



## 30V/0.1A N-Channel Advanced Power MOSFET

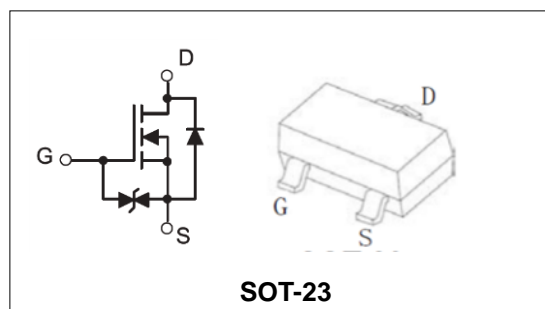
### Features

- Low on-resistance
- Fast switching speed
- Low voltage drive (2.5V) makes this device ideal for portable equipment
- Easily designed drive circuits.
- Easy to parallel.

BVDSS	30	V
ID	0.1	A
RDSON@VGS=4V	5	Ω
RDSON@VGS=2.5V	7	Ω

### Applications

- Interfacing, switching



### Order Information

Product	Package	Marking	Reel Size	Reel	Carton
2SK3018	SOT-23	KN	7inch	3000PCS	180000PCS

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit	
<b>Common Ratings (TC=25°C Unless Otherwise Noted)</b>				
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	30	V	
$V_{GS}$	Gate-Source Voltage	±20	V	
$T_J$	Maximum Junction Temperature	150	°C	
$T_{STG}$	Storage Temperature Range	-55 to 150	°C	
$I_S$	Diode Continuous Forward Current	TA =25°C	0.1	A
<b>Mounted on Large Heat Sink</b>				
$I_{DM}$	Pulse Drain Current Tested (Silicon Limit) (Note1)	TA =25°C	0.4	A
$I_D$	Continuous Drain current	TA =25°C	0.1	A
$P_D$	Maximum Power Dissipation	TA =25°C	0.2	W
$R_{θJA}$	Thermal Resistance Junction-to-Ambient (Note2)		625	°C/W

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Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
<b>Static Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated)</b>						
V <sub>(BR)DSS</sub>	Drain- Source Breakdown Voltage	VGS=0V ID=250μA	30	--	--	V
I <sub>DSS</sub>	Zero Gate Voltage Drain current	VDS=30V,VGS=0V	--	--	1	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	VGS=±20V,VDS=0V	--	--	±10	μA
V <sub>GS(TH)</sub>	Gate Threshold Voltage	VDS=VGS,ID=100μA	0.8	--	1.5	V
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance (Note3)	VGS=4V, ID=0.01A	--	5	8	Ω
		VGS=2.5V, ID=0.001A	--	7	13	Ω
<b>Dynamic Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated) (Note4)</b>						
C <sub>iss</sub>	Input Capacitance	VDS=5V, VGS=0V, F=1MHz	--	13	--	pF
C <sub>oss</sub>	Output Capacitance		--	9	--	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		--	4	--	pF
<b>Switching Characteristics (Note4)</b>						
t <sub>d(on)</sub>	Turn-on Delay Time	VDS=5V, ID=0.01A, RL=500Ω, RG=10Ω, VGS=5V	--	15	--	nS
t <sub>r</sub>	Turn-on Rise Time		--	35	--	nS
t <sub>d(off)</sub>	Turn-off Delay Time		--	80	--	nS
t <sub>f</sub>	Turn-off Fall Time		--	80	--	nS

Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: pulse width ≤ 300 us, duty cycle ≤ 2%.
4. Guranteed by design, not subject to production testing.



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Typical Characteristics

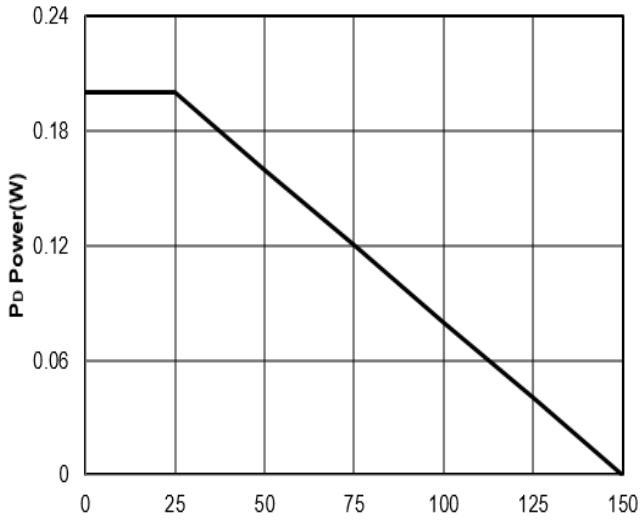


Figure1: Tj Junction Temperature (°C)

