

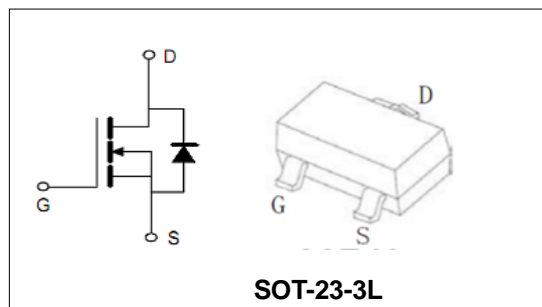
**20V/8A N-Channel Advanced Power MOSFET****Features**

- Advanced Trench Technology.
- Excellent RDS(ON) and Low Gate Charge
- Lead free product is acquired

BVDSS	20	V
ID	8	A
RDSON@VGS=4.5V	11	mΩ
RDSON@VGS=2.5V	14	mΩ

**Applications**

- Load Switch
- PWM Application
- Power management

**Order Information**

Product	Package	Marking	Reel Size	Reel	Carton
PTL2208	SOT-23-3L	2208	13inch	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	20	V	
$V_{GS}$	Gate-Source Voltage	±12	V	
$T_J$	Maximum Junction Temperature	150	°C	
$T_{STG}$	Storage Temperature Range	-55 to 150	°C	
$I_S$	Diode Continuous Forward Current	TC =25°C	8	A
<b>Mounted on Large Heat Sink</b>				
$I_{DM}$	Pulse Drain Current Tested (Silicon Limit) (Note1)	TC =25°C	32	A
$I_D$	Continuous Drain current	TC =25°C	8	A
$P_D$	Maximum Power Dissipation	TC =25°C	1.5	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient (Note2)		83.3	°C/W



## 20V/8A N-Channel Advanced Power MOSFET

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	20	--	--	V
I <sub>DSS</sub>	Zero Gate Voltage Drain current	VDS=20V,VGS=0V	--	--	1	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	VGS=±12V,VDS=0V	--	--	±100	nA
V <sub>GS(TH)</sub>	Gate Threshold Voltage	VDS=VGS,ID=250μA	0.5	0.75	1.2	V
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance (Note3)	VGS=4.5V, ID=7A	--	11	14	mΩ
		VGS=2.5V, ID=5A	--	14	22.5	mΩ
<b>Dynamic Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated) (Note5)</b>						
C <sub>iss</sub>	Input Capacitance	VDS=10V, VGS=0V, F=1MHz	--	1000	--	pF
C <sub>oss</sub>	Output Capacitance		--	182	--	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		--	164	--	pF
Q <sub>g</sub>	Total Gate Charge	VDS=10V, ID=4A, VGS=4.5V	--	15	--	nC
Q <sub>gs</sub>	Gate-Source Charge		--	2	--	nC
Q <sub>gd</sub>	Gate-Drain Charge		--	5.2	--	nC
<b>Switching Characteristics (Note4)</b>						
t <sub>d(on)</sub>	Turn-on Delay Time	VDS=10V, ID=4A, RG=3Ω, VGS=4.5V	--	9	--	nS
t <sub>r</sub>	Turn-on Rise Time		--	25	--	nS
t <sub>d(off)</sub>	Turn-off Delay Time		--	37	--	nS
t <sub>f</sub>	Turn-off Fall Time		--	14	--	nS
<b>Source- Drain Diode Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated)</b>						
V <sub>SD</sub>	Forward on voltage	IS=2.6A,VGS=0V	--	--	1.2	V

