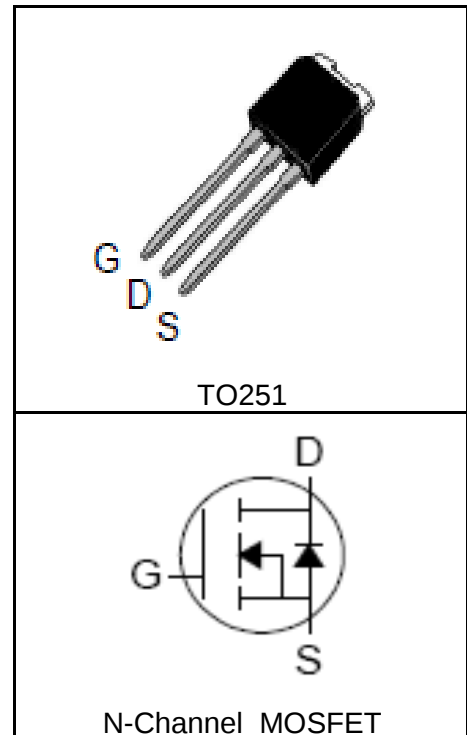


Features

- 700V/2A,
 $R_{DS(ON)} = 5000m\Omega(Typ.)@V_{GS}=10V$
- Super High Dense Cell Design
- Fast Switching
- 100% avalanche tested
- Lead Free and Green Devices Available (RoHS Compliant)

Pin Description



Applications

- High efficiency switch mode power supplies

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (T _C =25°C Unless Otherwise Noted)				
V _{DSS}	Drain-Source Voltage		700	V
V _{GSS}	Gate-Source Voltage		±30	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current	T _C =25°C	2	A
Mounted on Large Heat Sink				
I _{DP} ^①	300μs Pulse Drain Current Tested	T _C =25°C	8	A
I _D ^②	Continuous Drain Current(V _{GS} =10V)	T _C =25°C	2	A
		T _C =100°C	1.3	
P _D	Maximum Power Dissipation	T _C =25°C	56	W
		T _C =100°C	22	
R _{θJC}	Thermal Resistance-Junction to Case		2.2	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient		100	°C/W
Drain-Source Avalanche Ratings				
E _{AS} ^③	Avalanche Energy, Single Pulsed		5	mJ