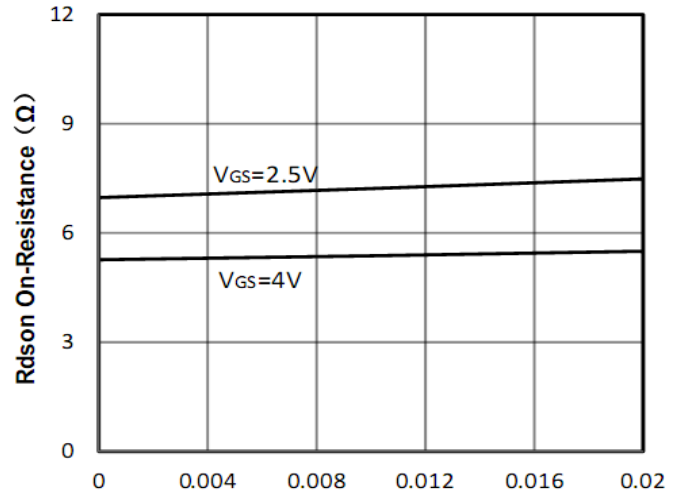


Figure2: Id Drain Current (A)

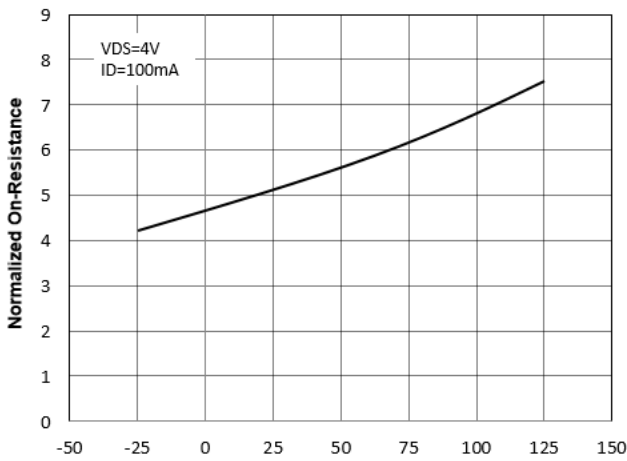


Figure3: Tj Junction Temperature (°C)

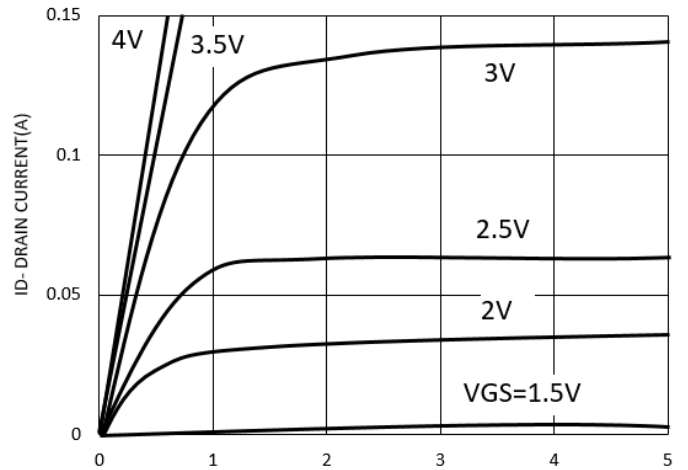


Figure4: Vds Drain-Source Voltage (V)

