

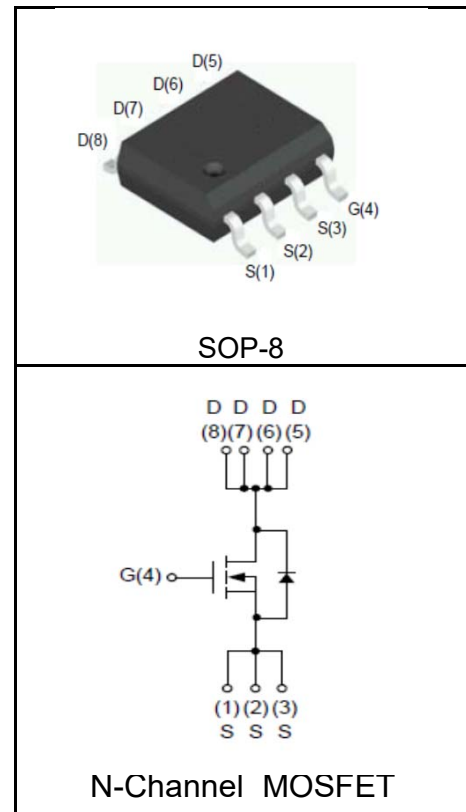
Features

- 80V/80A,
 $R_{DS(ON)} = 5.2m\Omega(Typ.)@V_{GS}=10V$
 $R_{DS(ON)} = 6.5m\Omega(Typ.)@V_{GS}=4.5V$
- Ultra Low On-Resistance
- High Switching Speed
- Lead Free and Green Devices Available (RoHS Compliant)

Applications

- Power Management.
- Switch Applications.
- Load switch

Pin Description



Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit	
Common Ratings ($T_A=25^\circ C$ Unless Otherwise Noted)				
V_{DSS}	Drain-Source Voltage	80	V	
V_{GSS}	Gate-Source Voltage	± 20		
T_J	Maximum Junction Temperature	150	$^\circ C$	
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$	
I_S	Diode Continuous Forward Current	$T_A=25^\circ C$	20	A
Mounted on Large Heat Sink				
$I_{DP}^{(1)}$	300 μs Pulse Drain Current Tested	$T_A=25^\circ C$	320	A
$I_D^{(2)}$	Continuous Drain Current($V_{GS}=10V$)	$T_A=25^\circ C$	80	A
		$T_A=70^\circ C$	50	
P_D	Maximum Power Dissipation	$T_A=25^\circ C$	2.5	W
		$T_A=70^\circ C$	1.6	
$R_{\theta JC}$	Thermal Resistance-Junction to Case	-	$^\circ C/W$	
$R_{\theta JA}^{(3)}$	Thermal Resistance-Junction to Ambient	50	$^\circ C/W$	
Drain-Source Avalanche Ratings				
$E_{AS}^{(4)}$	Avalanche Energy, Single Pulsed	TBD	mJ	

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)

