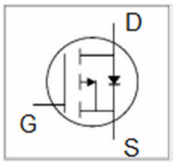
KGEY 金易半 Kingeavysemi

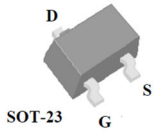
KE2302T0U-L

N-CHANNEL ENHANCEMENT MODE POWER MOSFET

- **Simple Drive Requirement**
- **Small Package Outline**
- **Surface Mount Device**
- **RoHS Compliant & Halogen-Free**



BVDSS	20V
RDS(ON)typ	43mΩ
ID	3A



Description

KE2302 is from Kingeavy innovated design and silicon process technology to achieve the lowest possible on- resistance and fast switching performance. It provides the designer with an extreme efficient device for use in a wide range of power applications.

Absolute Maximum Ratings@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±12	V
I_D@T_A=25℃	Drain Current, V_{GS} @ 10V	3	A
I_D@T_A=70℃	Drain Current, V_{GS} @ 10V	2	A
I_{DM}	Pulsed Drain Current2	10	A
P_D@T_A=25℃	Total Power Dissipation3	0.6	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	150	℃

Electrical Characteristics@T_j=25 oC(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=250uA	20	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	VGS=4.5V, ID=2.5A	-	43	56	mΩ
		VGS=2.5V, ID=2A	-	55	85	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	VDS=VGS, ID=250uA	0.4	0.65	1	V
g_{fs}	Forward Transconductance	VDS=5V, ID=-2A	4	-	-	S
I_{DSS}	Drain-Source Leakage Current	VDS=19V, VGS=0V	-	-	-1	uA
I_{GSS}	Gate-Source Leakage	VGS=±12V, VDS=0V	-	-	±100	nA
Q_g	Total Gate Charge	ID=2A VDS=10V VGS=4.5V	-	3.4	-	nC
Q_{gs}	Gate-Source Charge		-	0.6	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge		-	1.6	-	nC
$t_{d(on)}$	Turn-on Delay Time	VDS=10V ID=2A RG=6Ω VGS=4.5V,RL=2.8Ω	-	2	-	ns
t_r	Rise Time		-	10	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	8	-	ns
t_f	Fall Time		-	3	-	ns
C_{iss}	Input Capacitance	VGS=0V VDS=10V f=1.0MHz	-	270	-	pF
C_{oss}	Output Capacitance		-	35	-	pF
Crss	Reverse Transfer Capacitance		-	25	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage²	IS=2A, VGS=0V	-	-	1.2	V

Notes:

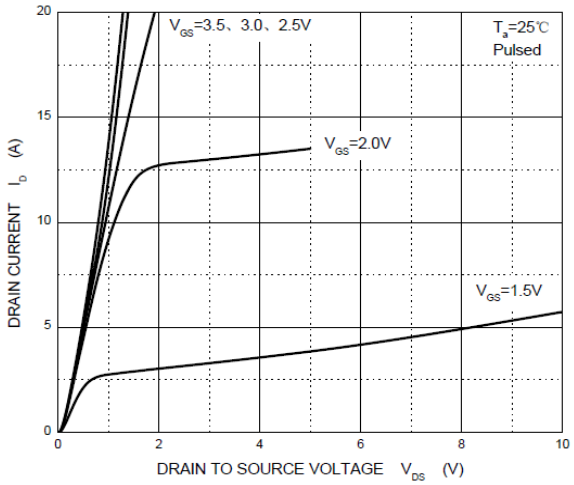
1.Pulse width limited by Max. junction temperature.

2.Pulse test

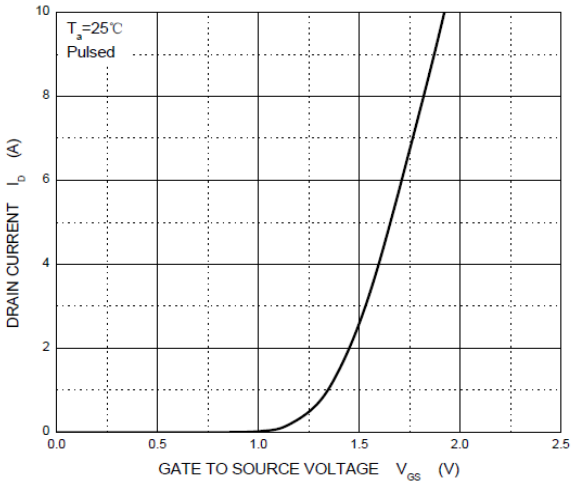
3.Surface mounted on 1 in^2 2oz copper pad of FR4 board, t ≤10sec ; 300°C/W when mounted on min. copper pad.