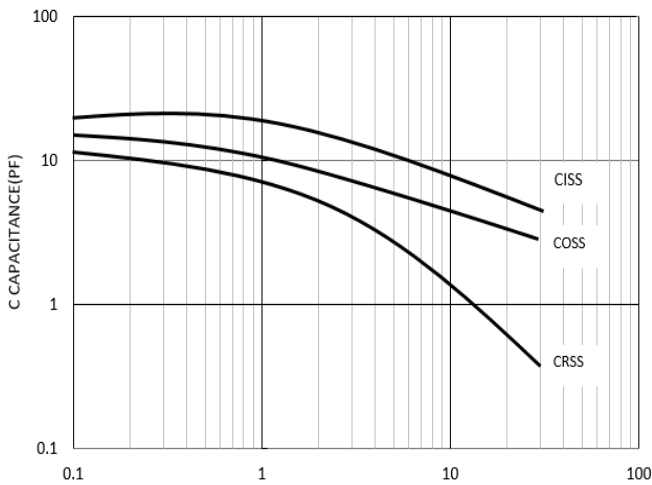


Figure5: Vds Drain-Source Voltage (V)

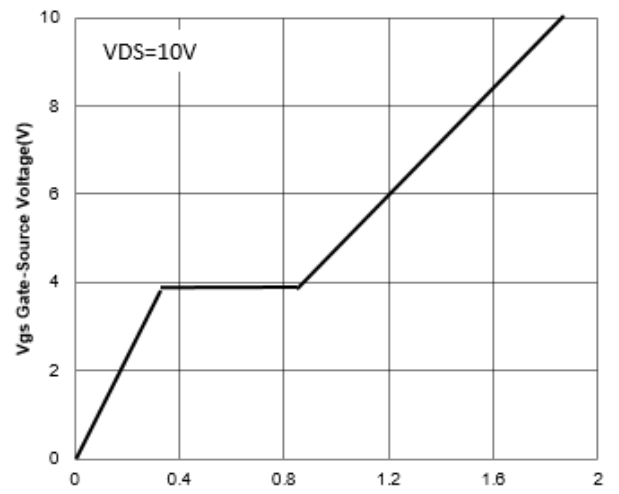


Figure6: Qg Gate Charge (nC)



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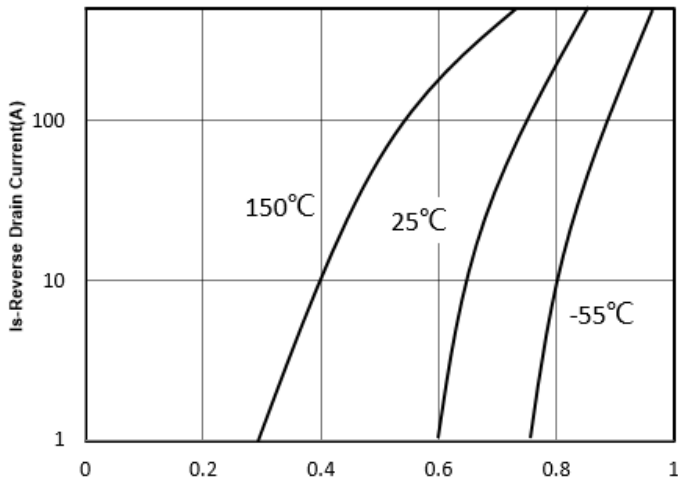


Figure7: Vsd Source-Drain Voltage (V)

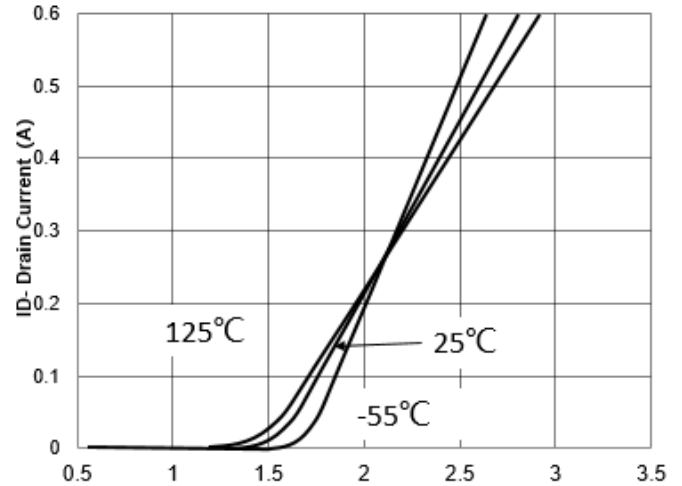


Figure8: Vgs Gate-Source Voltage (V)

