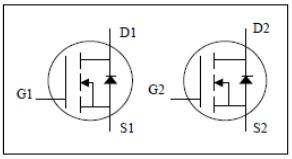
KGEY 金易半 Kingeavysemi

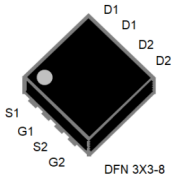
KE9206EAU

Dual N-CHANNEL
ENHANCEMENT MODE POWER

- Simple Drive Requirement
- Fast Switching Characteristic
- RoHS Compliant & Halogen-Free

BV_{DSS}	30V
$R_{DS(ON)typ}$	8.5mΩ





Description

KE9206 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	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Drain Current, V_{GS} @ 10V	25	A
I_D@T_C=100°C	Drain Current, V_{GS} @ 10V	15	A
I_D@T_A=25℃	Drain Current, V_{GS} @ 10V	12	A
I_D@T_A=70°C	Drain Current, V_{GS} @ 10V	9	A
I_{DM}	Pulsed Drain Current[1]	70	A
EAS	Single Pulsed Avalanche Energy[2]	40	mJ
P_D@T_A=25℃	Total Power Dissipation	2.5	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	0 to 150	℃

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-c	Maximum Thermal Resistance, Junction-case	8	℃/W
Rthj-a	Maximum Thermal Resistance, Junction-ambient[4]	40	℃/W

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=1mA	30	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[3]	V_{GS}=10V, I_D=10A	-	8.5	10.5	mΩ
		V_{GS}=4.5V, I_D=8A	-	12	16	mΩ
$V_{GS(th)}$	Gate Threshold Voltage[3]	V_{DS}=V_{GS}, I_D=250uA	1	1.4	2.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=30V, V_{GS}=0V	-	-	1	uA
I_{GSS}	Gate-Source Leakage	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Q_g	Total Gate Charge[2]	I_D=10A V_{DS}=15V V_{GS}=10V	-	19	-	nC
Q_{gs}	Gate-Source Charge		-	6.3	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge		-	4.5	-	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=15V I_D=10A R_G=1Ω V_{GS}=10V	-	6	-	ns
t_r	Rise Time		-	5	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	25	-	ns
t_f	Fall Time		-	7	-	ns
C_{iss}	Input Capacitance	V_{GS}=0V V_{DS}=15V f=1.0MHz	-	1011	-	pF
C_{oss}	Output Capacitance		-	142	-	pF
Crss	Reverse Transfer Capacitance		-	119	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage[3]	I_S=10A, V_{GS}=0V	-	-	1.2	V
I_S	Forward On Current[4]		-	-	15	A

Notes:

1.Pulse width limited by Max. junction temperature.

2.EAS Codition : Tj=25℃,VDD=15V,RG=25Ω, L=0.5mH

3.Pulse Test : pulse width≦300uS , duty cycle≦2%

4.Surface mounted on 1 in2 2oz copper pad of FR4 board, t <10sec ; 135oC/W when mounted on min. copper pad.

