

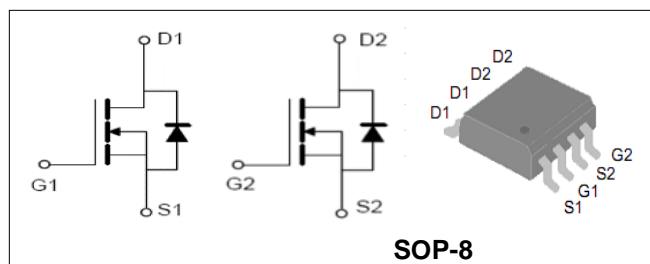
**30V/10A N-Channel Enhancement Mode MOSFET****Features**

- Improved dv/dt Capability, High Ruggedness.
- Maximum Junction Temperature Range (150°C)

BVDSS	30	V
ID	10	A
RDSON@VGS=10V	7.7	mΩ
RDSON@VGS=4.5V	12.5	mΩ

**Applications**

- High Side Load Switch
- Battery Switch
- Optimized for Power Management Applications for Portable Products, such as wireless charger, Media Tablets, PMP, DSC, GPS, and Others

**Order Information**

Product	Package	Marking	Reel Size	Reel	Carton
PTS3210	SOP-8	PTS3210	13inch	3000PCS	48000PCS

**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	10	A
		$T_A = 25^\circ\text{C}$	
<b>Mounted on Large Heat Sink</b>			
$I_{DM}$	Pulse Drain Current Tested (Silicon Limit) (Note1)	40	A
		$T_A = 25^\circ\text{C}$	
$I_D$	Continuous Drain current	10	A
		$T_A = 25^\circ\text{C}$	
$P_D$	Maximum Power Dissipation	2	W
		$T_A = 25^\circ\text{C}$	
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient (Note2)	62.5	°C/W



## 30V/10A N-Channel Enhancement Mode 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	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	--	--	±100	μA
V <sub>GS(TH)</sub>	Gate Threshold Voltage	VDS=VGS,ID=250μA	1	--	2.5	V
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance (Note3)	VGS=10V, ID=10A	--	7.7	13	mΩ
		VGS=4.5V, ID=10A	--	12.5	16	mΩ
<b>Dynamic Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated) (Note4)</b>						
C <sub>iss</sub>	Input Capacitance	VDS=15V, VGS=0V, F=1MHz	--	2097	--	pF
C <sub>oss</sub>	Output Capacitance		--	170	--	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		--	126	--	pF
Q <sub>g</sub>	Total Gate Charge	VDS=10V, ID=10A, VGS=10V	--	23	--	nC
Q <sub>gs</sub>	Gate-Source Charge		--	7	--	nC
Q <sub>gd</sub>	Gate-Drain Charge		--	5	--	nC
<b>Switching Characteristics (Note5)</b>						
t <sub>d(on)</sub>	Turn-on Delay Time	VDS=10V, ID=10A, RG=2.7Ω, VGS=10V	--	14	--	nS
t <sub>r</sub>	Turn-on Rise Time		--	9	--	nS
t <sub>d(off)</sub>	Turn-off Delay Time		--	39	--	nS
t <sub>f</sub>	Turn-off Fall Time		--	7	--	nS
<b>Source- Drain Diode Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated)</b>						
V <sub>SD</sub>	Forward on voltage	IS=4A,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

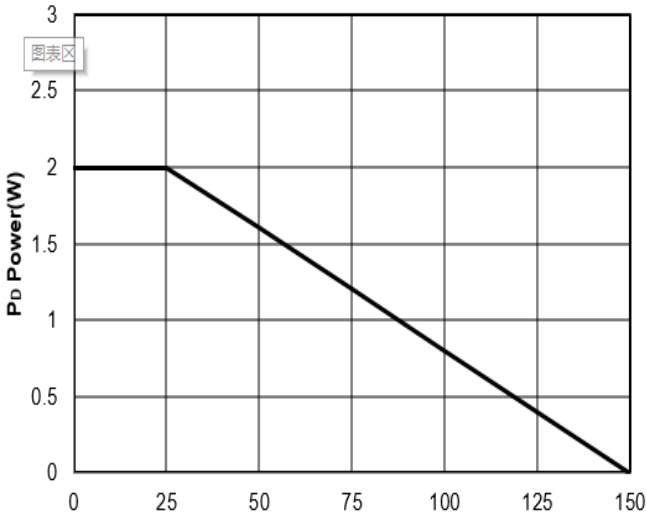


Figure1: Tj Junction Temperature (°C)