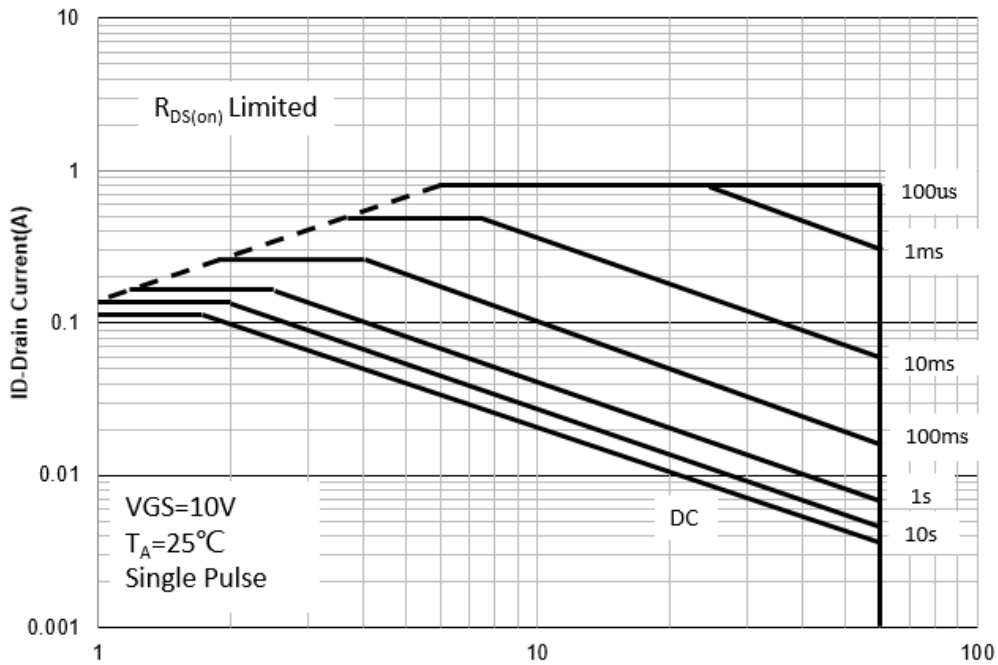


Figure9: Vsd Drain -Source Voltage (V)

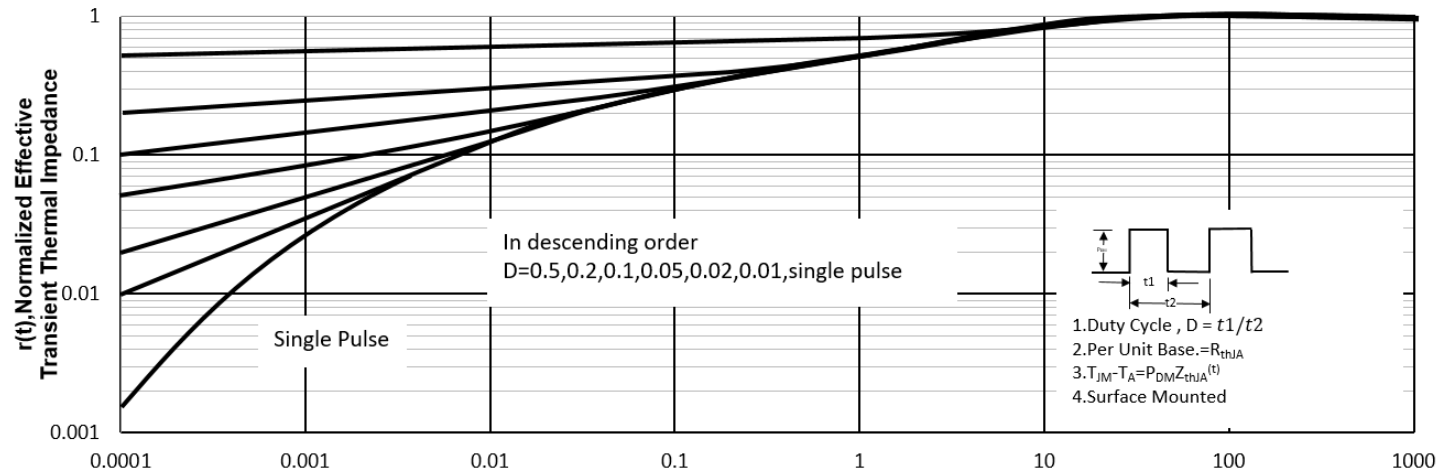


Figure10: Square Wave Pulse Duration (sec)

