

## AK P-Channel TrenchPower MOSFET

### Features

- P-channel
- $V_{DS} = -40V, I_D = -50A$   
 $R_{DS(ON)} < 16m\Omega @ V_{GS} = -10V$
- Pb-free lead plating; RoHS compliant

### Application

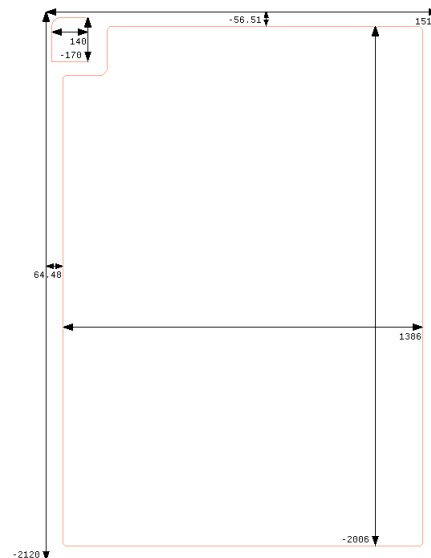
- Load Switch
- PWM Application
- Power management

### 40V P-Ch Power MOSFET

Parameter	Value	Unit
$V_{DS}$	-40	V
$R_{DS(on), typ}$	$V_{GS} = -10V$	11 m $\Omega$
$R_{DS(on), typ}$	$V_{GS} = -4.5V$	16.0 m $\Omega$
$I_{D\_MAX}$	-50	A

### Physical Characteristics:

Wafer Size (inch)	8
Chip Size with scribe line (mm)	1.575x2.180
Wafer Thickness (mil)	6
Top Metal	AlCu
Top Metal Thickness ( $\mu m$ )	4
Back Metal	Ti/Ni/Ag
Scribe Line ( $\mu m$ )	60
Gate Wire recommended	42um Cu
Source Wires recommended	$\Phi 12mil AL*2$
Gross Die	8211
Source Pad Dimensions( $\mu m$ )	1386*2006
Gate Pad Dimensions( $\mu m$ )	140*170



GQ004 PAD G: 140 X170 S: 1386 X 2006

**Electrical Characteristics at T<sub>j</sub>=25°C (unless otherwise specified)**

Parameter	Symbol	Test Condition	Value			Unit
			Min.	Typ.	Max.	
Drain to Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-40	-47		V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =-250μA	-1.2	-1.7	-2.5	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-30V, T <sub>j</sub> =25°C	-	-	-1	μA
Gate to Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	±100	nA
Drain to Source on Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =-20A	-	11	16	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =-15A	-	16	25	
Gate Resistance	R <sub>G</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz	-	6.5	-	Ω