


## Description

- High speed switching application.

## Features

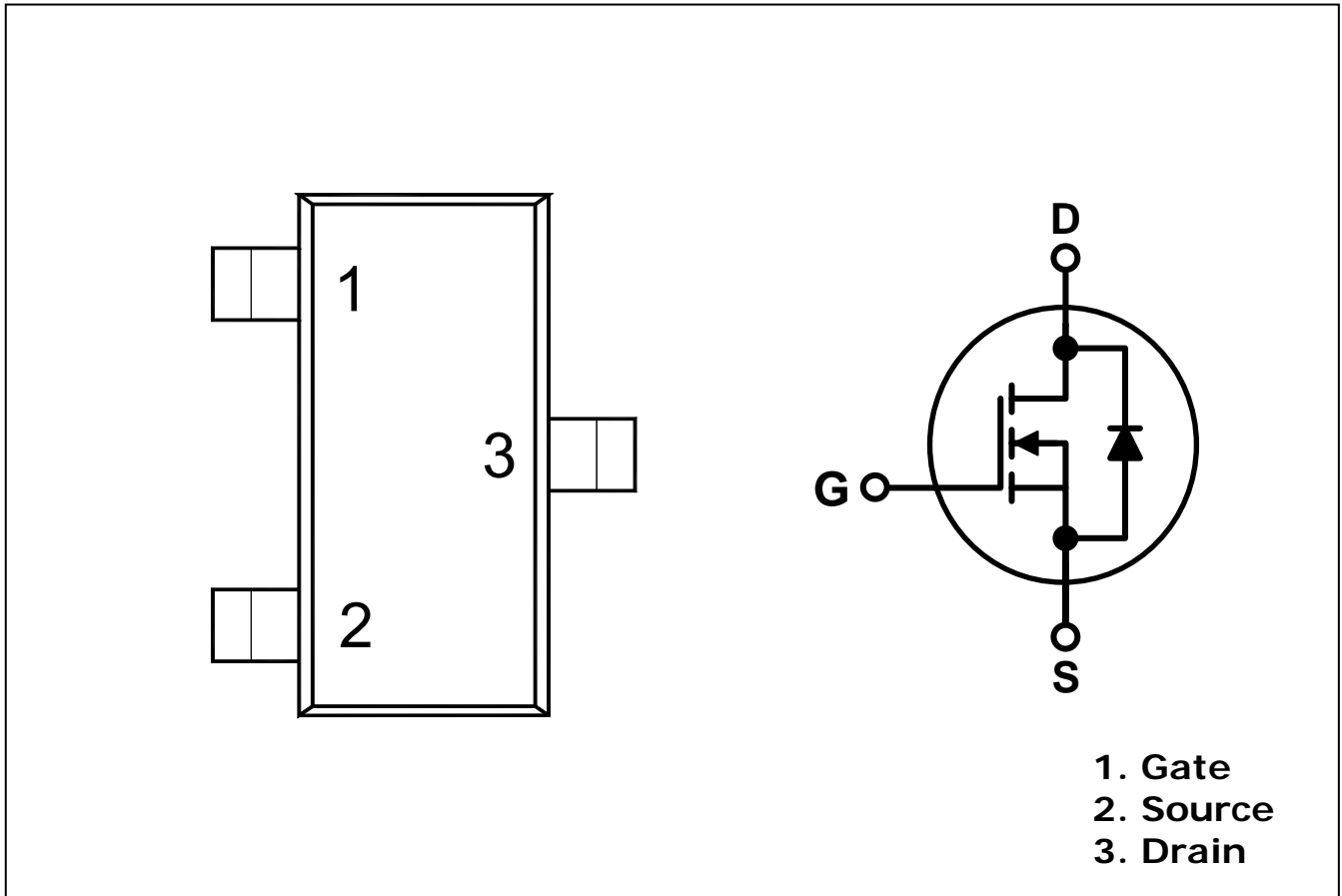
- High density cell design for low  $R_{DS(ON)}$ .
- Voltage controlled small signal switch
- High saturation current capability.