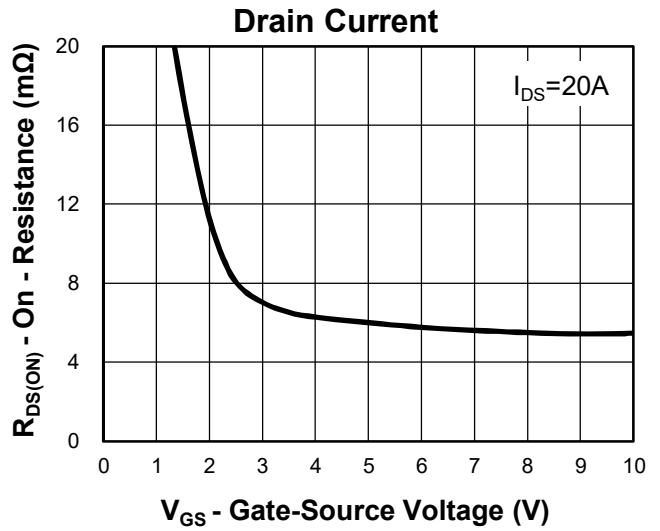
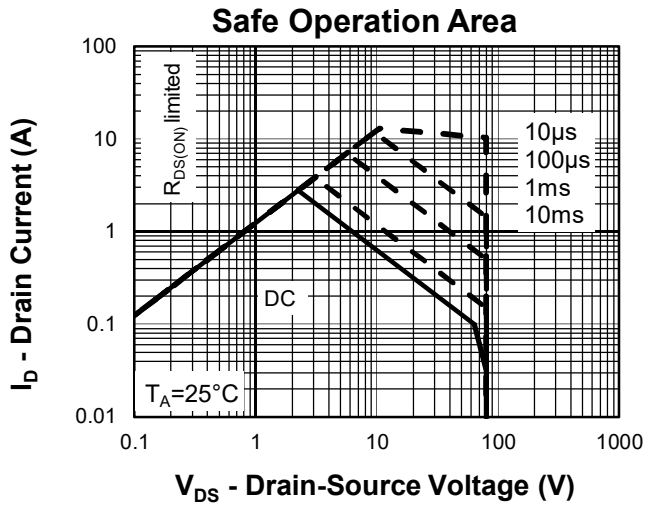
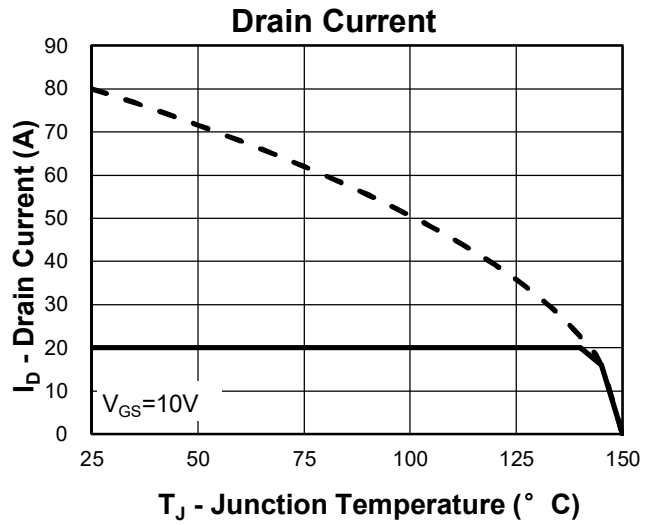
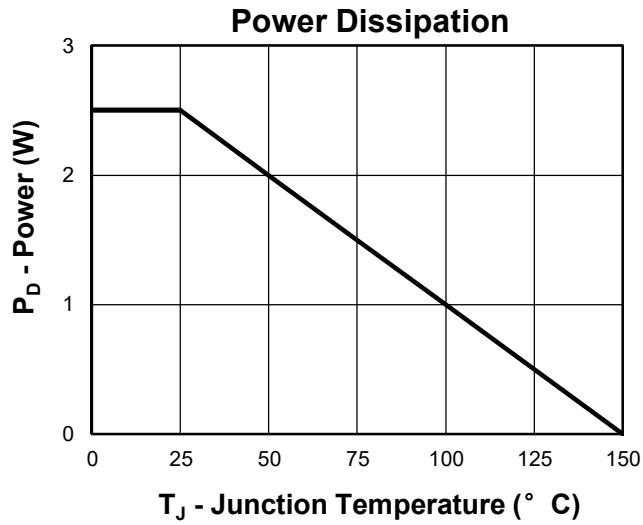
Symbol	Parameter	Test Condition	RUH8080H			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_{DS}=250\mu A$	80			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=80V, V_{GS}=0V$			1	μA
		$T_J=125^{\circ}\text{C}$			30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	1	1.6	2.5	V
I_{GSS}	Gate Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
$R_{DS(ON)}^{(5)}$	Drain-Source On-state Resistance	$V_{GS}=10V, I_{DS}=20A$		5.2	6	$m\Omega$
		$V_{GS}=4.5V, I_{DS}=16A$		6.5	7.5	$m\Omega$
Diode Characteristics						
$V_{SD}^{(5)}$	Diode Forward Voltage	$I_{SD}=20A, V_{GS}=0V$			1.2	V
t_{rr}	Reverse Recovery Time	$I_{SD}=20A, di_{SD}/dt=100A/\mu s$		34		ns
Q_{rr}	Reverse Recovery Charge			168		nC
Dynamic Characteristics⁽⁶⁾						
R_G	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, F=1\text{MHz}$		3.3		Ω
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=40V,$ Frequency=1.0MHz		4150		pF
C_{oss}	Output Capacitance			632		
C_{rss}	Reverse Transfer Capacitance			35		
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD}=40V, I_{DS}=20A,$ $V_{GEN}=10V, R_G=4.7\Omega$		13		ns
t_r	Turn-on Rise Time			6		
$t_{d(OFF)}$	Turn-off Delay Time			36		
t_f	Turn-off Fall Time			7		
Gate Charge Characteristics⁽⁶⁾						
Q_g	Total Gate Charge	$V_{DS}=64V, V_{GS}=10V,$ $I_{DS}=20A$		68		nC
Q_{gs}	Gate-Source Charge			21		
Q_{gd}	Gate-Drain Charge			16		

