

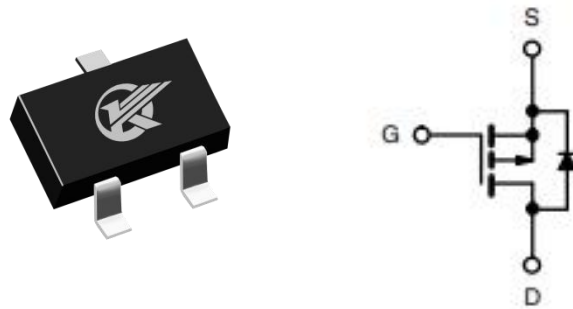
Description

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	RDS(on)	ID
-30V	0.088 Ω	-2.7A

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



SOT-23

Absolute Maximum Ratings $T_C=25^{\circ}\text{C}$, unless otherwise noted

Symbol	Parameter	Ratings	Units
VDS	Drain-Source Voltage	-30	V
VGS	Gate-Source Voltage	± 20	V
ID	Continuous Drain Current-1	-3.5	A
	Continuous Drain Current- $T=100^{\circ}\text{C}$	-2.8	
	Pulsed Drain Current ²	-2.7	
EAS	Single Pulse Avalanche Energy ³	-2.2	mJ
PD	Power Dissipation ⁴	1.8	W
TJ, TSTG	Operating and Storage Junction Temperature Range	260	$^{\circ}\text{C}$

Thermal Characteristics

Symbol	Parameter	Ratings	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case1	115	$^{\circ}\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient1	70	

Package Marking and Ordering Information

Part NO.	Marking	Package
<u>KSM2307</u>	KSM2307	SOT-23

Electrical Characteristics $T_c=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{DS} =0V, I _D =250μA	-30	—	—	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-31V, V _{GS} =-0V	—	—	-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} =V _{DS} , I _D =250μA	-1	—	-3	V
R _{DS(ON)}	Drain-Source On Resistance ²	V _{DS} =10V, I _D =6A	—	0.073	0.088	Ω
		V _{DS} =2.5V, I _D =5A	—	0.11	0.138	
G _{FS}	Forward Transconductance	V _{DS} =5V, I _D =12A	—	7	—	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	—	340	—	pF
C _{oss}	Output Capacitance		—	67	—	
C _{rss}	Reverse Transfer Capacitance		—	51	—	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =20V, V _{GS} =10V, R _{GEN} =3.3Ω	—	40	60	ns
t _r	Rise Time		—	40	60	ns
t _{d(off)}	Turn-Off Delay Time		—	20	40	ns
t _f	Fall Time	V _{GS} =4.5V, V _{DS} =20V, I _D =6A	—	19	30	ns
Q _g	Total Gate Charge		—	4.1	6.2	nC
Q _{gs}	Gate-Source Charge		—	1.3	—	nC
Q _{gd}	Gate-Drain “Miller” Charge		—	1.8	—	nC
Drain-Source Diode Characteristics						
V _{SD}	Source-Drain Diode ForwardVoltage ²	V _{GS} =0V, I _S =1A	—	-0.8	-1.2	V
t _{rr}	Reverse Recovery Time	I _F =7A, di/dt=100A/μS	—	17	30	ns
Q _{rr}	Reverse Recovery Charge		—	11	20	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 $\leq$ 300us,duty cycles $\leq$ 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 $^{\circ}C$ junction temperature.

Typical Characteristics $T_J=25^{\circ}C$ unless otherwise noted