## Ordering Information

Type NO.	Marking	Package Code
STK7002U	K72  ① ②	SOT-323

① Device Code ② Year&Week Code

## PIN Connections



## Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Drain-Source voltage	$V_{DSS}$	60	V
Gate-Source voltage	$V_{GS}$	±20	V
Maximum Drain current	$I_D$	115	mA
Pulsed Drain Current	$I_{DP} *$	800	mA
Power Dissipation	$P_D$	200	mW
Maximum Junction-to-Ambient	$R_{thJA}$	625	°C/W
Operating Junction and Storage temperature range	$T_J, T_{stg}$	-55~150	°C

\*  $PW \leq 10 \mu s$ , Duty cycle  $\leq 1\%$

## Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Drain-Source breakdown voltage	$BV_{DSS}$	$I_D=10\mu A, V_{GS}=0$	60	-	-	V
Gate-Threshold voltage	$V_{GS(th)}$	$I_D=0.25mA, V_{DS}=V_{GS}$	1	2.0	2.5	V
Zero Gate voltage drain current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0$	-	-	1	$\mu A$
Gate-body leakage	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	±100	nA
Drain-Source on-resistance	$R_{DS(ON)} *$	$V_{GS}=5V, I_D=50mA$	-	3.2	7.5	$\Omega$
		$V_{GS}=10V, I_D=500mA$	-	2.4	7.5	
Forward transconductance	$g_{fs}$	$V_{DS}=10V, I_D=0.2A$	80	-	-	mS
Input capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0, f=1MHz$	-	22	50	pF
Output capacitance	$C_{oss}$		-	11	25	
Reverse Transfer capacitance	$C_{rss}$		-	2	5	
Turn-on time	$t_{ON}$	$V_{DD}=30V, I_D=0.2A$	-	7	20	ns
Turn-off time	$t_{OFF}$	$V_{GS}=10V, R_G=25\Omega$	-	11	20	ns