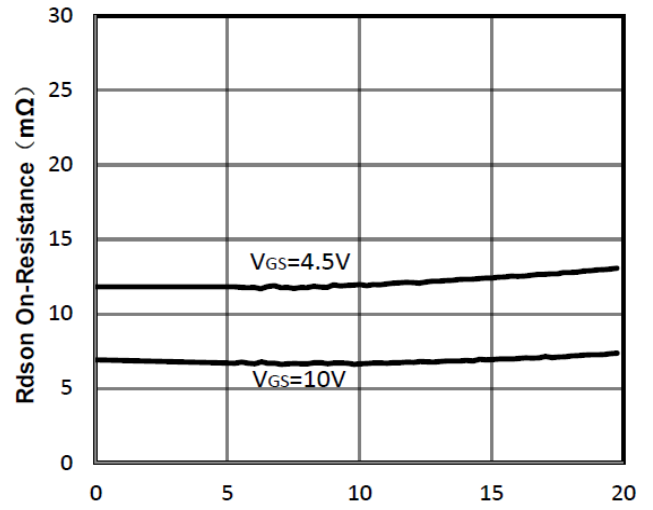


Figure2: Id Drain Current (A)

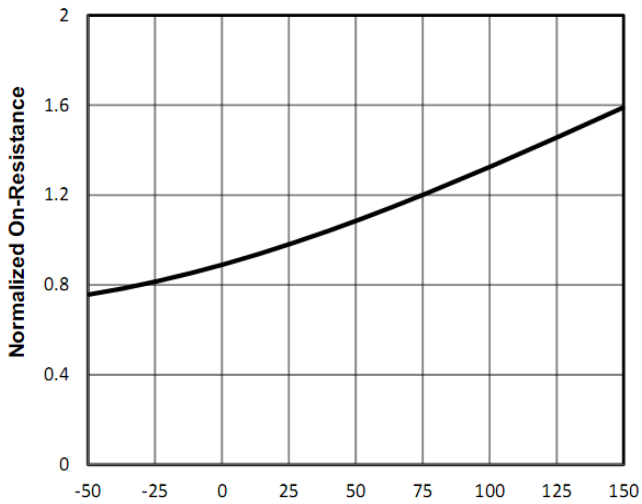


Figure3: Tj Junction Temperature (°C)

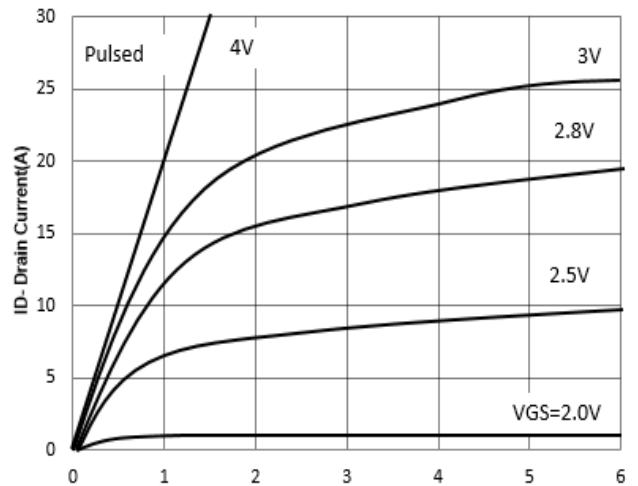


Figure4: Vds Drain-Source Voltage (V)

