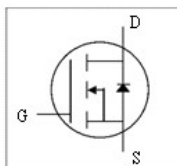
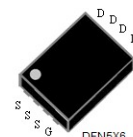


- Simple Driver Requirement
- Low On-resistance
- RoHS Compliant & Halogen-Free



BVDSS	100V
RDS(ON)Typ	8.1mΩ
Id	50A



Description

KE6802 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.

The package is special for voltage conversion application using standard infrared reflow technique with the backside heat sink to achieve the good thermal performance.

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

Symbol	Parameter	Rating	Units
VDS	Drain-Source Voltage	100	V
VGS	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Drain Current, V _{GS} @ 10V	50	A
I _D @T _C =100°C	Drain Current, V _{GS} @ 10V	31	A
I _{DM}	Pulsed Drain Current ¹	105	A
P _D @T _A =25°C	Total Power Dissipation	5	W
P _D @T _C =25°C	Total Power Dissipation	41.6	W
P _D @T _C =100°C	Total Power Dissipation	30	W
E _{AS}	Avalanche Energy, Single pulse ⁴	15	mJ
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	150	°C

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-c	Maximum Thermal Resistance, Junction-case	3	°C/W
Rthj-a	Maximum Thermal Resistance, Junction-ambient ³	30	°C/W

Electrical Characteristics@T_j=25 °C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	100	-	-	V
RDS(ON)	Static Drain-Source On-Resistance ₂	V _{GS} =10V, I _D =20A	-	8.1	9.5	mΩ
		V _{GS} =4.5V, I _D =10A	-	11.4	14.5	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1	2	3	V
g _{fs}	Forward Transconductance	V _{DS} =5V, I _D =20A	-	34	-	S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =80V, V _{GS} =0V	-	-	1	uA
I _{GSS}	Gate-Source Leakage	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Q _g	Total Gate Charge	I _D =20A	-	17	-	nC
Q _{gs}	Gate-Source Charge	V _{DS} =50V	-	5	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =10V	-	12	-	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =50V	-	16	-	ns
t _r	Rise Time	I _D =1A	-	65	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =3Ω	-	26	-	ns
t _f	Fall Time	V _{GS} =10V	-	51	-	ns
C _{iss}	Input Capacitance	V _{GS} =0V	-	2550	-	pF
C _{oss}	Output Capacitance	V _{DS} =50V	-	1850	-	pF
Crss	Reverse Transfer Capacitance	f=1.0MHz	-	575	-	pF
R _g	Gate Resistance	f=1.0MHz	-	1.1	-	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V _{SD}	Forward On Voltage ₂	I _S =20A, V _{GS} =0V	-	0.84	1.1	V
t _{rr}	Reverse Recovery Time	I _S =20A, V _R =50V	-	49	-	ns
Q _{rr}	Reverse Recovery Charge	dI/dt=100A/μs	-	61	-	nC

Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse Test
- 3.Surface mounted on 1 in² 2oz copper pad of FR4 board, t <10sec ; 60°C/W when mounted on min. copper pad.
- 4.Starting T_J=25°C V_{dd}=50V, L=0.1mH, R_g=25Ω.