- Notes:
- ① Pulse width limited by safe operating area.
 - ② Calculated continuous current based on maximum allowable junction temperature. The package limitation current is 20A.
 - ③ When mounted on 1 inch square copper board, $t_s \leq 10\text{sec}$.
 - ④ Limited by T_{Jmax} . Starting $T_J = 25^{\circ}\text{C}$.
 - ⑤ Pulse test; Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
 - ⑥ Guaranteed by design, not subject to production testing.

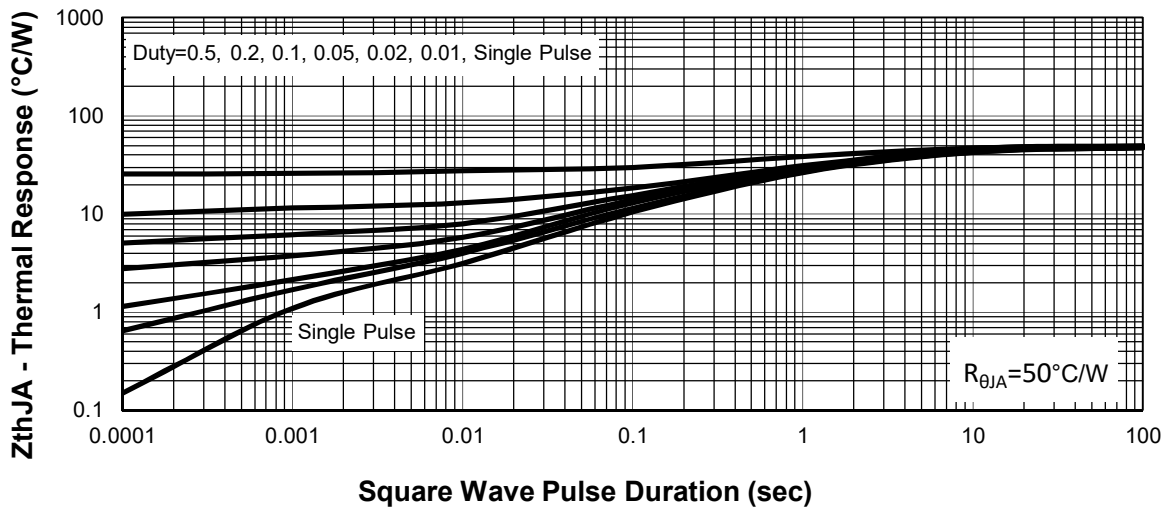
Ordering and Marking Information

Device	Marking	Package	Packaging	Quantity	Reel Size	Tape width
RUH8080H	RUH8080H	SOP-8	Tape&Reel	2500	13"	12mm