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

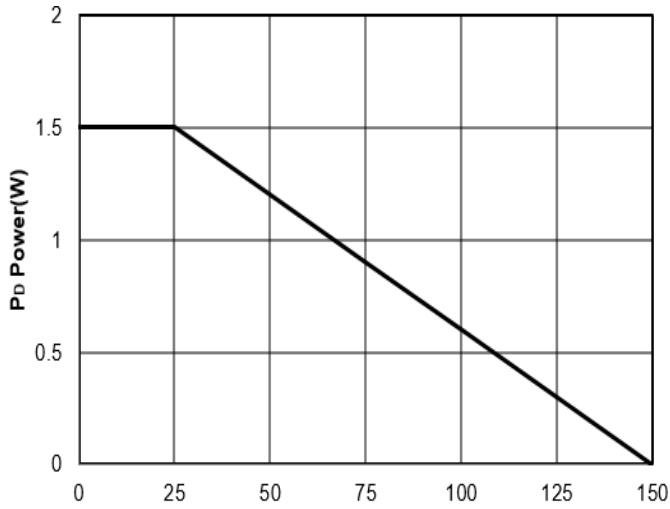


Figure1: Tj Junction Temperature (°C)

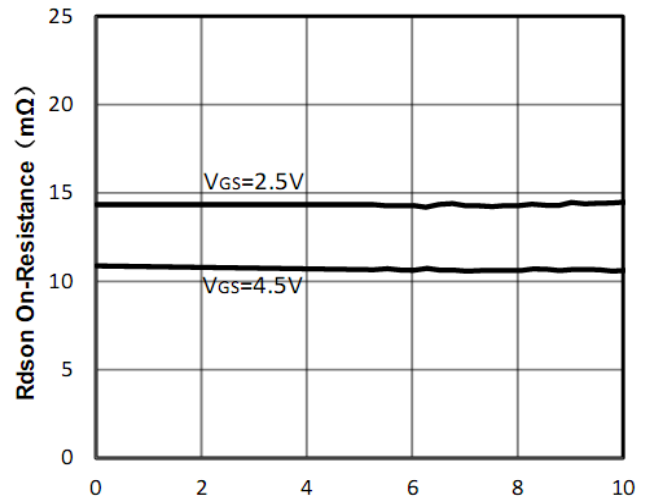


Figure2: Id Drain Current (A)

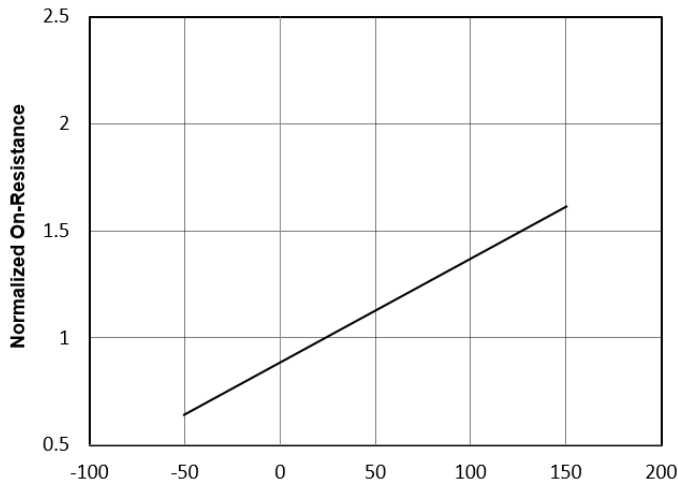


Figure3: Tj Junction Temperature (°C)

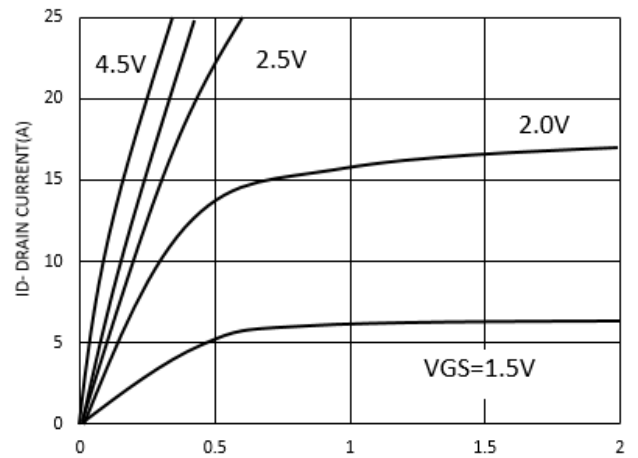


Figure4: Vds Drain-Source Voltage (V)