## 30V/0.1A N-Channel Advanced Power MOSFET

### Test Circuit and Waveform:

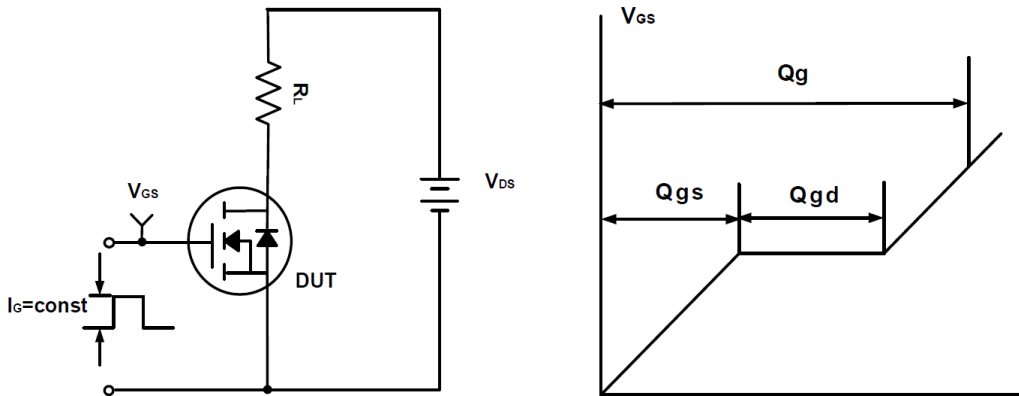


Figure A Gate Charge Test Circuit & Waveforms

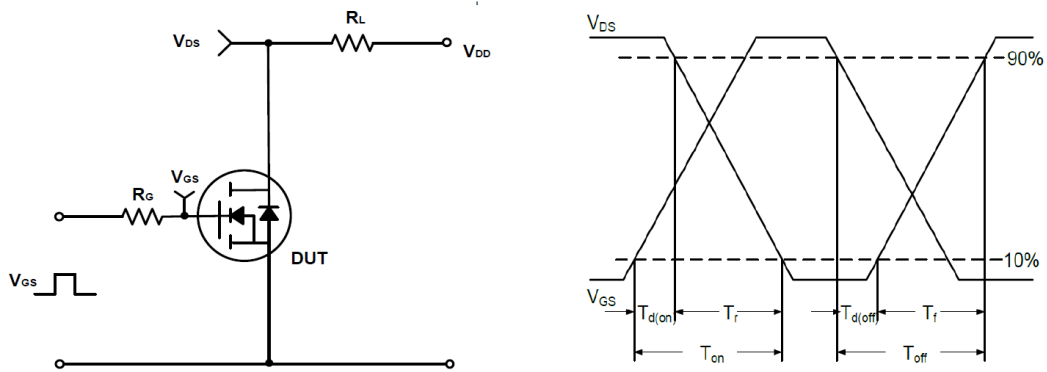


Figure B Switching Test Circuit & Waveforms

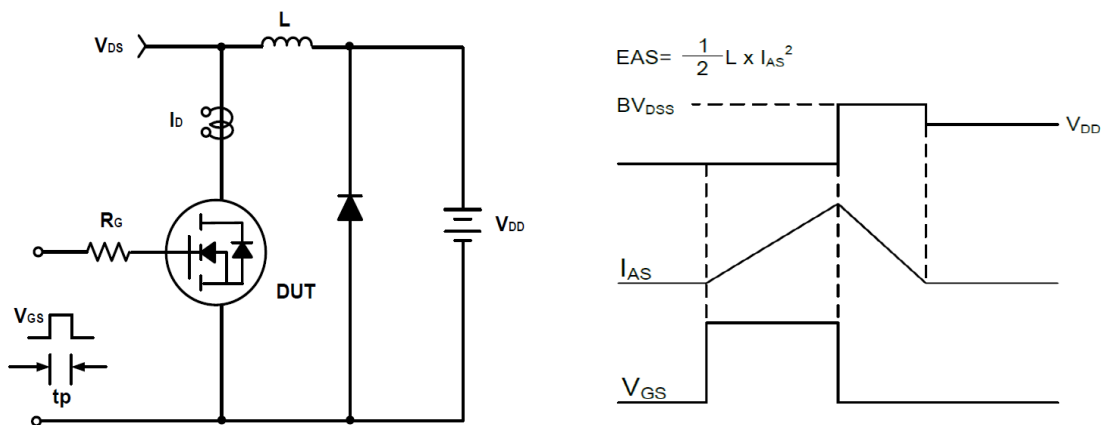
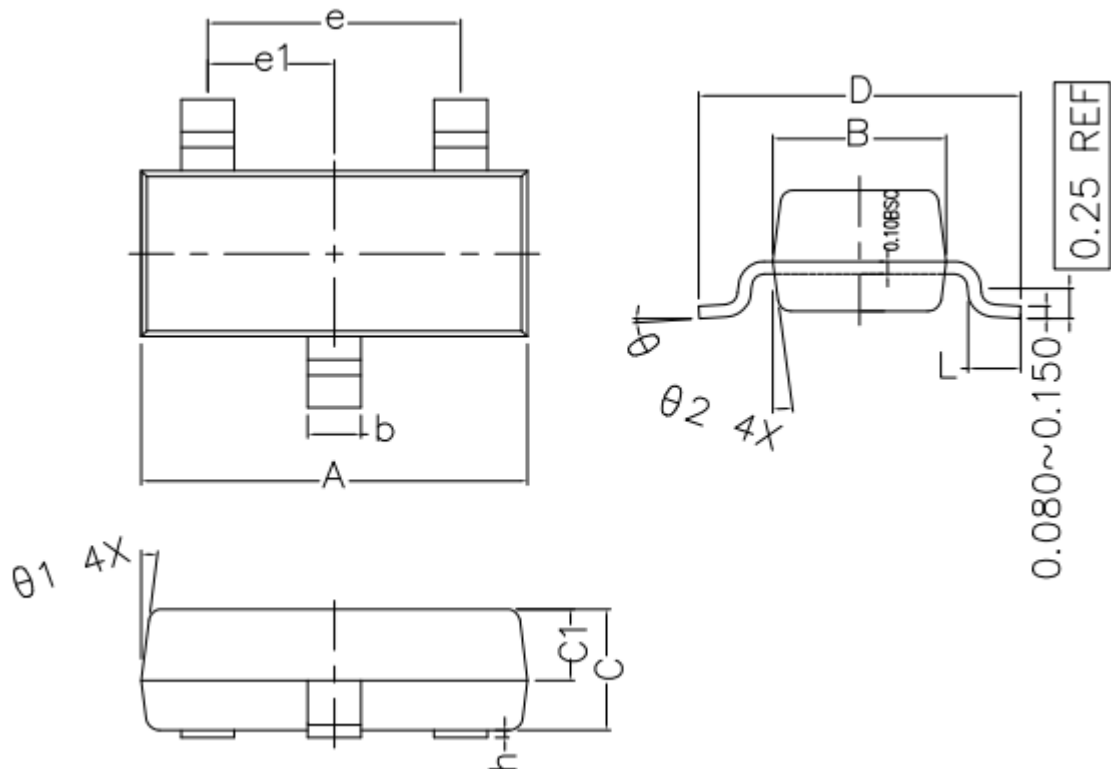


Figure C Unclamped Inductive Switching Circuit & Waveforms

**30V/0.1A N-Channel Advanced Power MOSFET**
**SOT-23 Package Outline Dimensions (Units: mm)**


COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	2.800	2.900	3.000
B	1.200	1.300	1.400
C	0.900	1.000	1.100
C1	0.500	0.550	0.600
D	2.250	2.400	2.550
L	0.300	0.400	0.500
h	0.010	0.050	0.100
b	0.300	0.400	0.500
e	1.90 TYPE		
e1	0.95 TYPE		
$\theta_1$	7° TYPE		
$\theta_2$	7° TYPE		
$\theta$	0° ~ 7°		