

**DESCRIPTION**

The AM3016K is available in SOT-23 Package.

VDSS	RDS(ON)	ID
30V	390mΩ	0.6A

APPLICATIONS

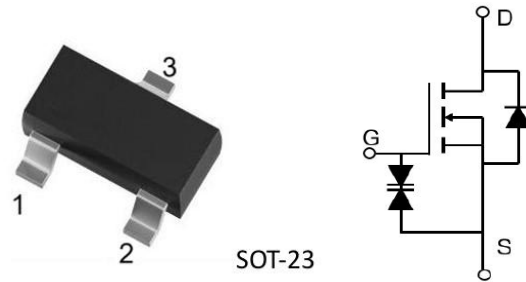
- Load Switch
- PWM Application
- Power Management

ORDERING INFORMATION

Package Type	Part Number	
SOT-23 SPQ: 3000pcs/Reel	E3	AM3016KE3VR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

FEATURE

- 30V, 0.6A
- $R_{DS(ON)}$ Typ.= 390mΩ @ $V_{GS} = 10V$
- Advanced Split Gate Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔV_{ds} TESTED!

PIN DESCRIPTION

Pin #	Symbol	Function
1	G	Gate
2	S	Source
3	D	Drain

ABSOLUTE MAXIMUM RATINGS

$T_J = 25^\circ\text{C}$, unless otherwise specified.

V_{DS} , Drain-to-Source Voltage		30V
V_{GS} , Gate Source Voltage		$\pm 20V$
I_D , Continuous Drain Current	$T_A = 25^\circ\text{C}$	0.6A
	$T_A = 100^\circ\text{C}$	0.36A
I_{DM} , Pulsed Drain Current ⁽¹⁾		2.4A
P_D , Power Dissipation	$T_A = 25^\circ\text{C}$	0.35W
$R_{\theta JA}$, Thermal Resistance, Junction-to-Case ⁽²⁾		357 $^\circ\text{C/W}$
T_{STG} , Storage Temperature Range		$-55^\circ\text{C} \sim +150^\circ\text{C}$
T_J , Junction Temperature Range		$-55^\circ\text{C} \sim +150^\circ\text{C}$

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

2. $R_{\theta JA}$ is measured with the device mounted on a 1inch² pad of 2oz copper FR4 PCB

3. Pulse Test Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$



ELECTRICAL CHARACTERISTICS

T_J = 25°C, unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	-	-	1.0	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	-	-	±10	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} = V _{GS} , I _D = 250μA	0.5	0.85	1.2	V
Static Drain-Source ON-Resistance ⁽¹⁾	R _{DS(ON)}	V _{GS} = 10V, I _D = 0.2A	-	390	468	mΩ
		V _{GS} = 4.5V, I _D = 0.15A	-	500	600	
		V _{GS} = 2.5V, I _D = 0.1A	-	1000	1200	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} =0V, f=1MHZ	-	20	-	pF
Output Capacitance	C _{oss}		-	5	-	
Reverse Transfer Capacitance	C _{rss}		-	3	-	
Total Gate Charge	Q _g	V _{DS} = 15V , I _D =0.3A V _{GS} =0V ~10V	-	1.5	-	nC
Gate-Source Charge	Q _{gs}		-	0.2	-	
Gate-Drain Charge	Q _{gd}		-	0.5	-	
Switching Characteristic						
Turn-On Delay Time	t _{d(on)}	V _{DD} =15V, I _D = 0.3A R _{GEN} =3Ω, V _{GS} = 10V	-	2	-	ns
Turn-On Rise Time	t _r		-	14	-	
Turn-Off Delay Time	t _{d(off)}		-	6	-	
Turn-Off Fall Time	t _f		-	19	-	
Drain-Source Diode Characteristics and Max Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I _{SD}		-	-	0.6	A
Maximum Pulsed Drain to Source Diode Forward Current	I _{SM}		-	-	2.4	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S = 0.2A	-	-	1.2	V