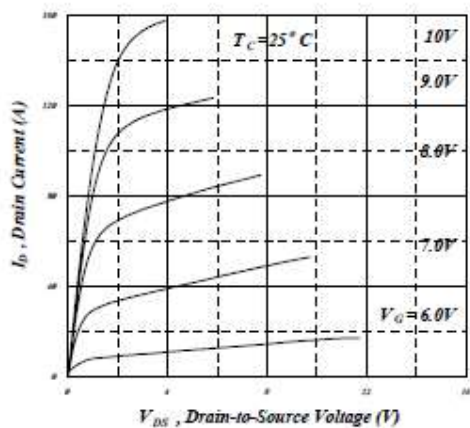


Fig 1. Typical Output Characteristics

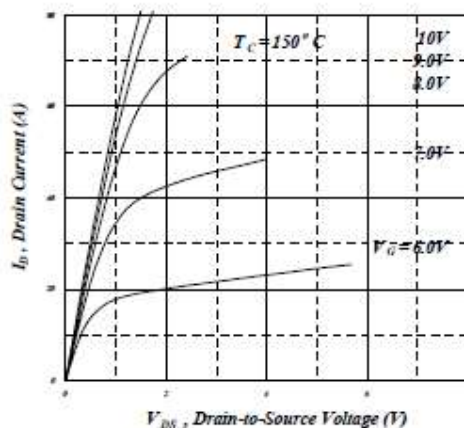


Fig 2. Typical Output Characteristics

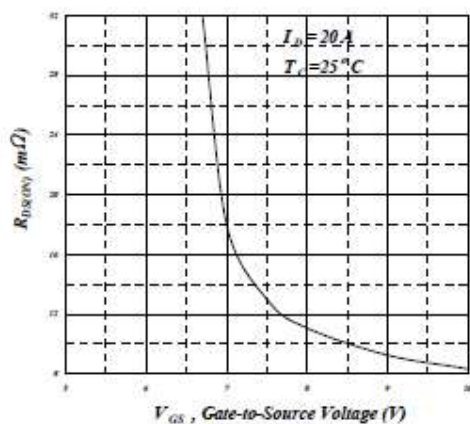


Fig 3. On-Resistance v.s. Gate Voltage

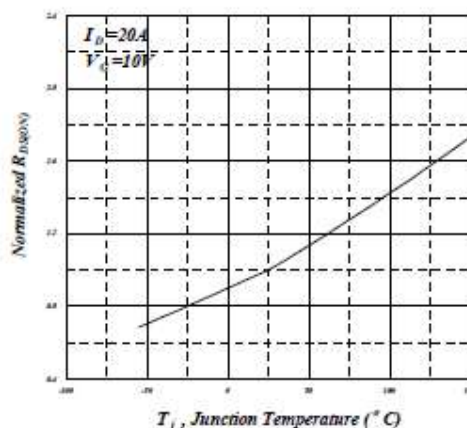


Fig 4. Normalized On-Resistance
v.s. Junction Temperature

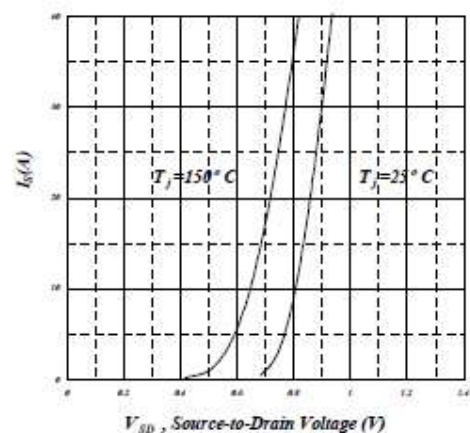


Fig 5. Forward Characteristic of
Reverse Diode

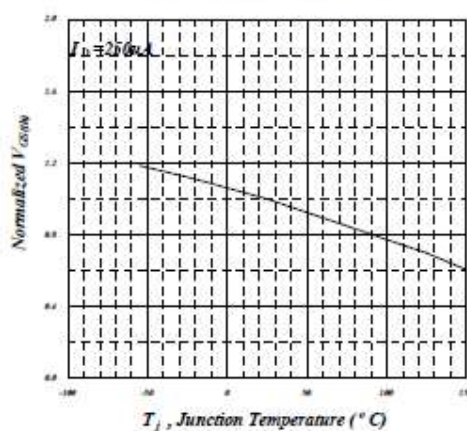


Fig 6. Gate Threshold Voltage v.s.
Junction Temperature

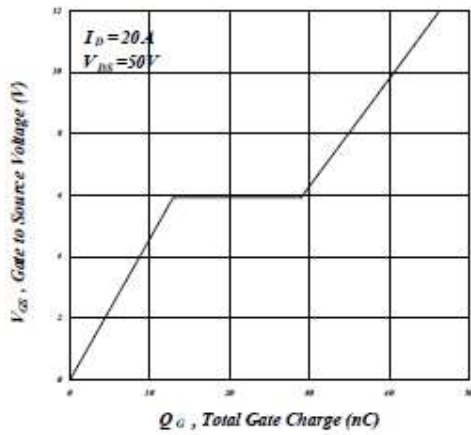


Fig 7. Gate Charge Characteristics

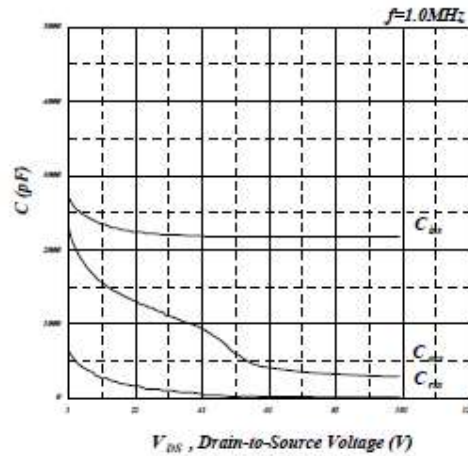


