
t_f	Fall Time		—	39	—	ns
Q_g	Total Gate Charge	V_{GS}=4.5V, V_{DS}=20V, I_D=6A	—	—	38	nC
Q_{gs}	Gate-SourceCharge		—	—	6.8	nC
Q_{gd}	Gate-Drain “Miller” Charge		—	—	21	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode ForwardVoltage[2]	V_{GS}=0V,I_S =1A	—	—	-6.3	V
t_{rr}	Reverse Recovery Time	I_F=7A,di/dt=100A/μS	—	120	240	ns
Q_{rr}	Reverse Recovery Charge		—	0.46	0.92	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

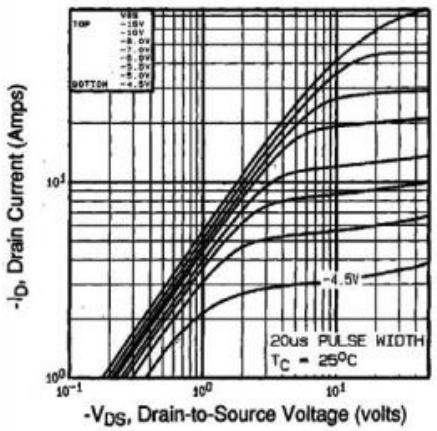


Fig. 1 Typical Output Characteristics, TC = 25 °

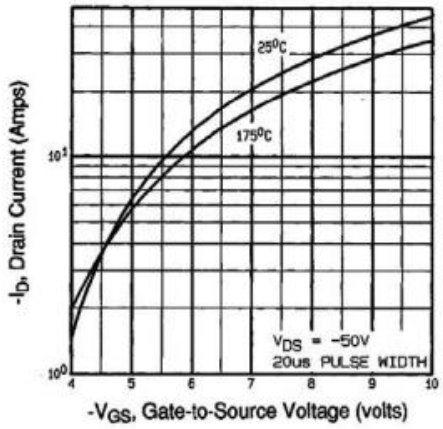


Fig. 2 Typical Transfer Characteristics

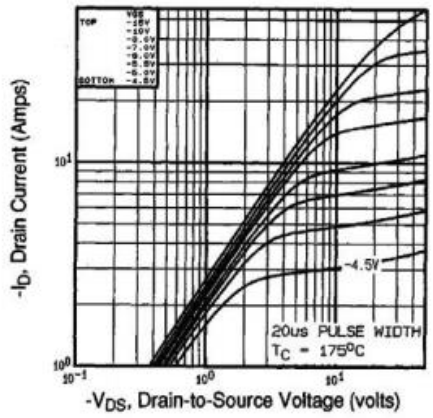