\*  $PW \leq 300 \mu s$ , Duty cycle  $\leq 1\%$

Electrical Characteristic Curves

Fig. 1  $I_D - V_{DS}$

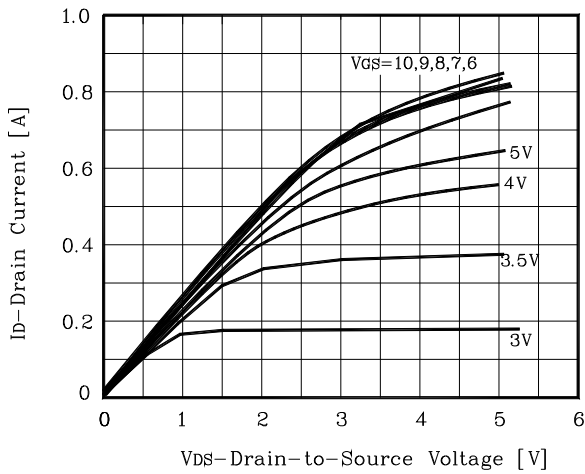


Fig. 2  $I_D - V_{GS}$

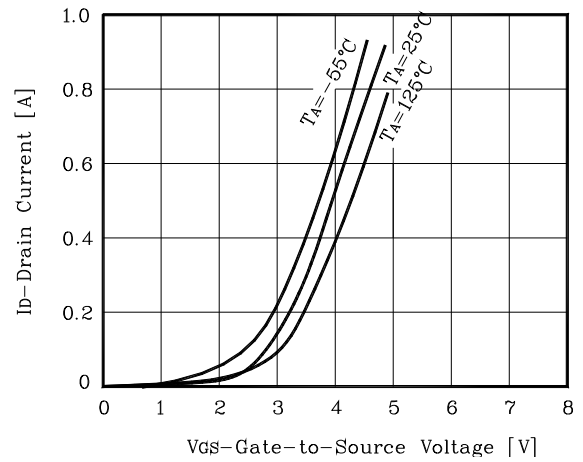


Fig. 3  $R_{DS(on)} - I_D$

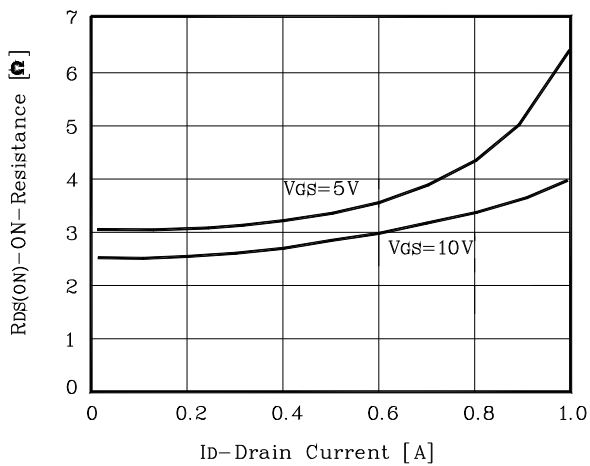


Fig. 4  $C - V_{DS}$

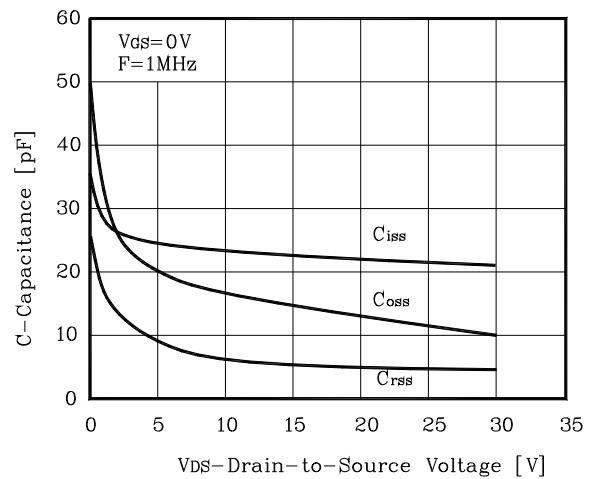


Fig. 5  $V_{GS} - Q_g$

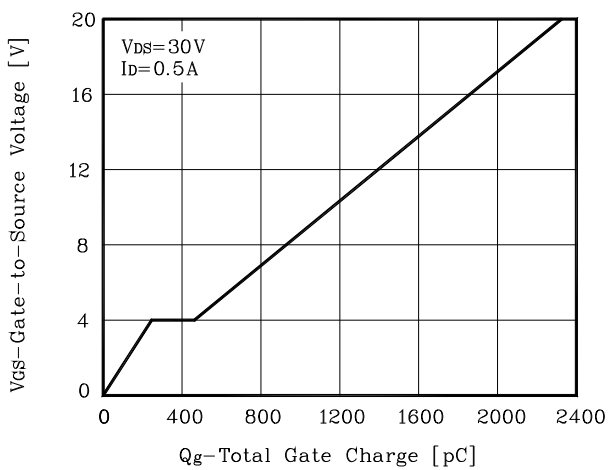
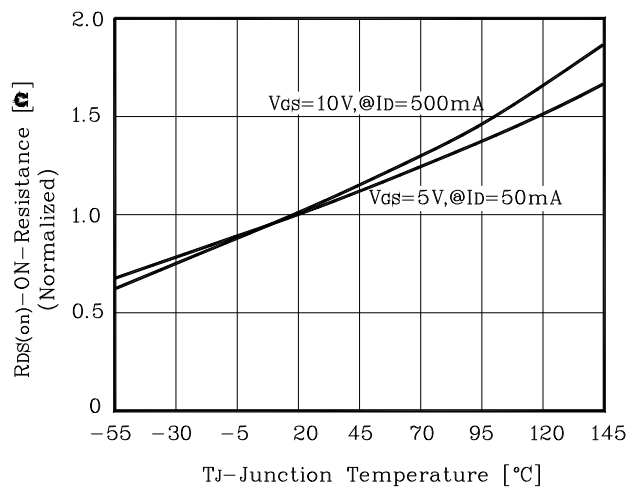
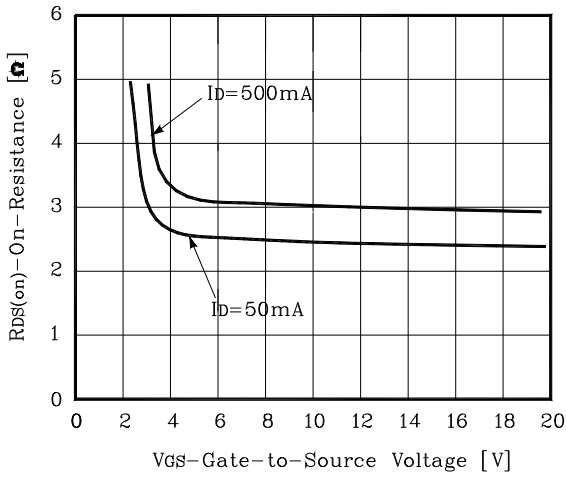