Fig 8. Typical Capacitance Characteristics

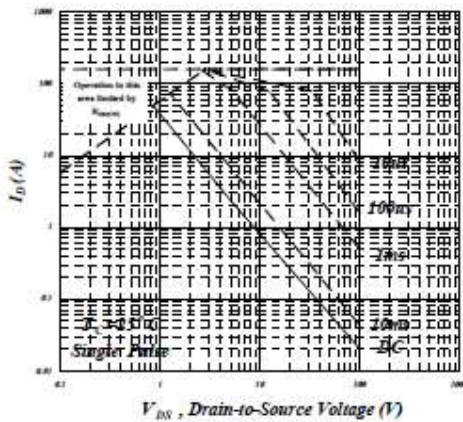


Fig 9. Maximum Safe Operating Area

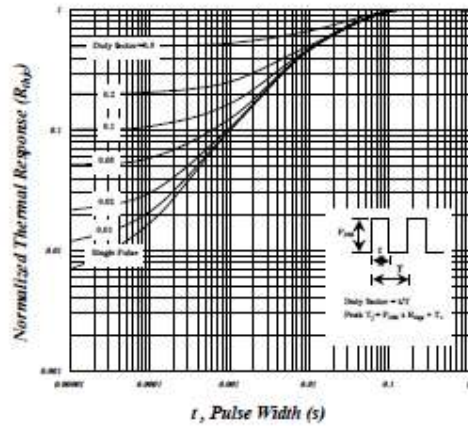


Fig 10. Effective Transient Thermal Impedance

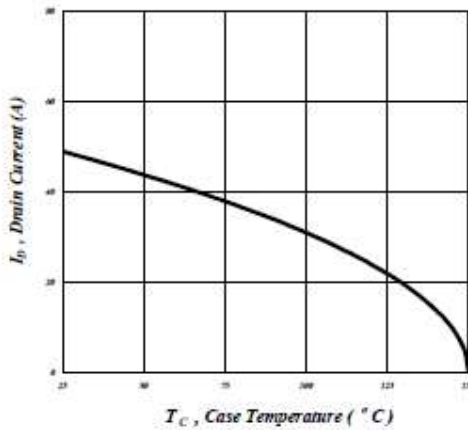


Fig 11. Drain Current v.s. Case
Temperature

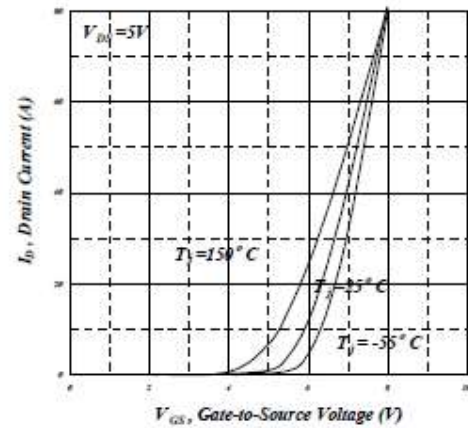


Fig 12. Transfer Characteristics

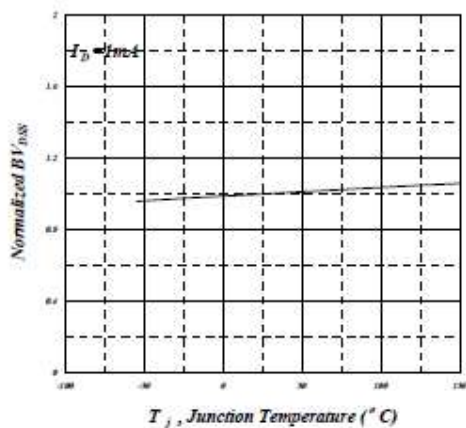


Fig 13. Normalized BV_{DSS} v.s. Junction Temperature

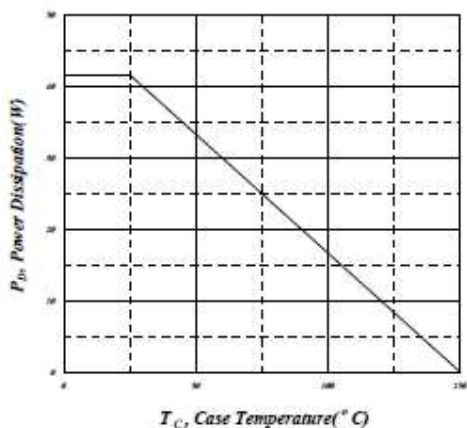


Fig 14. Total Power Dissipation

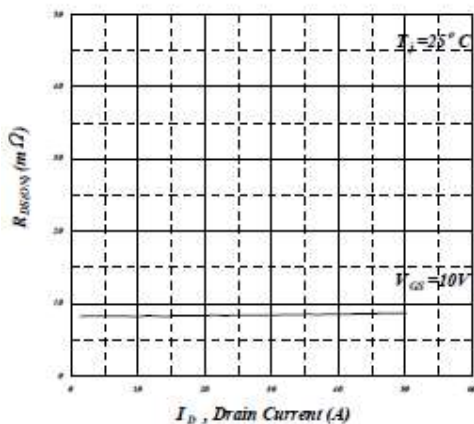
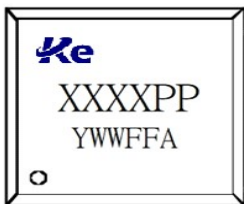