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

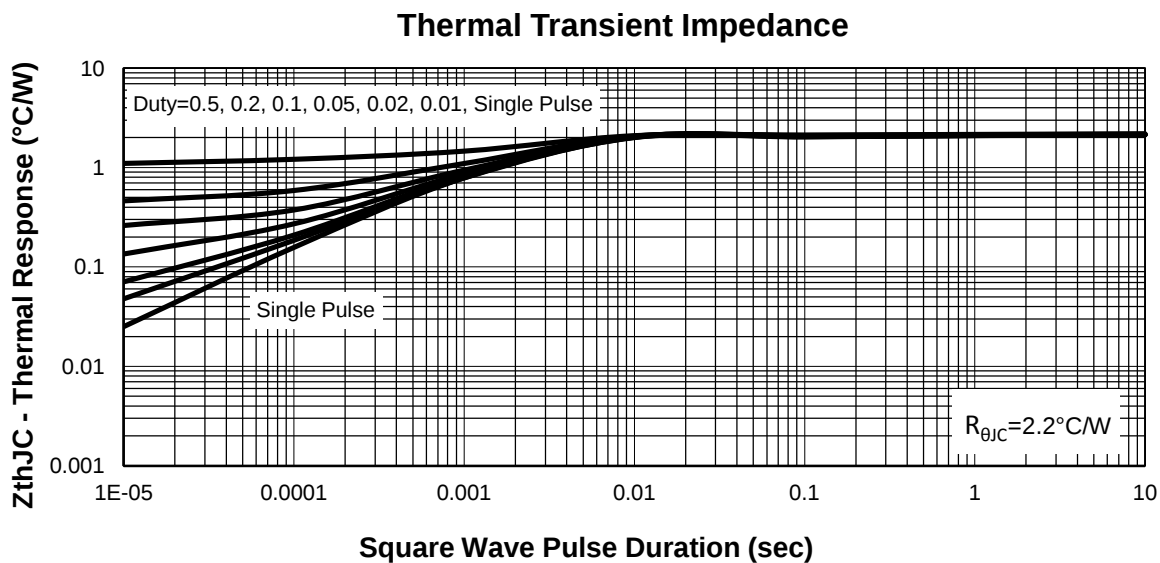
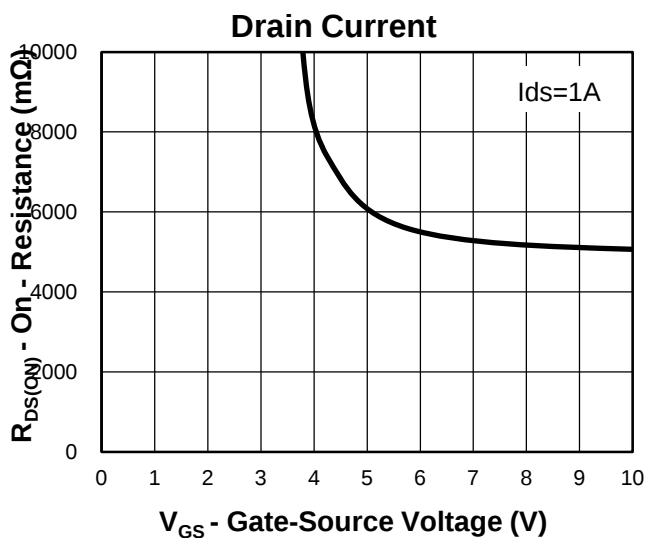
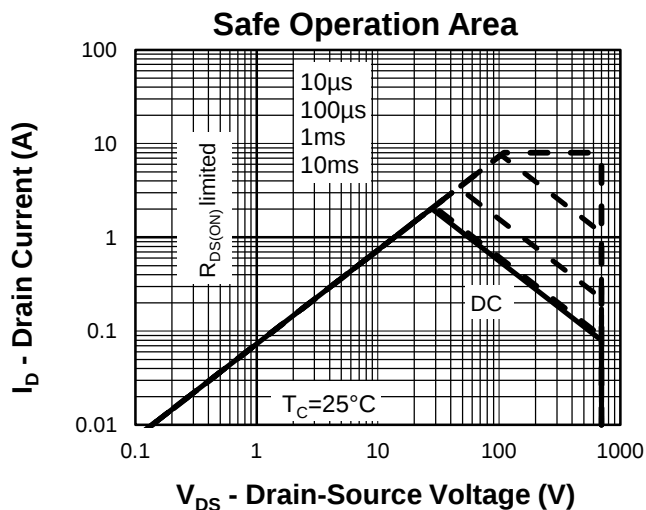
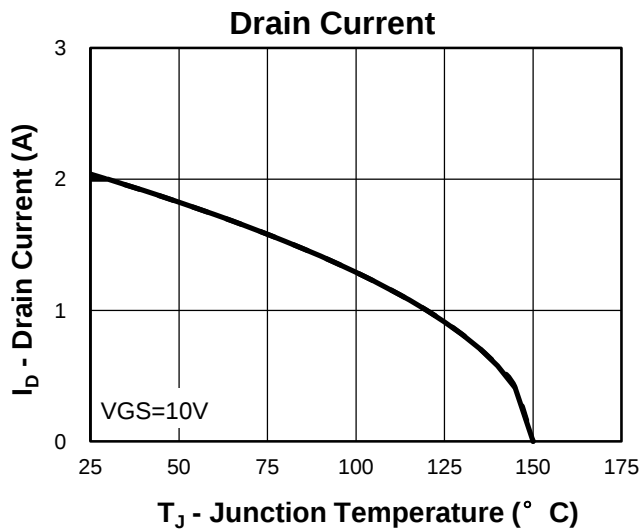
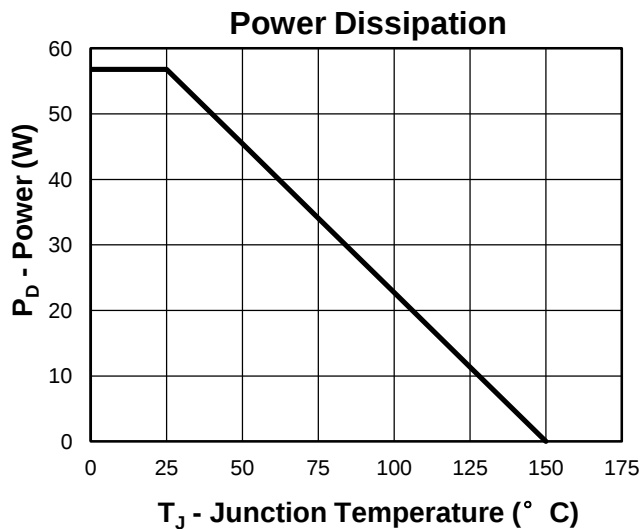
Symbol	Parameter	Test Condition	RU7H2K			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	700			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =700V, V _{GS} =0V			1	μA
			T _J =125°C		30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	2		4	V
I _{GSS}	Gate Leakage Current	V _{GS} =±30V, V _{DS} =0V			±100	nA
R _{DS(ON)} ^④	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =1A		5000	6500	mΩ
Diode Characteristics						
V _{SD} ^④	Diode Forward Voltage	I _{SD} =2A, V _{GS} =0V			1.2	V
t _{rr}	Reverse Recovery Time	I _{SD} =2A, dI _{SD} /dt=100A/μs		210		ns
Q _{rr}	Reverse Recovery Charge			2		μC
Dynamic Characteristics ^⑤						
R _G	Gate Resistance	V _{GS} =0V,V _{DS} =0V,F=1MHz		3		Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =350V, Frequency=1.0MHz		280		pF
C _{oss}	Output Capacitance			40		
C _{rss}	Reverse Transfer Capacitance			5		
t _{d(ON)}	Turn-on Delay Time	V _{DD} =350V, R _L =175Ω, I _{DS} =2A, V _{GEN} =10V, R _G =25Ω		30		ns
t _r	Turn-on Rise Time			70		
t _{d(OFF)}	Turn-off Delay Time			85		
t _f	Turn-off Fall Time			55		
Gate Charge Characteristics ^⑤						
Q _g	Total Gate Charge	V _{DS} =560V, V _{GS} =10V, I _{DS} =2A		10		nC
Q _{gs}	Gate-Source Charge			1.6		
Q _{gd}	Gate-Drain Charge			4		