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Gate Charge Test Circuit & Waveform

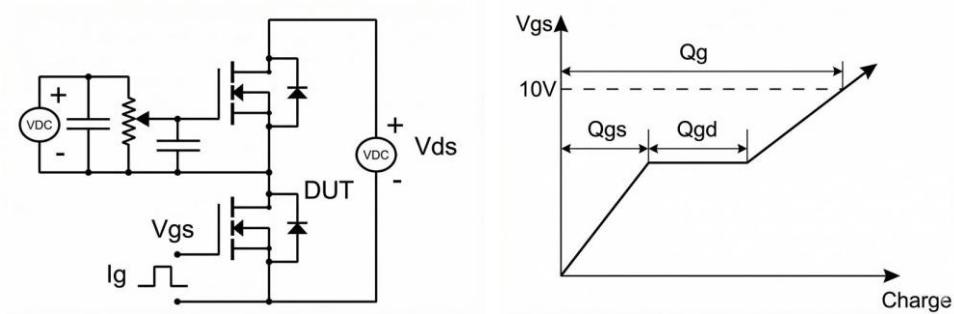


Fig 2. Resistive Switching Test Circuit & Waveform

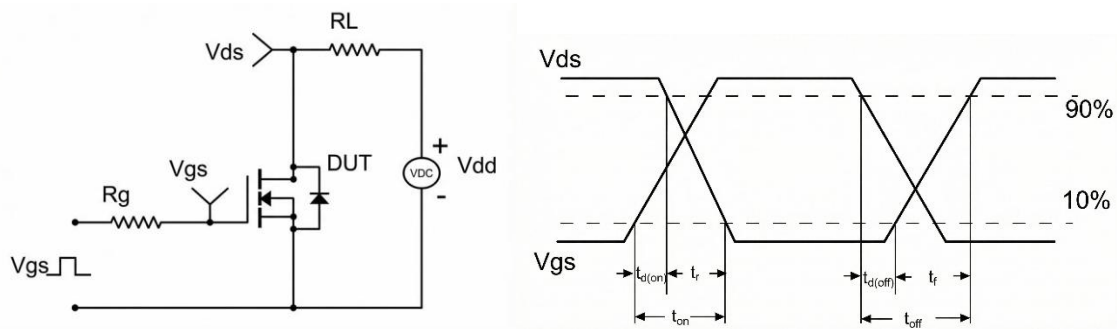


Fig 3. Unclamped Inductive Switching Test Circuit & Waveform

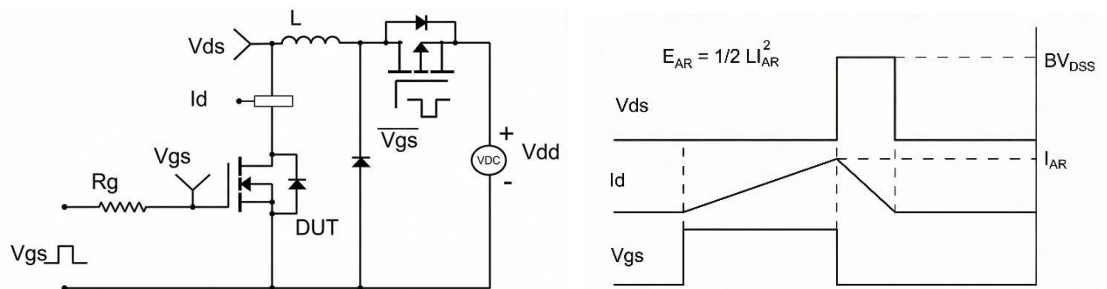
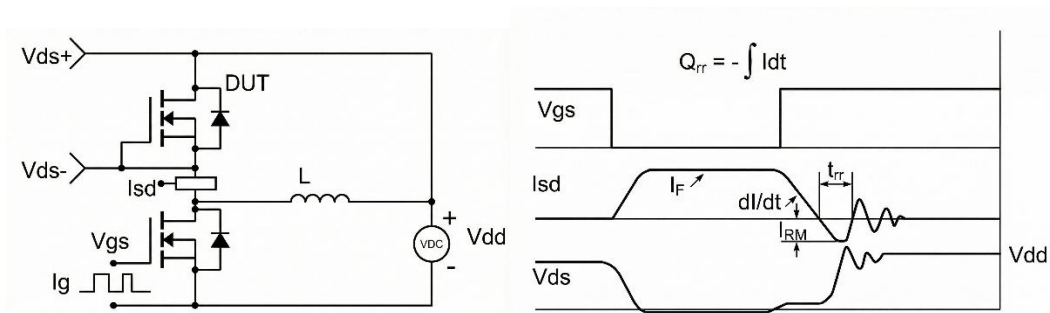