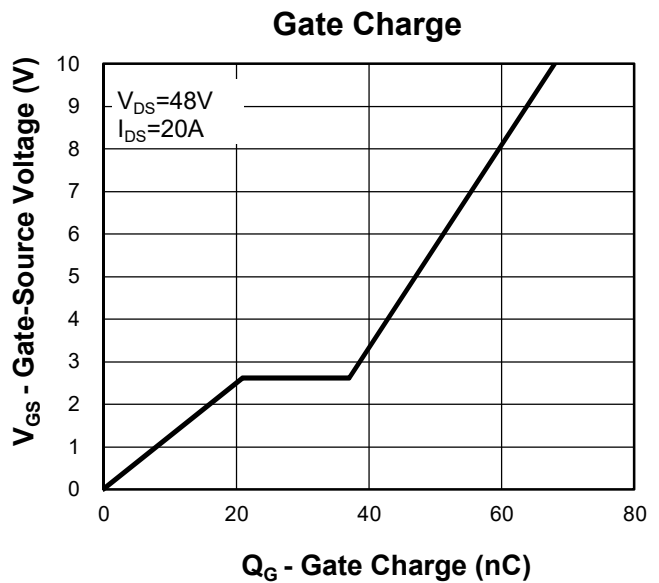
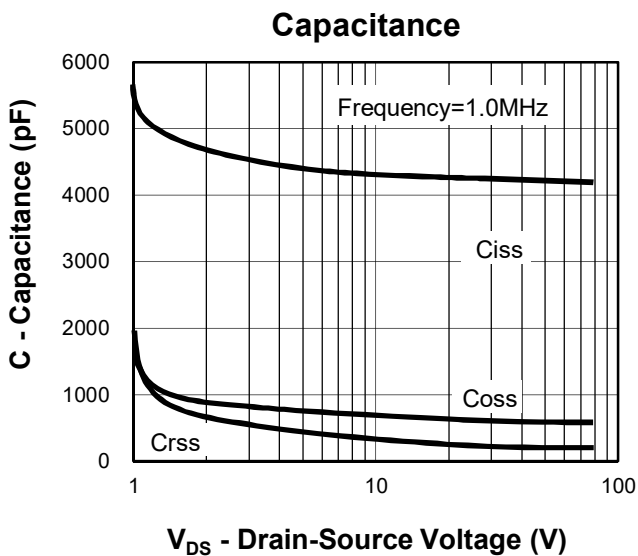
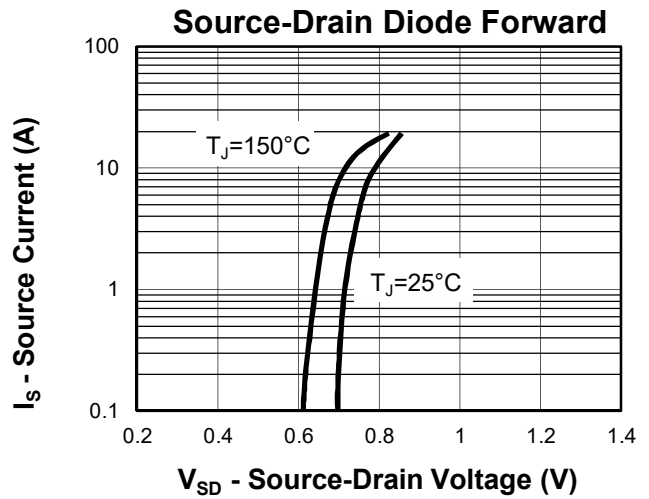