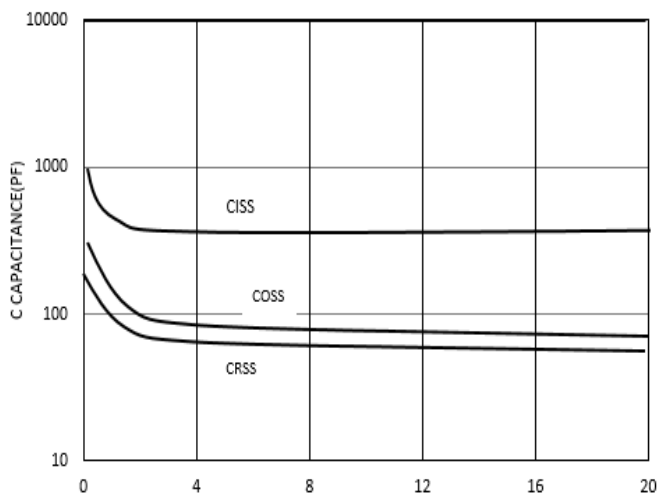


Figure5: Vds Drain-Source Voltage (V)

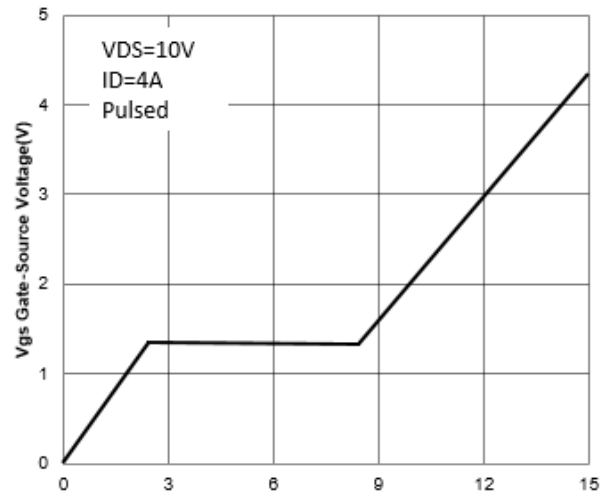


Figure6: Qg Gate Charge (nC)



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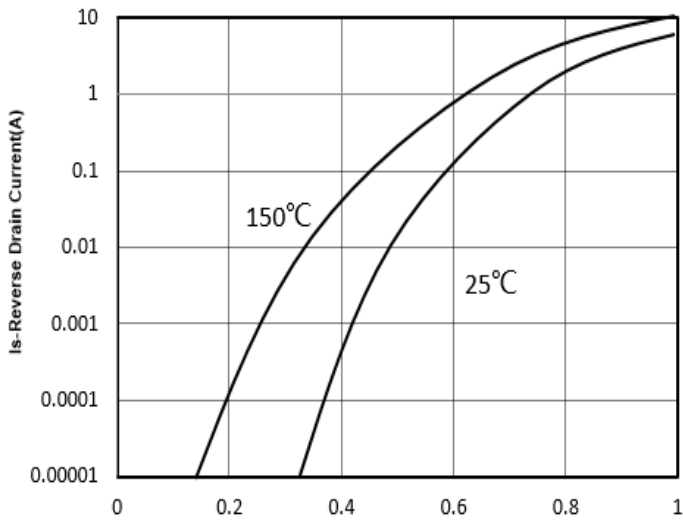


Figure7: Vsd Source-Drain Voltage (V)