Typical Performance Characteristics

Figure1: Output Characteristics

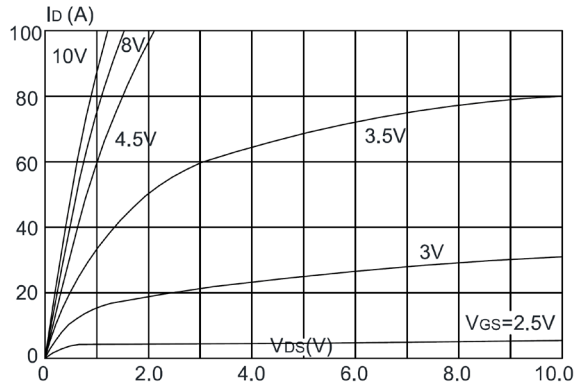


Figure2: Typical Transfer Characteristics

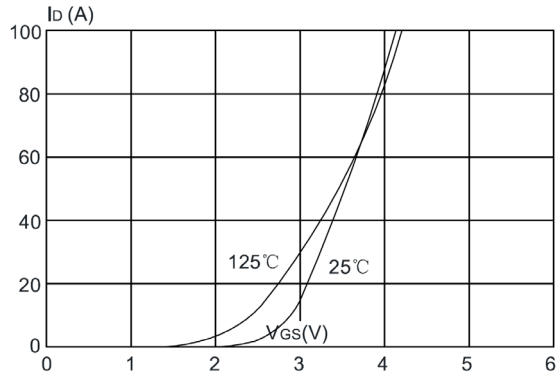


Figure3: On-resistance VS Drain Current

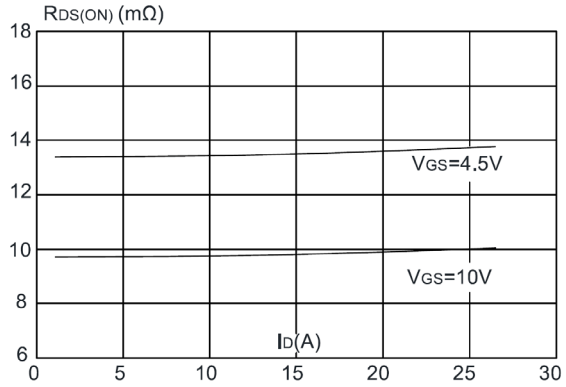


Figure4: Body Diode Characteristics

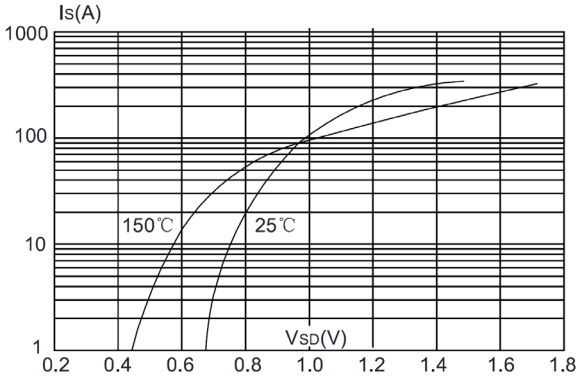


Figure5: Gate Charge Characteristics

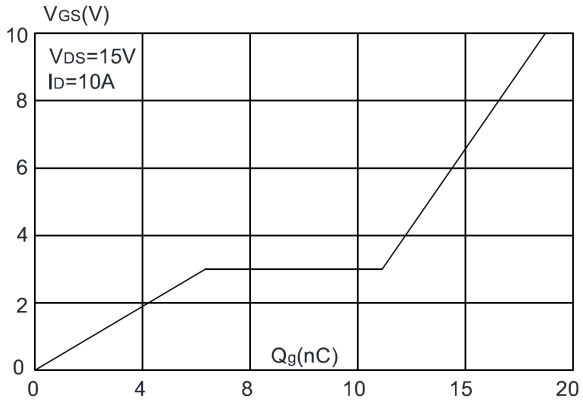


Figure6: Capacitance Characteristics

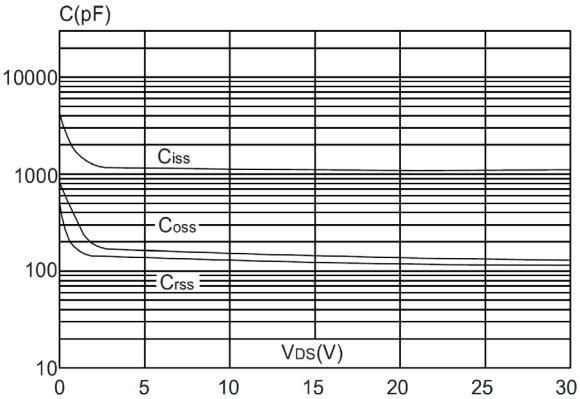


Figure7: Normalized Breakdown Voltage VS Junction Temperature

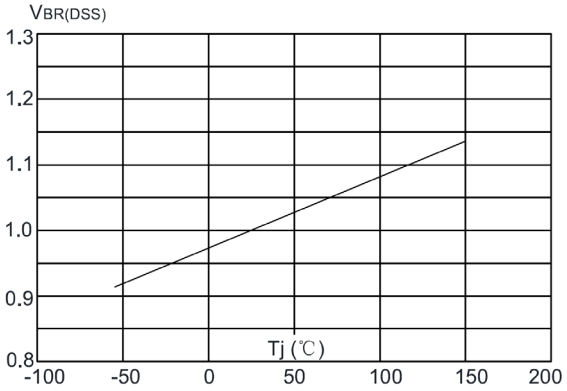


Figure8: Normalized On resistance VS Junction Temperature

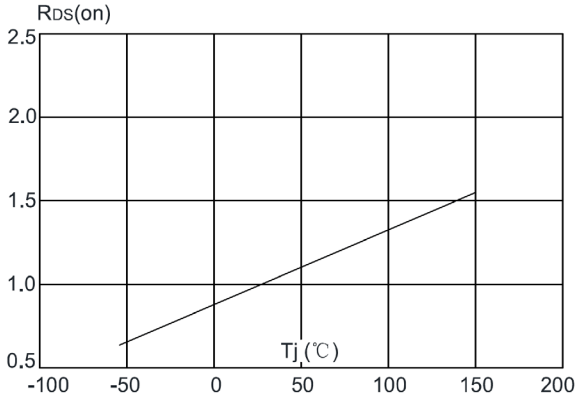


Figure9: Maximum Safe Operating Area