- Notes:
- ① Pulse width limited by safe operating area.
 - ② Calculated continuous current based on maximum allowable junction temperature.
 - ③ Limited by T_{Jmax} , $I_{AS}=3A$, $V_{DD}=100V$, $R_G=50\Omega$, Starting $T_J=25^{\circ}\text{C}$.
 - ④ Pulse test; Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
 - ⑤ Guaranteed by design, not subject to production testing.

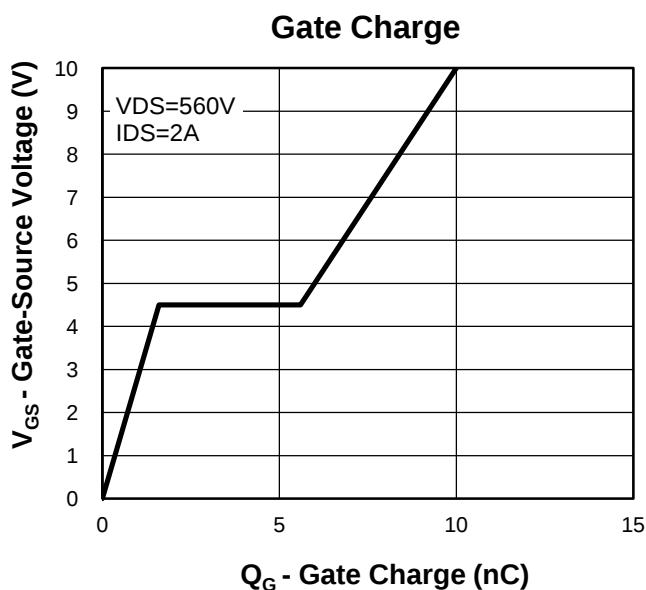
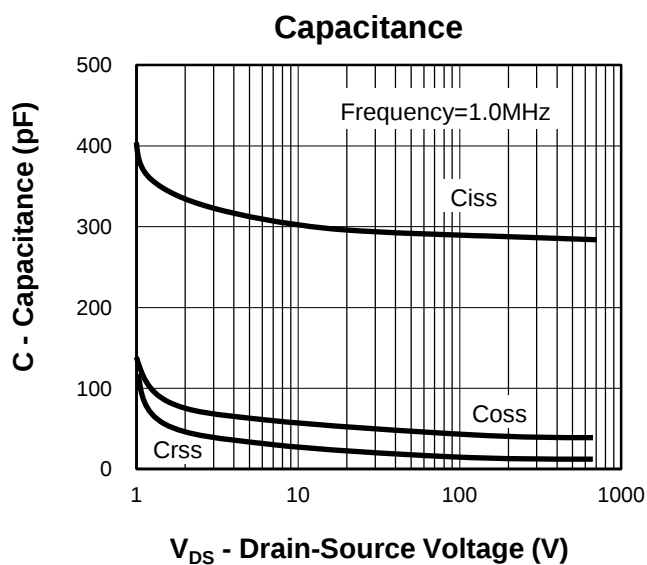
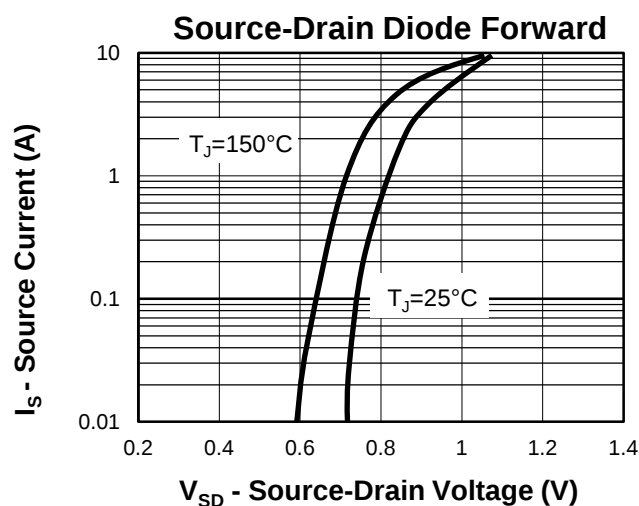
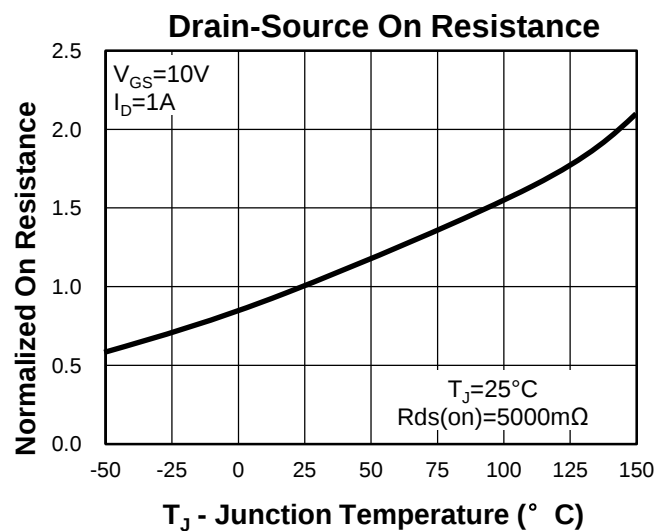
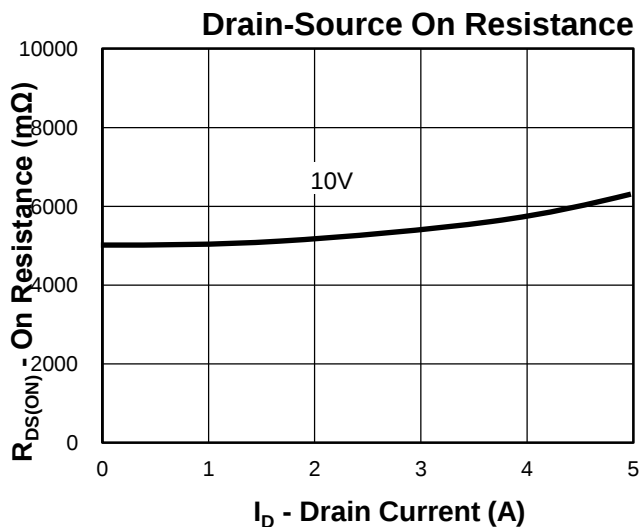
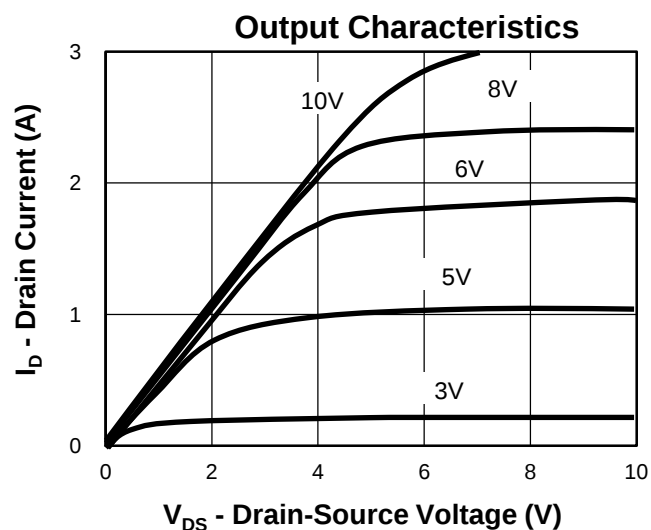
Ordering and Marking Information

