

## AK P-Channel Trench Power MOSFET

### Features

- P-channel
- $V_{DS} = -40V, I_D = -14A$   
 $R_{DS(ON)} < 40m\Omega @ V_{GS} = -10V$
- Pb-free lead plating; RoHS compliant

### Application

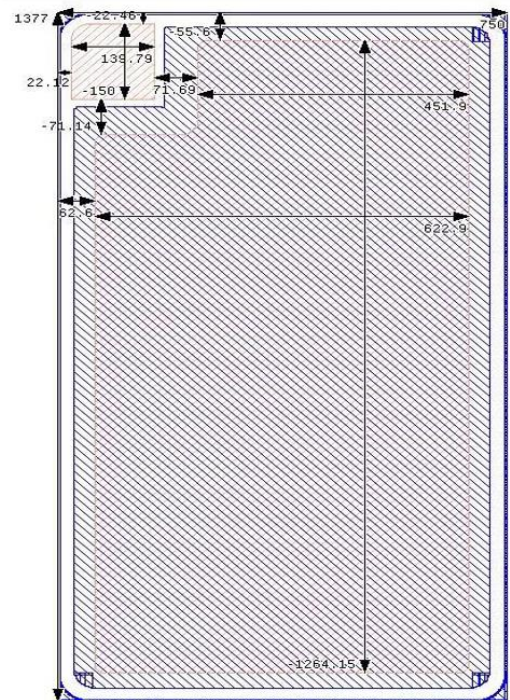
- Synchronous Rectification
- PWM Application
- Power management

### Physical Characteristics:

Wafer Size (inch)	8
Chip Size with scribe (mm)	0.810*1.437
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	1*42um Cu
Source Wires recommended	$\Phi 10mil$ AL*2
Gross Die	24460
Source Pad Dimensions( $\mu m$ )	622*1260
Gate Pad Dimensions( $\mu m$ )	139*150

## 40V P-Ch Power MOSFET

Parameter	Value	Unit	
$V_{DS}$	-40	V	
$R_{DS(on), typ}$	$V_{GS} = -10V$	32	$m\Omega$
$R_{DS(on), typ}$	$V_{GS} = -4.5V$	45	$m\Omega$
$I_{D\_MAX}$	-14	A	



die size: 810 X 1437

**Electrical Characteristics at T<sub>j</sub>=25°C (unless otherwise specified under TO-252 package)**

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	-44		V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250μA	-1.1	-1.6	-2.2	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-40V, T <sub>j</sub> =25°C	-	0.01	1	μA
		V <sub>GS</sub> =0V, V <sub>DS</sub> =-40V, T <sub>j</sub> =100°C		-	100	
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> =-5A	-	32	40	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-4A	-	45	65	
Gate Resistance	R <sub>G</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz	-	9	-	Ω