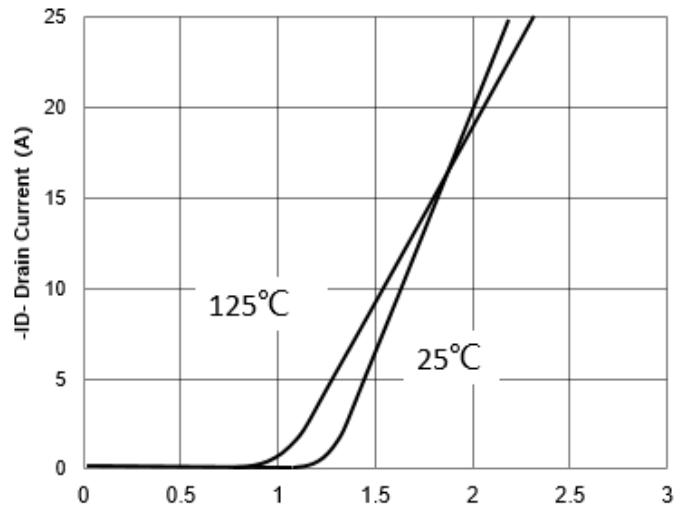


Figure8: Vgs Gate-Source Voltage (V)

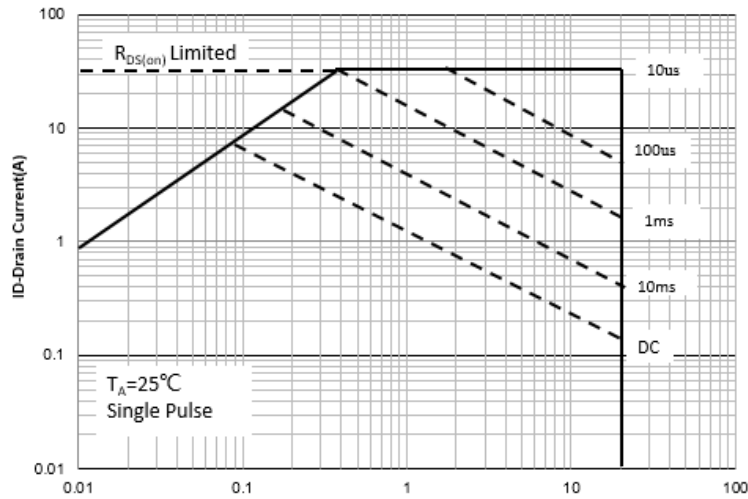


Figure9: Vds Drain -Source Voltage (V)