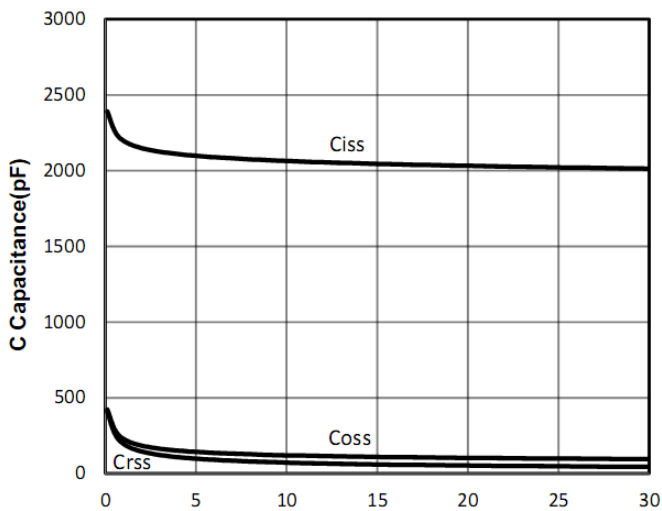


Figure5: Vds Draun-Source Voltage (V)

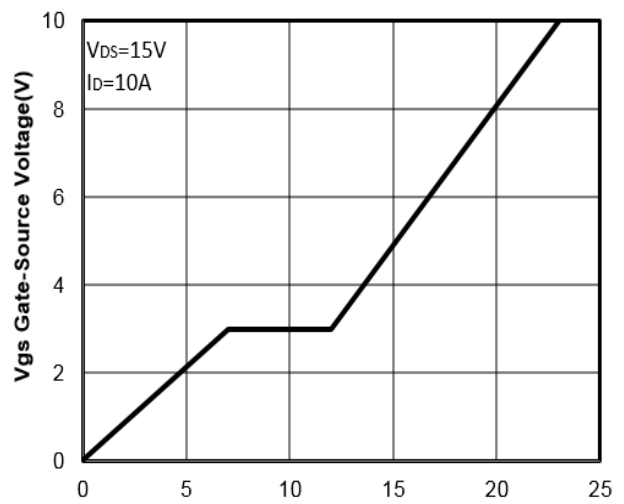


Figure6: Qg Gate Charge (nC)



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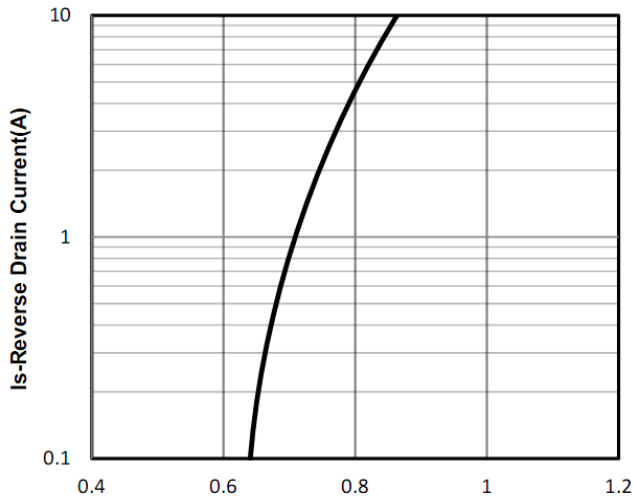


Figure7: Vsd Source-Drain Voltage (V)

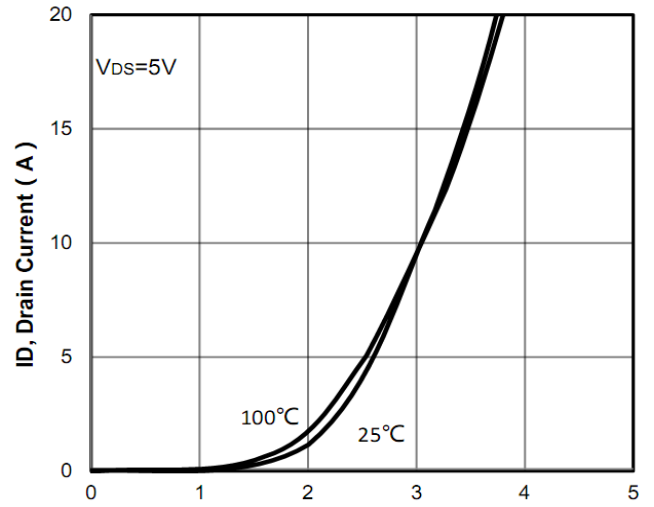


Figure8: Vgs Gate-Source Voltage (V)