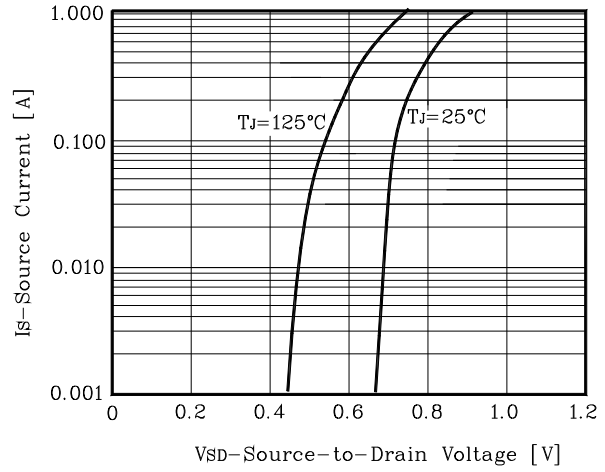
Fig. 6  $R_{DS(on)} - T_J$



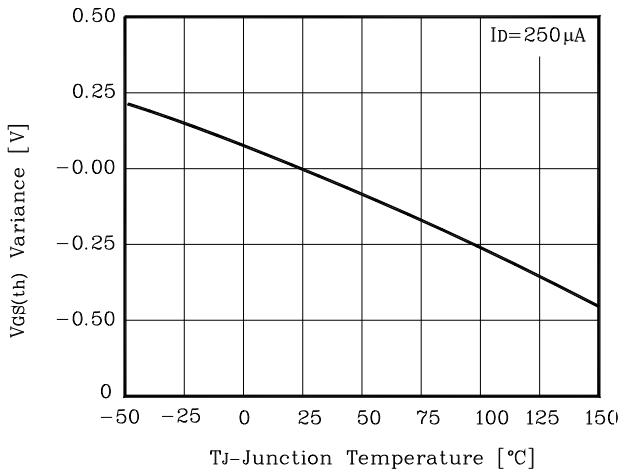
**Fig. 7  $R_{DS(on)}$  -  $V_{GS}$**



**Fig. 8  $I_S$  -  $V_{SD}$**



**Fig. 9  $V_{GS(th)}$  -  $T_J$**



**Fig. 10 Safe Operating Area**

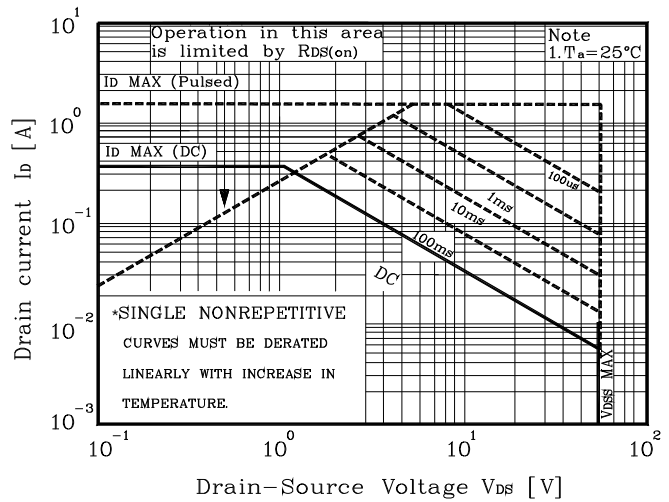


Fig. 11 Gate Charge Test Circuit & Waveform

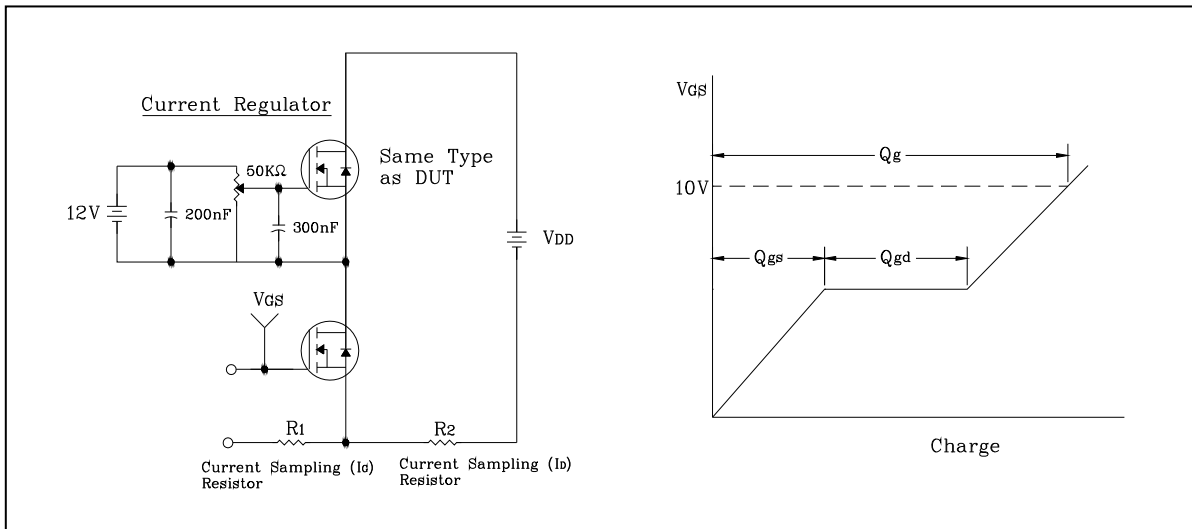


Fig. 12 Resistive Switching Test Circuit & Waveform