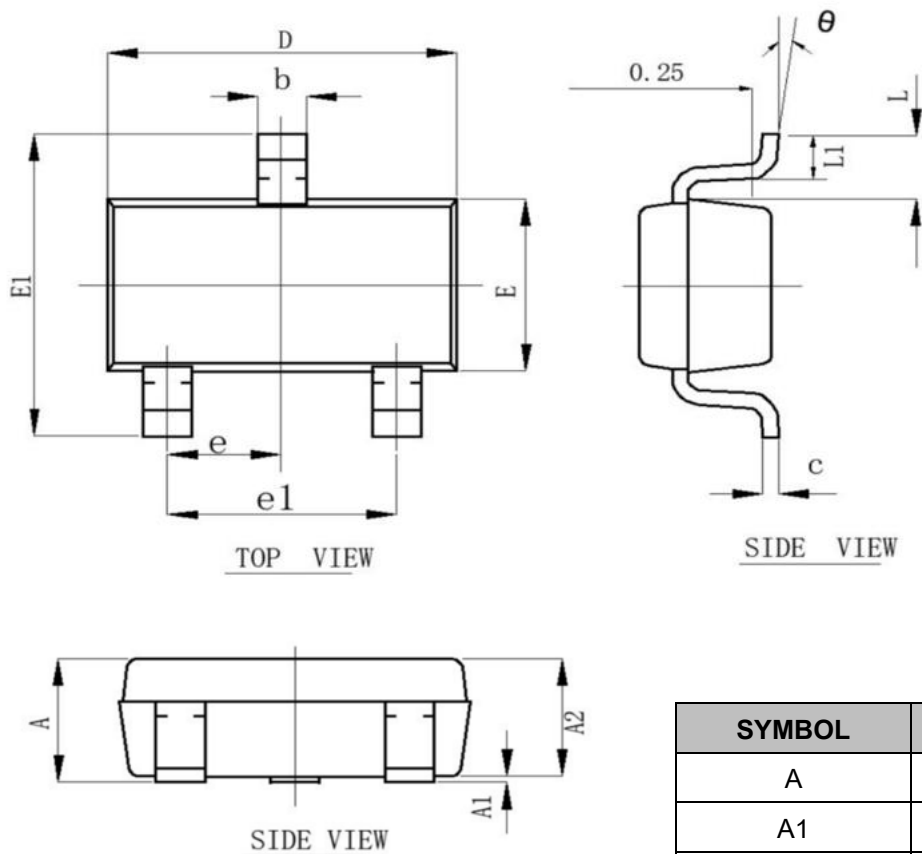
Fig 4. Diode Recovery Test Circuit & Waveform





PACKAGE INFORMATION

Dimension in SOT-23 (Unit: mm)



SYMBOL	MIN	MAX
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.00
E	1.200	1.400
E1	2.250	2.550
L	0.550 REF	
θ	0°	8°
L1	0.300	0.500
e	0.950 TYP.	
e1	1.800	2.000

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