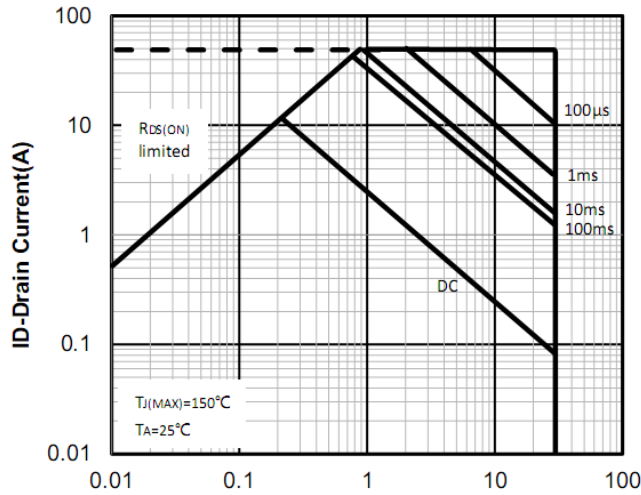


Figure9: Vds Drain -Source Voltage (V)

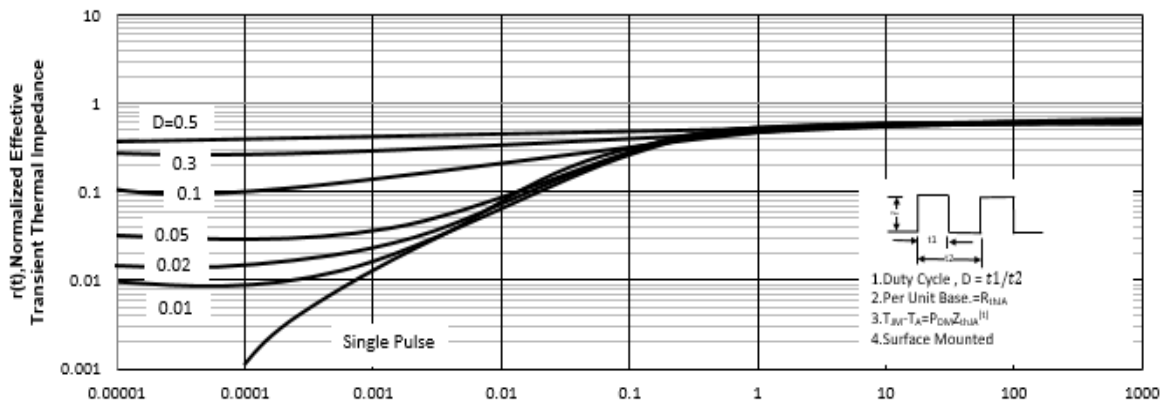


Figure10: Square Wave Pulse Duration (sec)

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Test Circuit and Waveform:

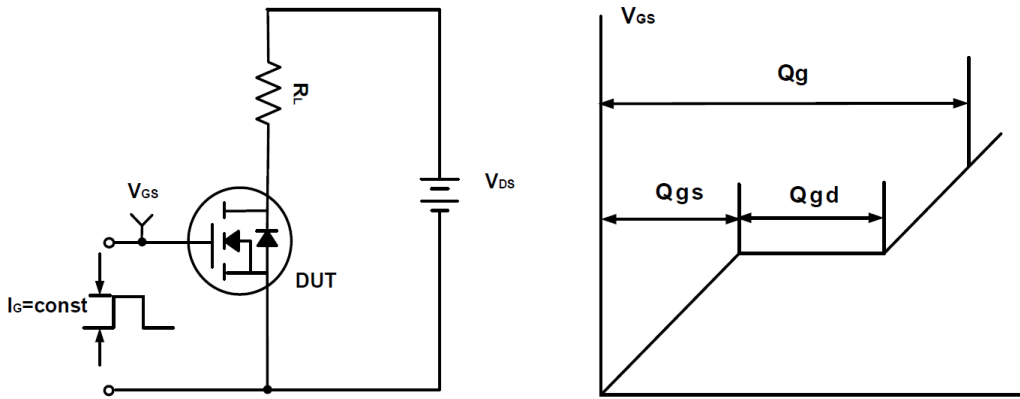


Figure A Gate Charge Test Circuit & Waveforms

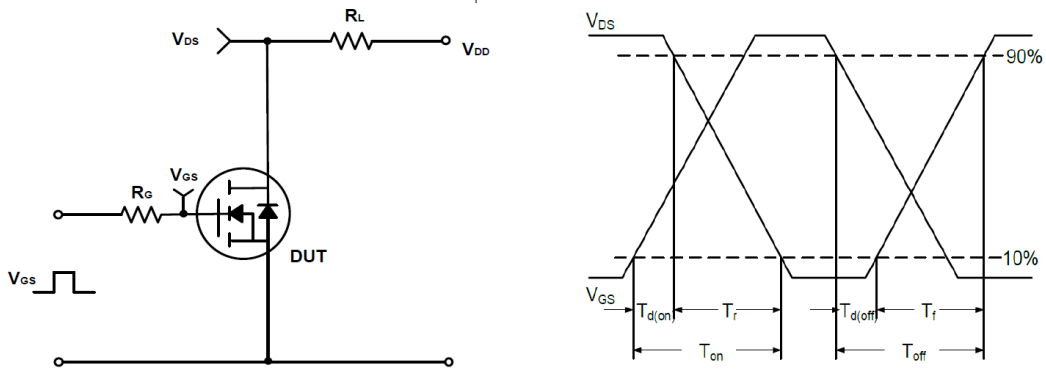


Figure B Switching Test Circuit & Waveforms

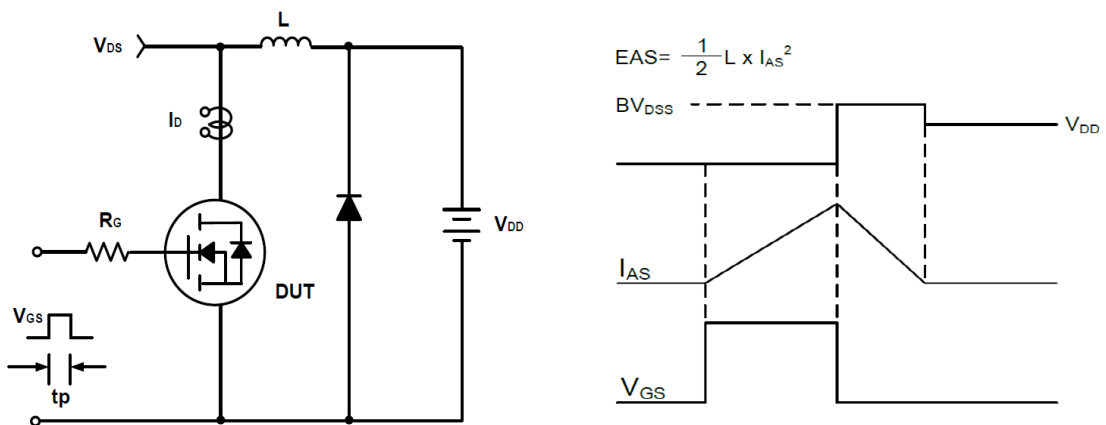
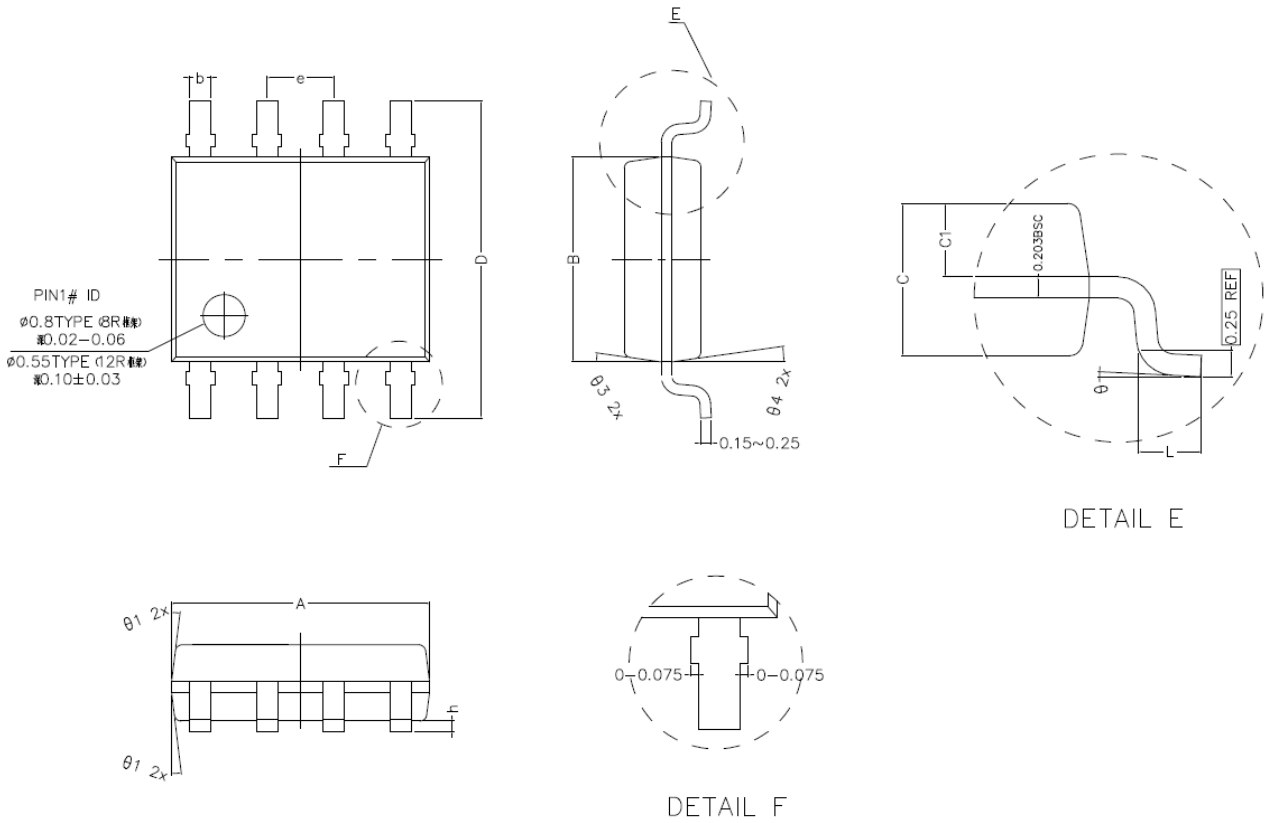


Figure C Unclamped Inductive Switching Circuit & Waveforms

**30V/10A N-Channel Enhancement Mode MOSFET**
**SOP-8 Package Outline Dimensions (Units: mm)**


COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	4.800	4.900	5.000
B	3.800	3.900	4.000
C	1.350	1.450	1.550
C1	0.650	0.700	0.750
D	5.900	6.100	6.300
L	0.500	0.600	0.700
b	0.350	0.400	0.450
h	0.050	0.150	0.250
e	1.270TYPE		
$\theta_1$	7° TYPE(8R)		12° TYPE(12R)
$\theta_2$	7° TYPE(8R)		10° TYPE(12R)
$\theta_3$	8° TYPE(8R)		12° TYPE(12R)
$\theta_4$	8° TYPE(8R)		10° TYPE(12R)
$\theta$	0° ~ 8°		