Fig 15. Typ. Drain-Source on State Resistance

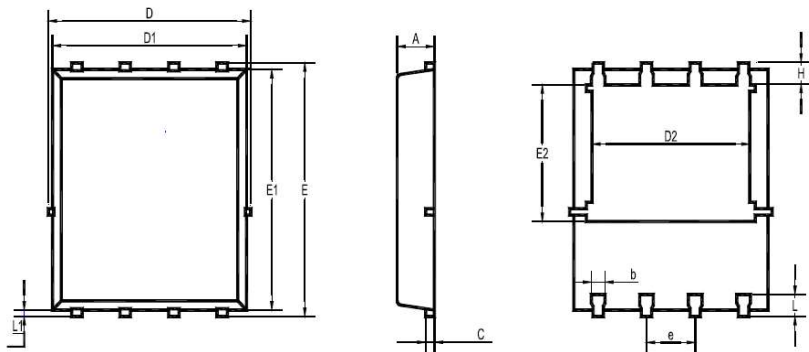
Marking Information



Package	PDFN5x6	
XXXX	Part Number	
PP	Package Code	
Y	Year	F=2020 , G=2021,
WW	Weeks	Ex. 10/27=44weeks, 11/3=45weeks
FF	Wafer lot	Lot No.
A	Serial	Serial No.
Dot	First pin	

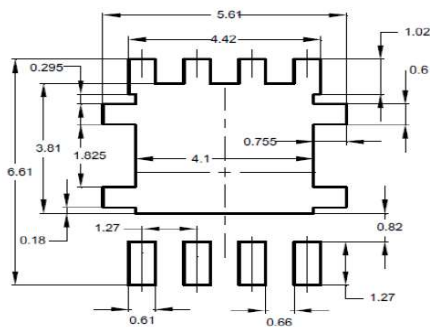
Package Outline Dimensions (Units: mm)

PDFN5x6



UNIT	A	b	C	D	D1	D2	E	E1	E2	e	L	L1	H
mm	1.12	0.51	0.34	5.26	5.1	4.5	6.25	6	3.66	1.37	0.71	0.2	0.71
	0.9	0.33	0.11	4.7	4.7	3.56	5.75	5.6	3.18	1.17	0.35	0.06	0.35

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
PDFN5x6	12	8 ± 0.1	0.315 ± 0.004	330	13	5,000