Device	Marking	Package	Packaging	Quantity	Reel Size	Tape width
RU7H2K	RU7H2K	TO251	Tube	75	-	-
RU7H2K2	RU7H2K	TO251-S	Tube	75	-	-

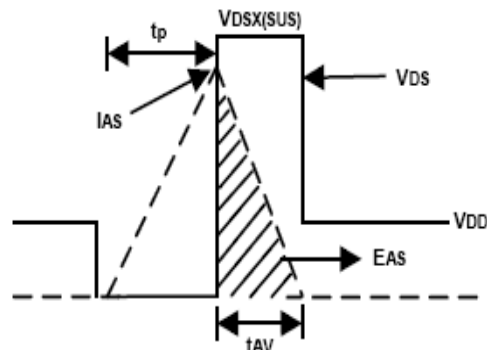
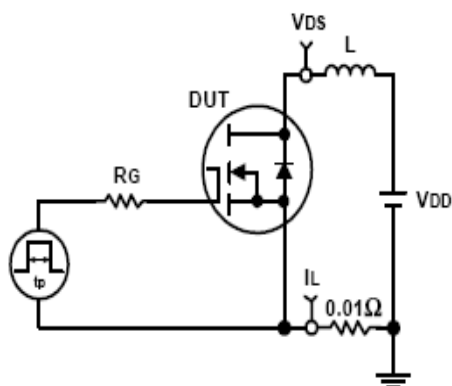
Typical Characteristics



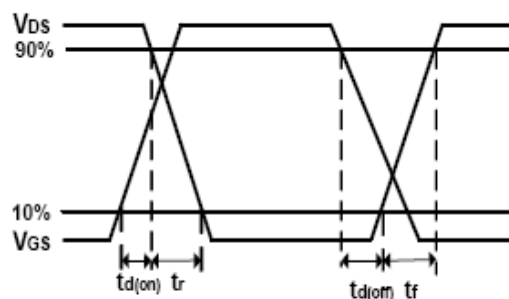
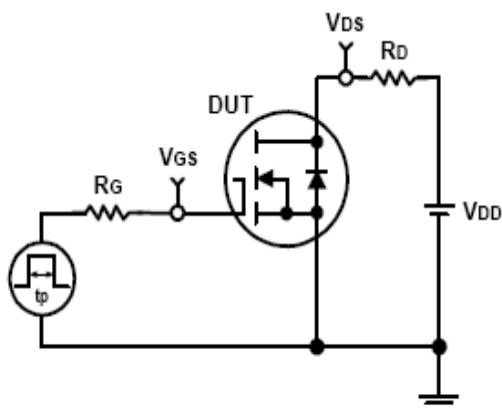
Typical Characteristics