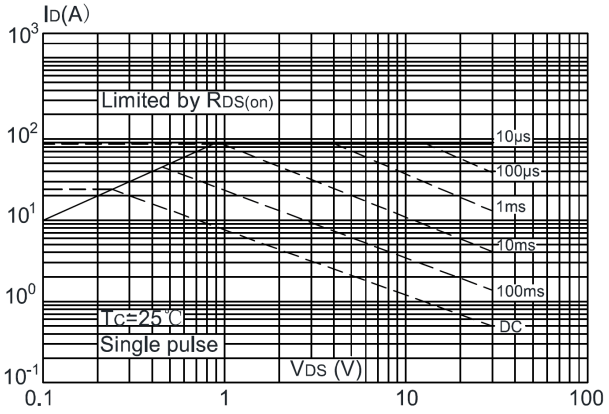
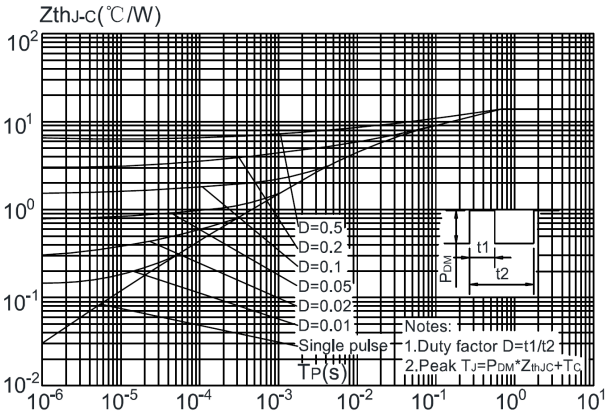


Figure10: Maximum Effective Transient Thermal

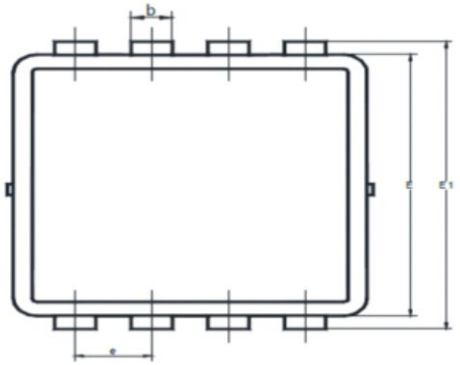


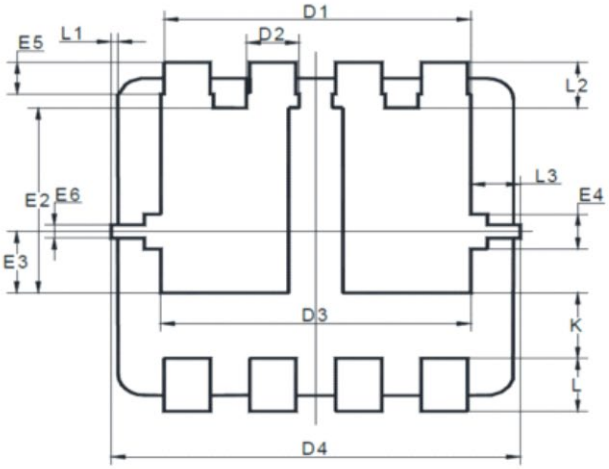
Marking Information

Package	DFN3x3-8	
XXXX	Part Number	
PP	Package Code	
Y	Year	E=2019 , F=2020, ...
WW	Weeks	Ex. 10/27=44weeks, 11/3=45weeks
FF	Wafer lot	Lot No.
S	Serial	Serial No.
Dot	First pin	

Package Outline: DFN3x3-8

Package Outline Dimensions DFN3030





Unit	A	A1	b	c	D1	D2	D3	D4	E	E1	E2	E3	E4
mm	0.9 0.7	0.05 0	0.35 0.24	0.25 0.1	2.6 2.4	0.5 0.3	2.7 2.5	3.33 3	3.1 2.9	3.5 3.1	1.85 1.65	0.68 0.48	0.43 0.23

Unit	E5	E6	e	K	L	L1	L2	L3	Θ1
mm	0.4 0.2	0.25 0.15	0.7 0.6	0.72 0.52	0.5 0.3	0.1 0	0.53 0.33	0.475 0.275	13° 0°