Typical Performance Characteristics

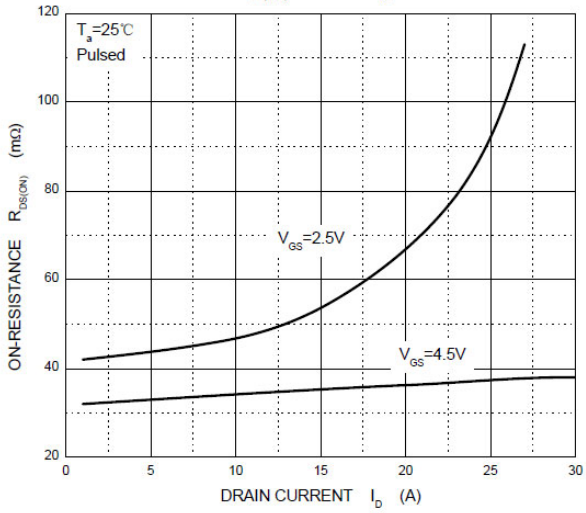
Output Characteristics



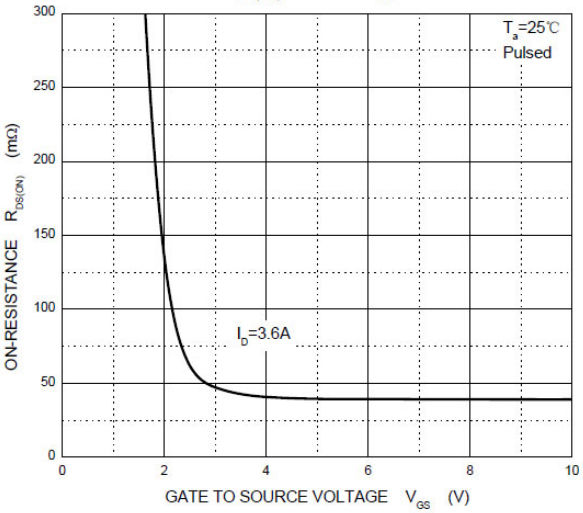
Transfer Characteristics



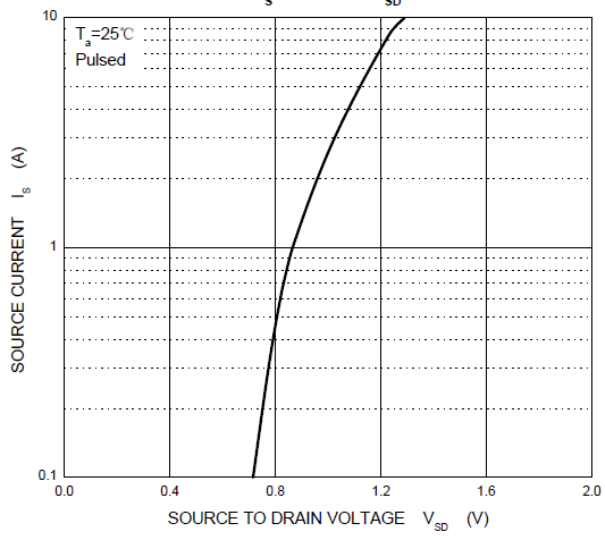
$R_{DS(ON)}$ — I_D



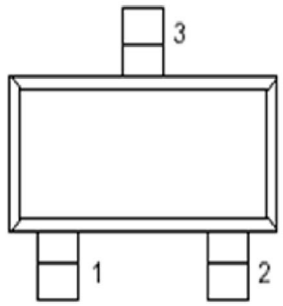
$R_{DS(ON)}$ — V_{GS}



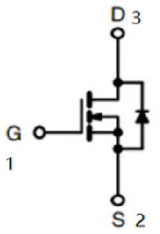
I_S — V_{SD}



Marking Information

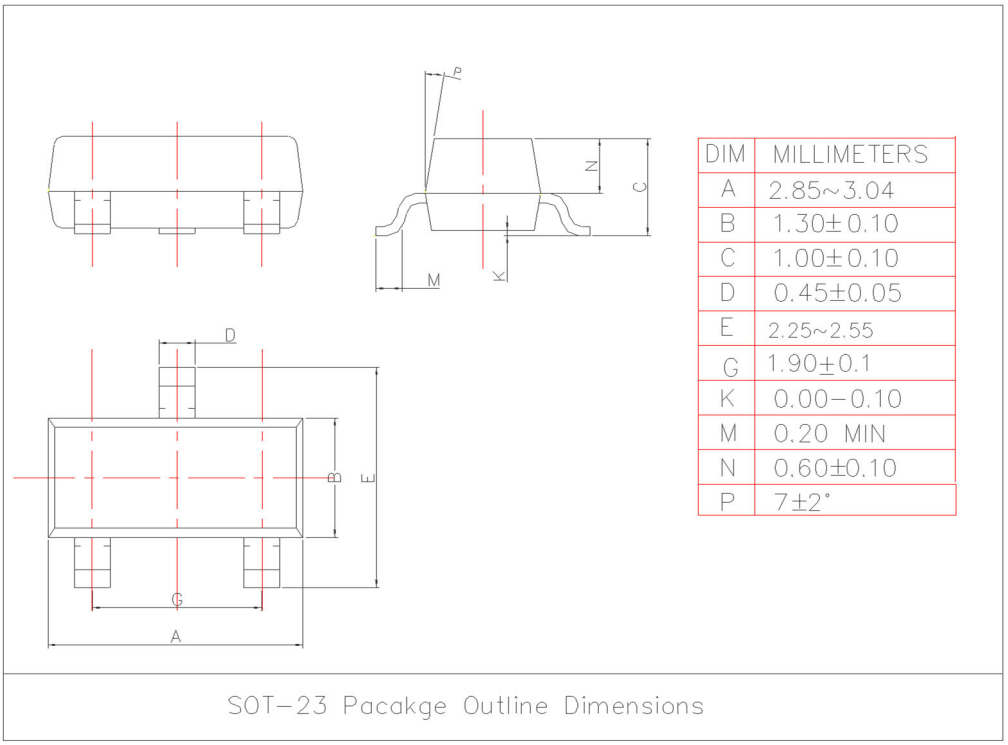


Top view



印字marking：A2SHB

Package Outline : SOT-23



DIM	MILLIMETERS
A	2.85~3.04
B	1.30±0.10
C	1.00±0.10
D	0.45±0.05
E	2.25~2.55
G	1.90±0.1
K	0.00−0.10
M	0.20 MIN
N	0.60±0.10
P	7±2°

SOT−23 Pacakge Outline Dimensions