Avalanche Test Circuit and Waveforms

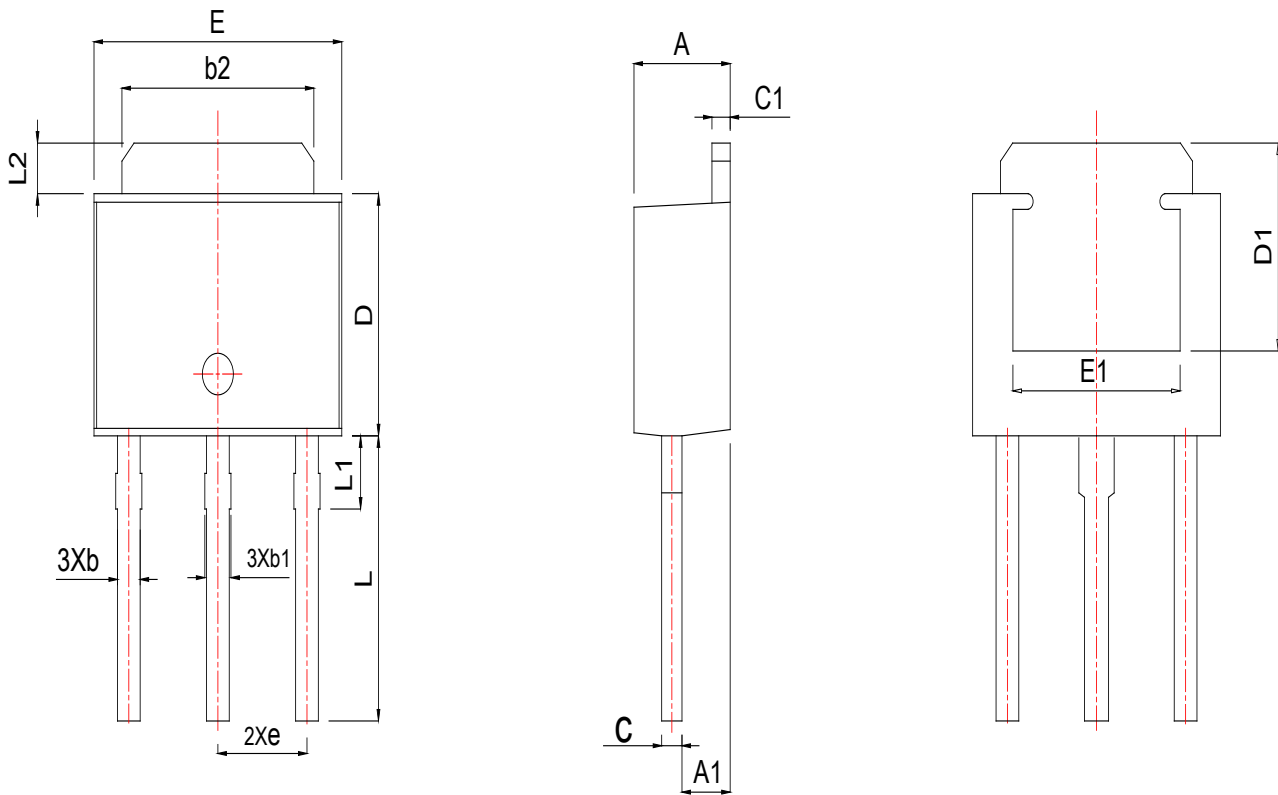


Switching Time Test Circuit and Waveforms



Package Information

TO251



SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	2.220	2.320	2.420	0.087	0.091	0.095
A1	0.890	1.015	1.140	0.035	0.040	0.045
b	0.550	0.610	0.670	0.022	0.024	0.026
b1	0.760	0.860	0.960	0.030	0.034	0.038
b2	5.200	5.300	5.400	0.205	0.209	0.213
c	0.460	0.515	0.570	0.018	0.020	0.022
c1	0.450	0.500	0.550	0.018	0.020	0.022
D	5.950	6.100	6.250	0.234	0.240	0.246
D1	4.200	4.350	4.500	0.165	0.171	0.177
E	6.400	6.550	6.700	0.252	0.258	0.264
E1	4.750	4.800	4.850	0.187	0.189	0.191
e	2.280 REF			0.090 REF		
L	8.900	9.200	9.500	0.350	0.362	0.374
L1	1.900	2.095	2.290	0.075	0.082	0.090
L2	0.900	0.950	1.000	0.035	0.037	0.039

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.comm

HR Contact:

HR@ruichips.com

Legal Contact:

Legal@ruichips.com

Shen Zhen RUICHIPS Semiconductor CO., LTD

Room 501, the 5floor An Tong Industrial Building,
NO.207 Mei Hua Road Fu Tian Area Shen Zhen City, CHINA

TEL: (86-755) 8311-5334

FAX: (86-755) 8311-4278

E-mail: Sales-SZ@ruichips.com