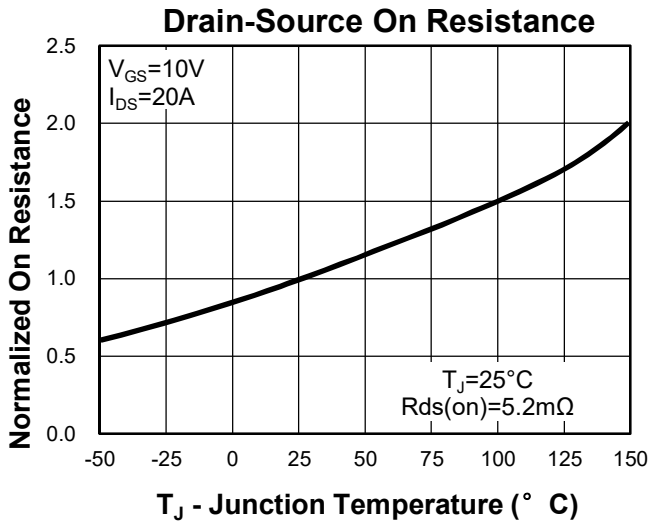
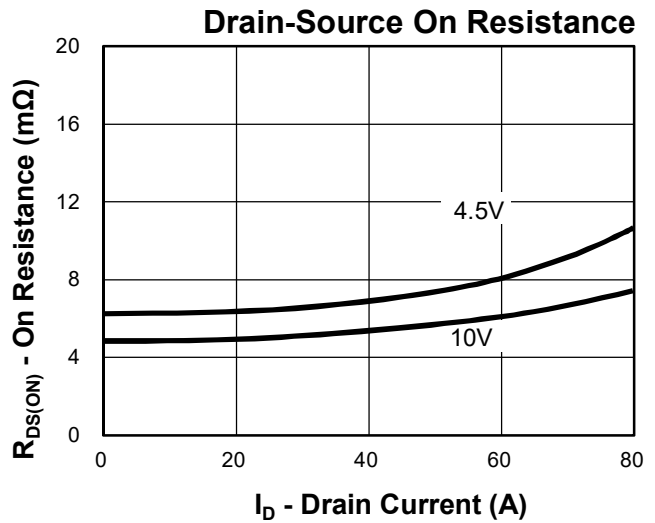
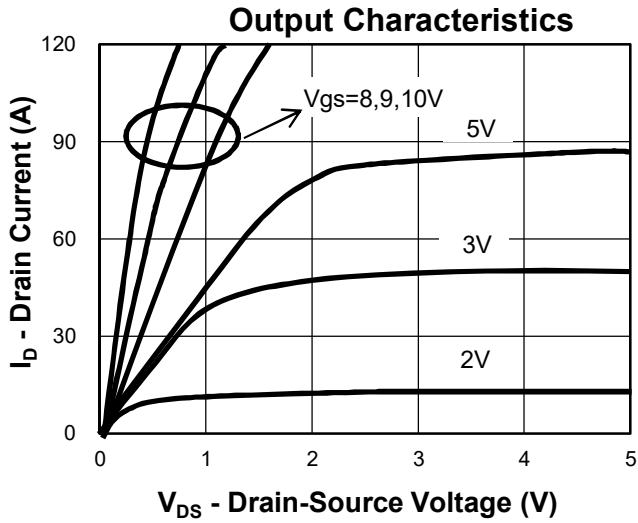
Typical Characteristics