Fig. 3 Typical Output Characteristics, TC = 150 °C

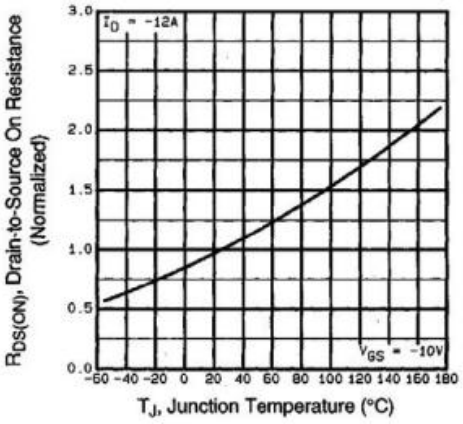


Fig. 4 - Normalized On-Resistance vs. Temperature

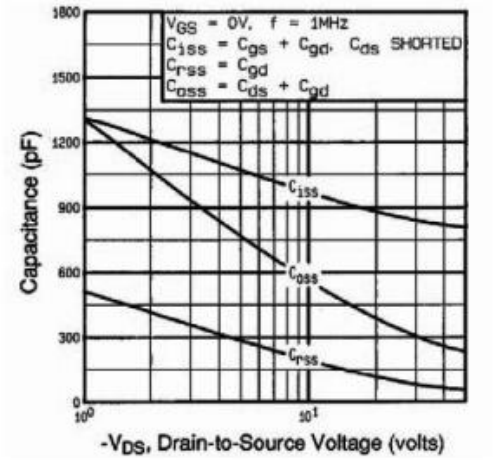


Fig. 5 - Typical Capacitance vs. Drain-to-Source Voltage

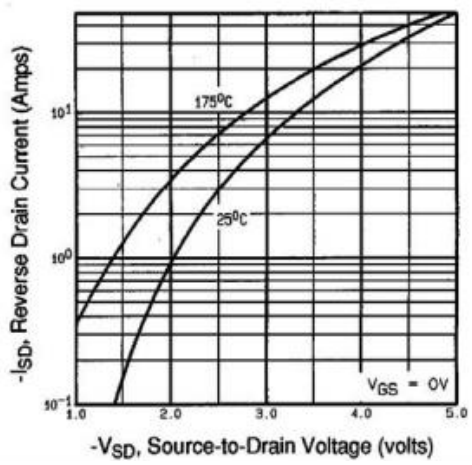


Fig. 6 - Typical Source-Drain Diode Forward Voltage

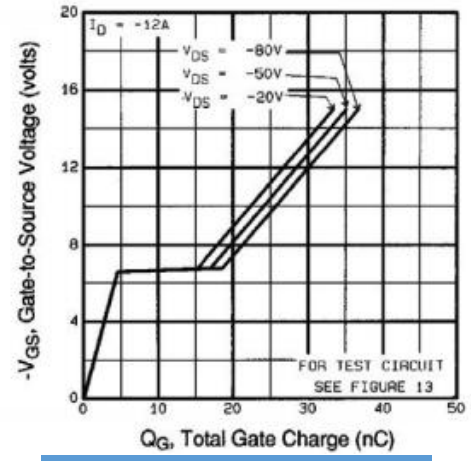


Fig. 7 - Typical Gate Charge vs. Gate-to-Source Voltage

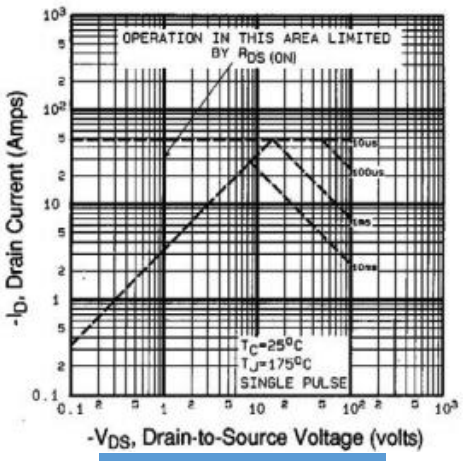


Fig. 8 - Maximum Safe Operating Area

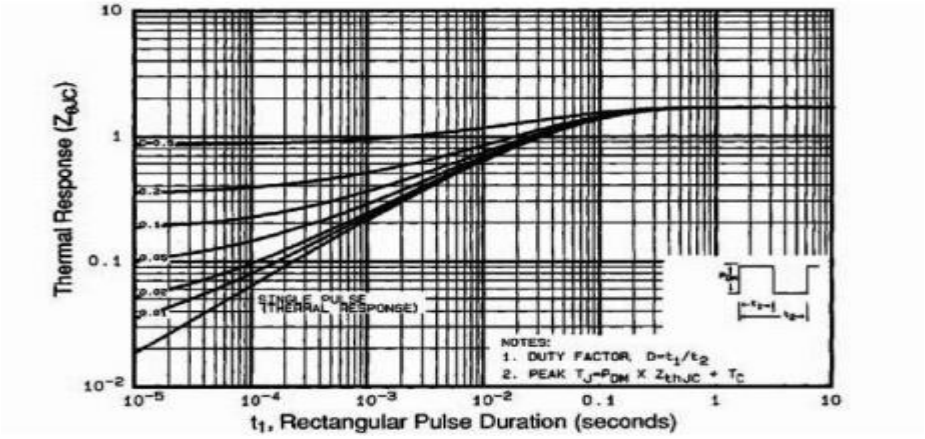


Fig. 9 - Maximum Effective Transient Thermal Impedance, Junction-to-Case