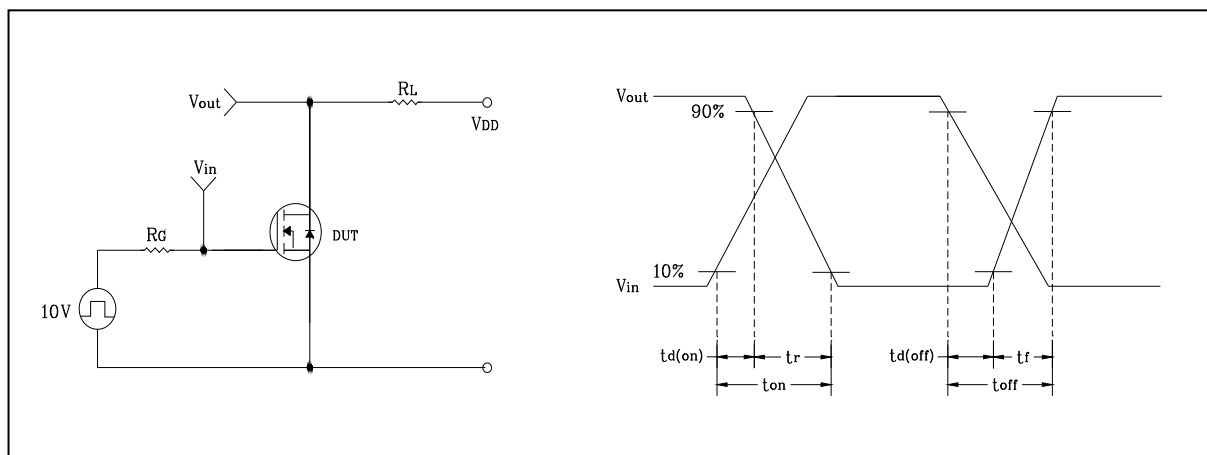


Fig. 13 EAS Test Circuit & Waveform

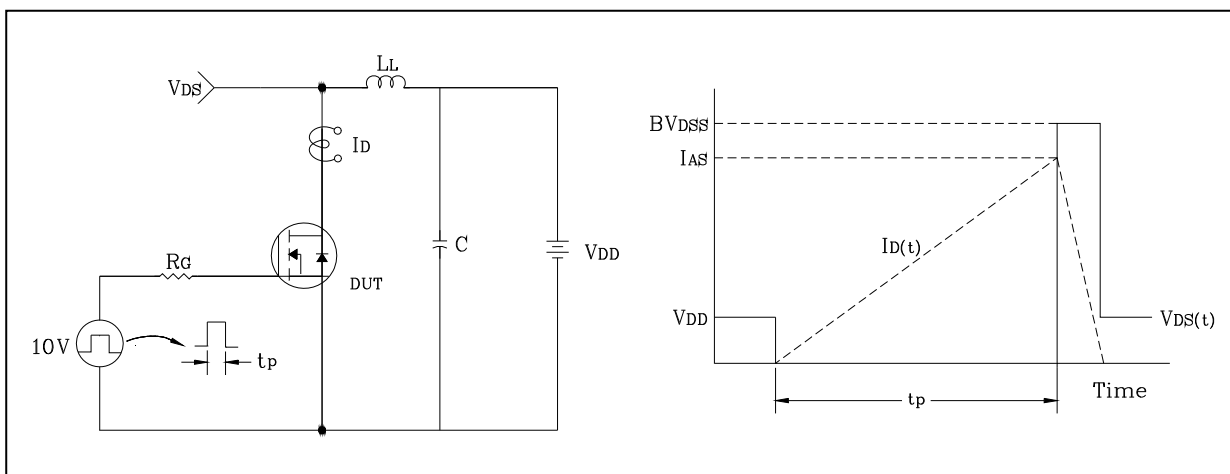
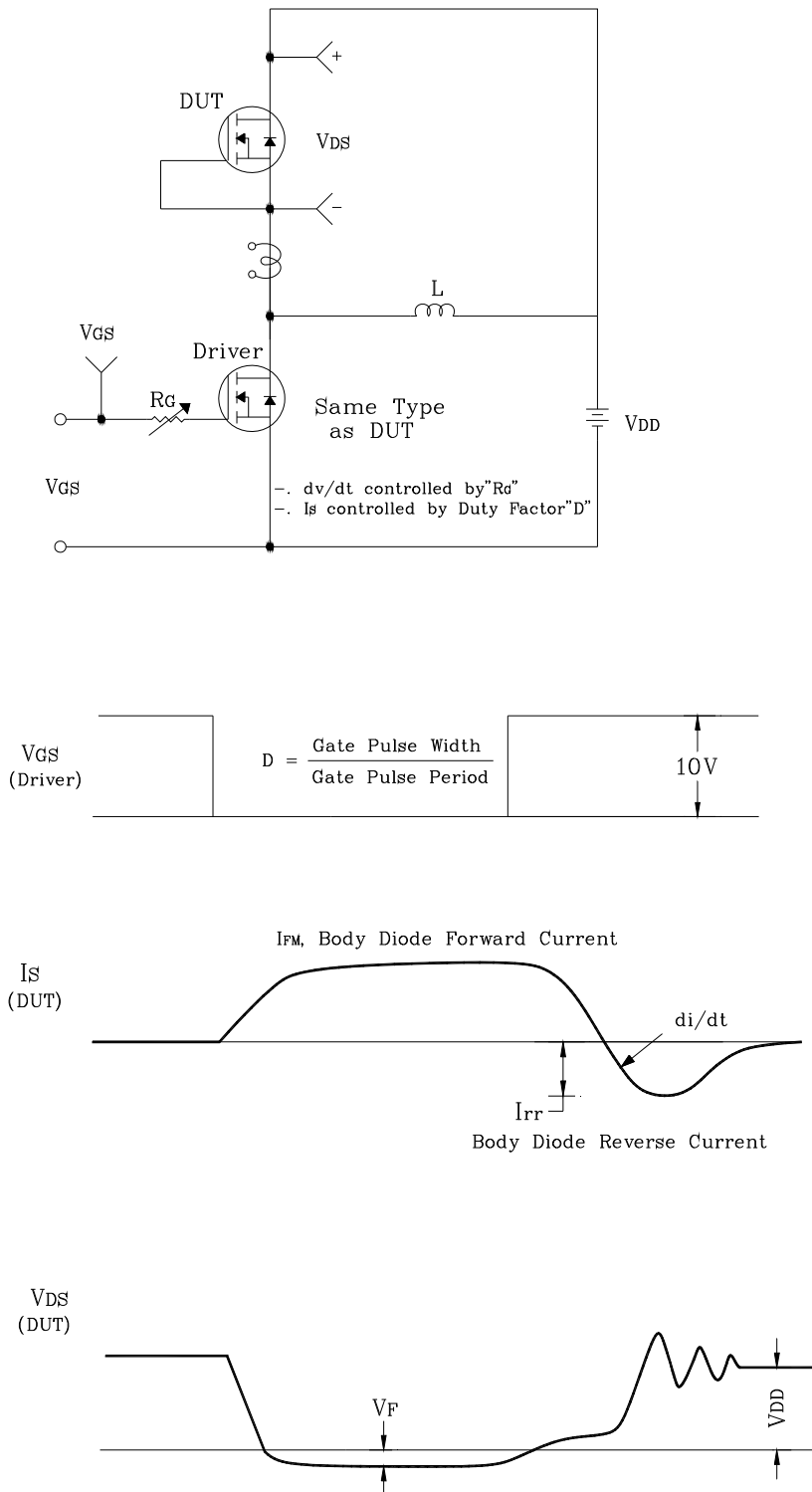
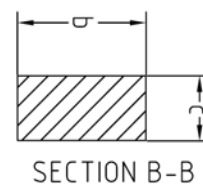
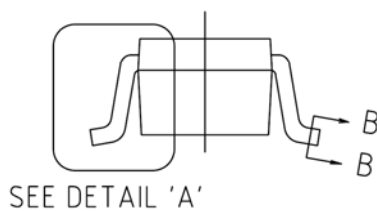
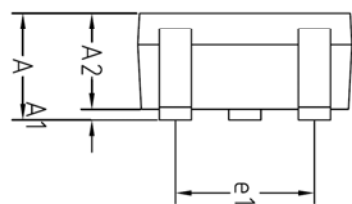
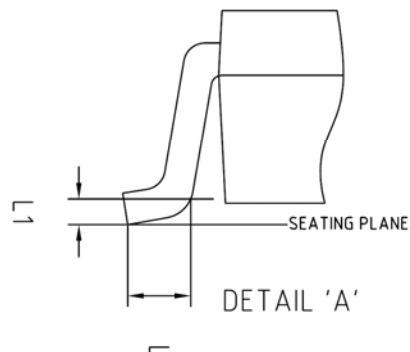
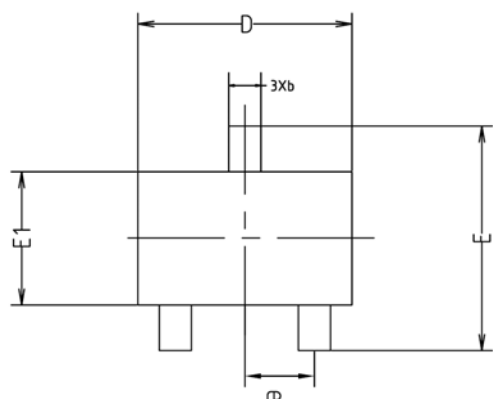


Fig. 14 Diode Reverse Recovery Time Test Circuit & Waveform



Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.90	-	1.25	
A1	0.00	-	0.10	
A2	0.85	0.90	0.95	
b	0.30	-	0.40	
c	0.10	-	0.25	
D	1.90	2.00	2.10	
E	1.95	2.10	2.25	
E1	1.15	1.25	1.35	
e	0.65BSC			
e1	1.20	-	1.40	
L	0.10	-	-	
L1	0.12BSC			

**The AUK Corp. products are intended for the use as components in general electronic equipment (Office and communication equipment, measuring equipment, home appliance, etc.).**

**Please make sure that you consult with us before you use these AUK Corp. products in equipments which require high quality and / or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, transportation, combustion control, all types of safety device, etc.). AUK Corp. cannot accept liability to any damage which may occur in case these AUK Corp. products were used in the mentioned equipments without prior consultation with AUK Corp..**

**Specifications mentioned in this publication are subject to change without notice.**