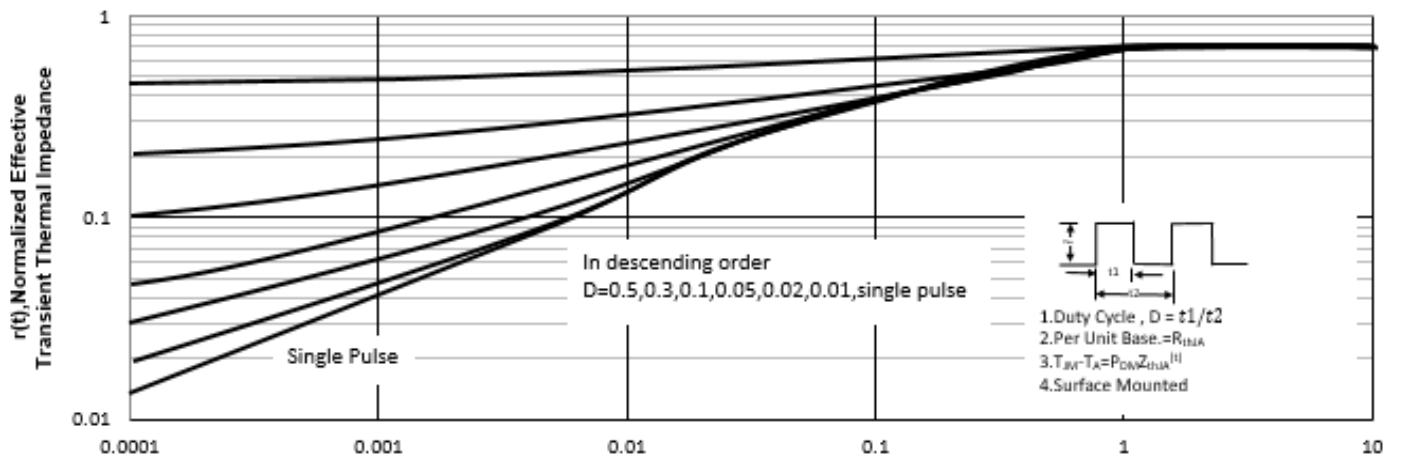
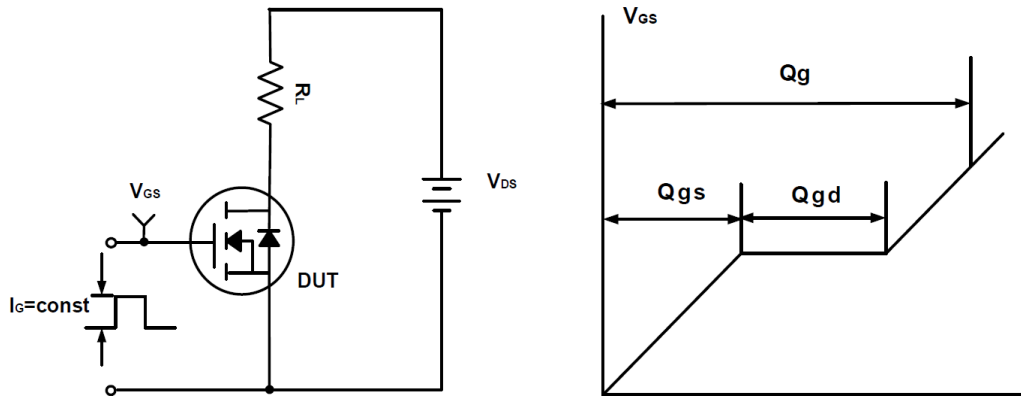
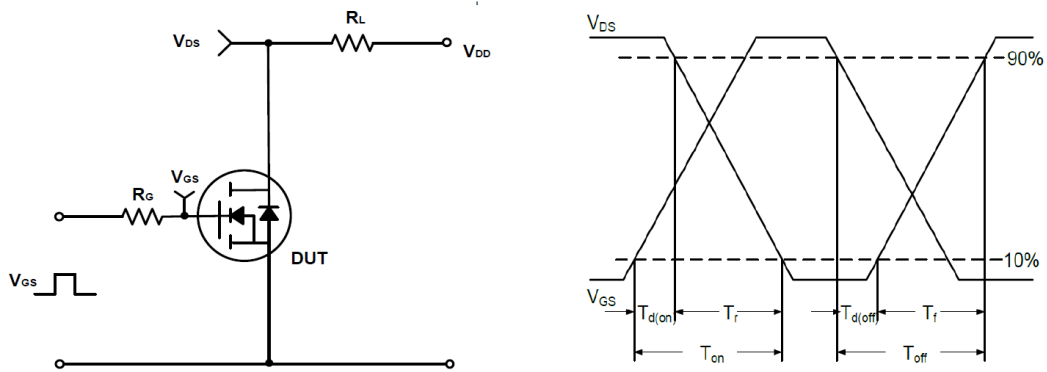
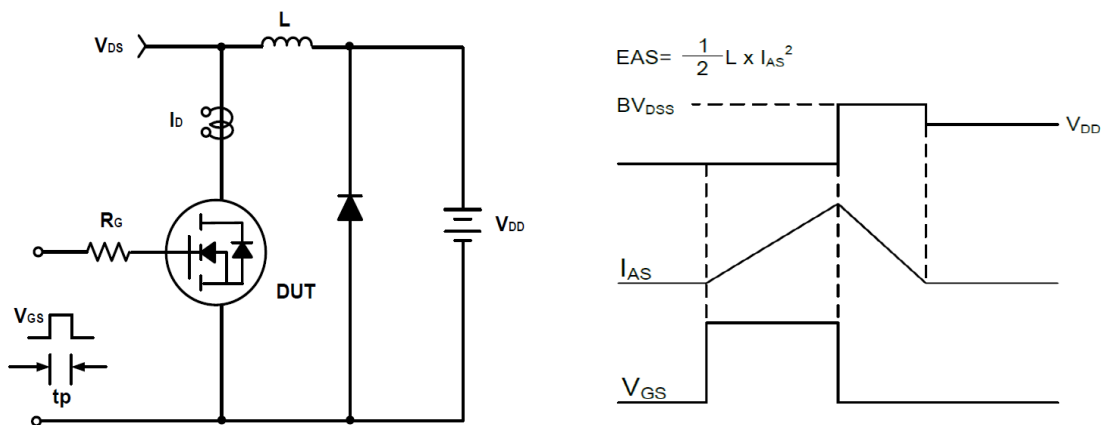
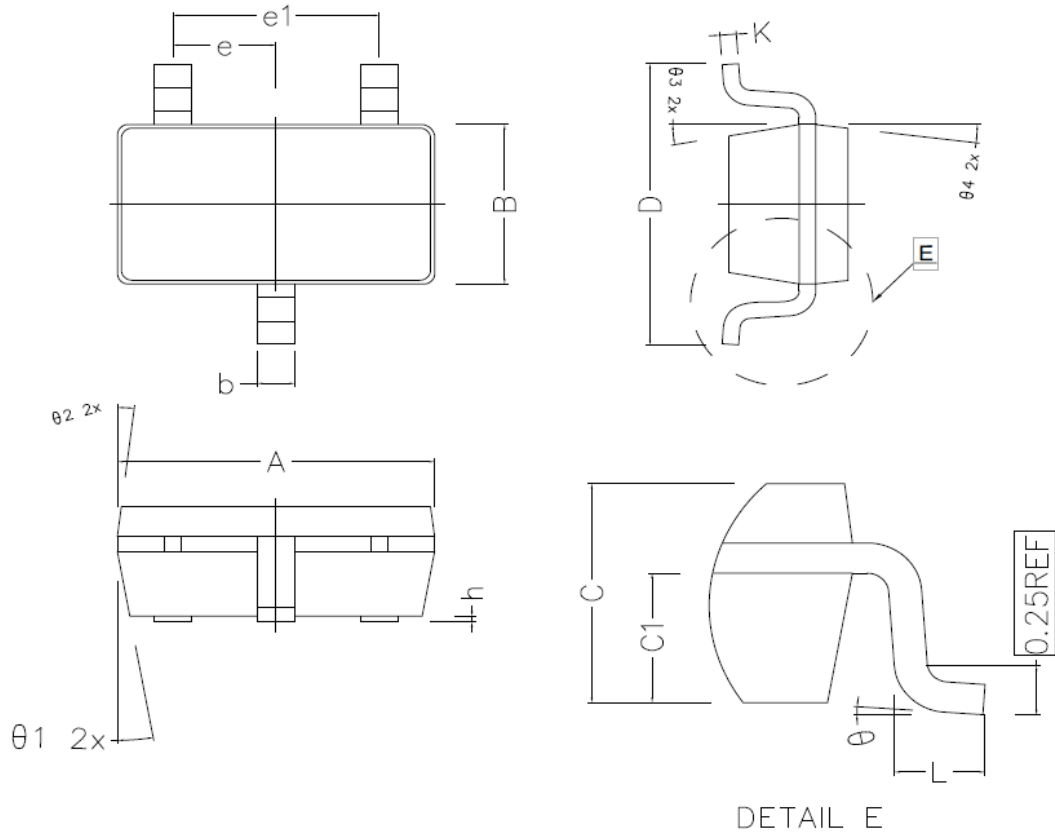


Figure10: Square Wave Pulse Duration (sec)

**20V/8A 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**

**20V/8A N-Channel Advanced Power MOSFET**
**SOT-23-3L Package Outline Dimensions (Units: mm)**


COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	2.820	2.920	3.020
B	1.500	1.600	1.700
C	1.050	1.100	1.150
C1	0.600	0.650	0.700
D	2.650	2.800	2.950
L	0.300	0.450	0.600
b	0.280	0.350	0.420
h	0.020	0.050	0.100
K	0.120	—	0.230
e	0.950TYPE		
e1	1.900TYPE		
$\theta_1$	10° TYPE		
$\theta_2$	7° TYPE		
$\theta_3$	10° TYPE		
$\theta_4$	7° TYPE		
$\theta$	0° ~ 8°		