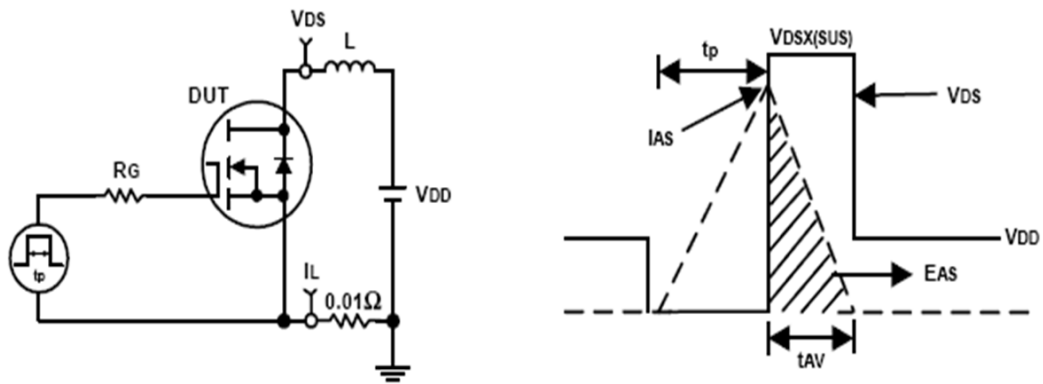
Thermal Transient Impedance



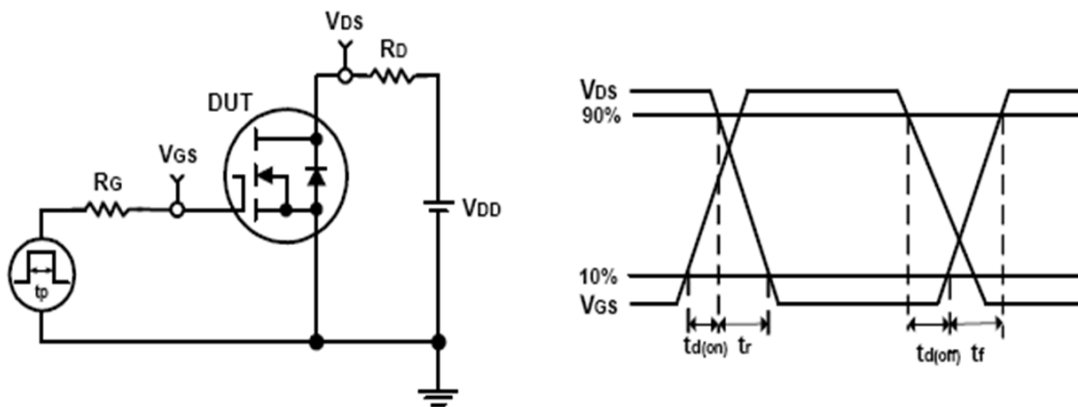
Typical Characteristics



Avalanche Test Circuit and Waveforms

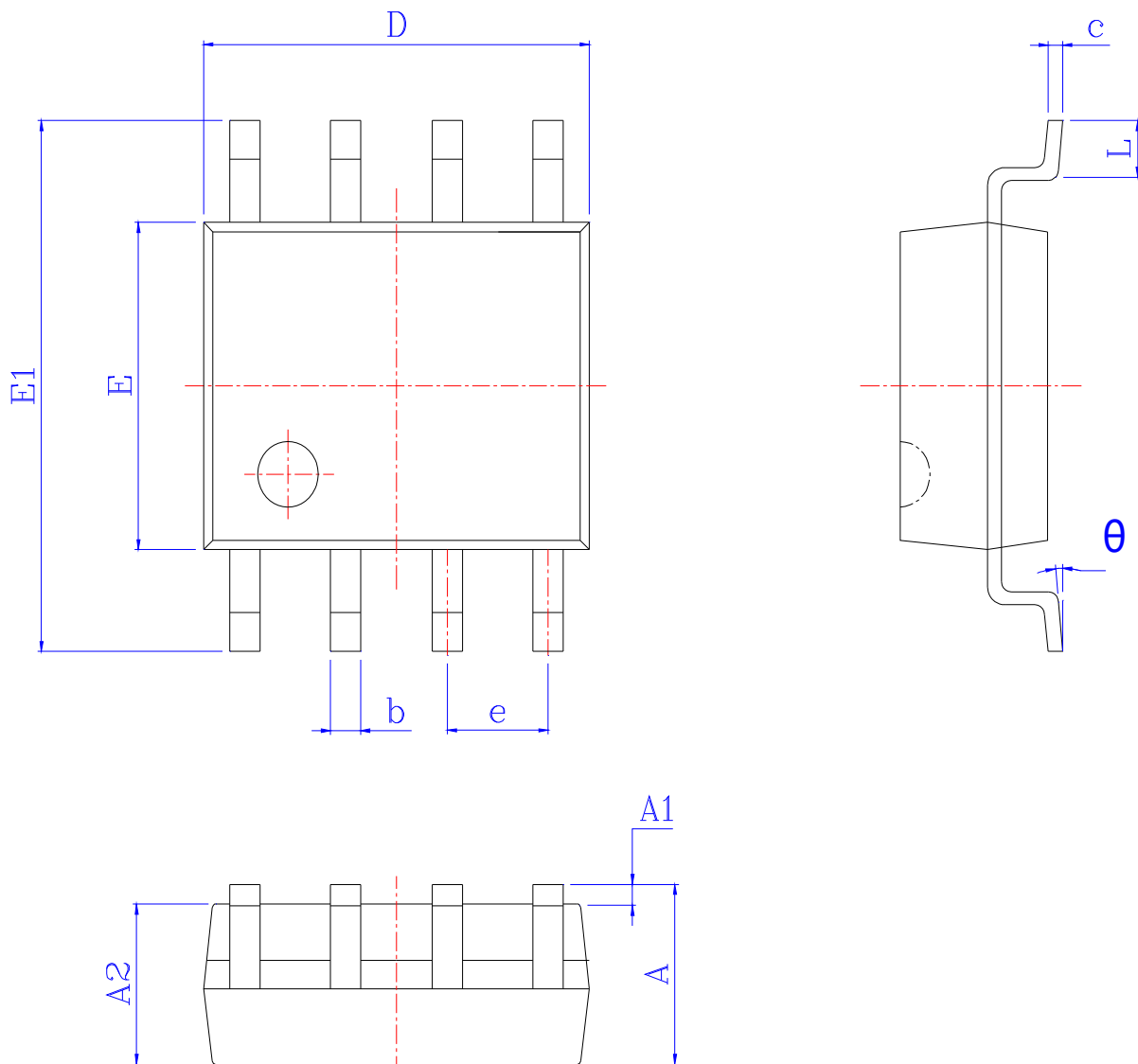


Switching Time Test Circuit and Waveforms



Package Information

SOP-8



SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.300	1.525	1.750	0.051	0.060	0.069
A1	0.050	0.150	0.250	0.002	0.006	0.010
A2	1.300	1.450	1.550	0.051	0.057	0.061
b	0.330	0.420	0.510	0.013	0.017	0.020
c	0.170	*	0.260	0.007	*	0.010
D	4.700	4.900	5.100	0.185	0.193	0.201
E	3.700	3.900	4.100	0.146	0.154	0.161
E1	5.800	6.000	6.200	0.228	0.236	0.244
e	1.270 BSC			0.050 BSC		
L	0.400	0.835	1.270	0.016	0.033	0.050
θ	0°	*	8°	0°	*	8°

Customer Service**Worldwide Sales and Service:**

Sales@ruichips.com

Technical Support:

Technical@ruichips.com

Investor Relations Contacts:

Investor@ruichips.com

Marcom Contact:

Marcom@ruichips.com

Editorial Contact:

Editorial@ruichips.com

HR Contact:

HR@ruichips.com

Legal Contact:

Legal@ruichips.com

Shen Zhen RUICHIPS Semiconductor CO., LTD4th Floor, Block 8, Changyuan New Material Port, Keyuan Middle Road, Science & Industry Park,
Nanshan District, Shenzhen, CHINA**TEL:** (86-755) 8311-5334**FAX:** (86-755) 8311-4278**E-mail:** Sales-SZ@ruichips.com