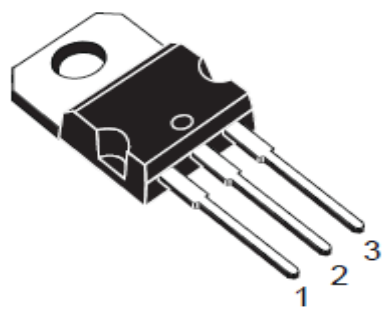


Three-terminal positive voltage regulator  
 OUTPUT CURRENT TO 1.2A  
 OUTPUT VOLTAGES OF 5; 6; 8; 9; 12V  
 THERMAL OVERLOAD PROTECTION  
 SHORT CIRCUIT PROTECTION  
 OUTPUT TRANSITION SOA PROTECTION

## 1、 Absolute Maximum Ratings $T_c=25^\circ\text{C}$

Symbol	Parameter	Value	UNIT
VI	Input Voltage	35	V
TOPR	Operating Temperature Range	0 ~ +125	$^\circ\text{C}$
TSTG	Storage Temperature Range	-65 ~+150	$^\circ\text{C}$



**TO-220**  
1 Input 2 Gnd 3 Out

2、 Electrical Characteristics ( $T_c=25^\circ\text{C}$ ) Of SK7805A (refer to the test circuits ,  $T_J = -55$  to  $150^\circ\text{C}$   $V_I = 10\text{V}$ ,  $I_O = 500\text{ mA}$  ,  $C_I = 0.33\ \mu\text{F}$ ,  $C_O = 0.1\ \mu\text{F}$  unless otherwise specified)。

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT	
Output Voltage	VO	$T_J = +25^\circ\text{C}$	4.8	5	5.2	V	
		$I_O = 5\text{mA to } 1\text{A}$ , $P_O \leq 15\text{W}$ $V_I = 8\text{V to } 20\text{V}$	4.75	5	5.25		
Line Regulation (Notel)	$\Delta V_O$	$T_J = +25^\circ\text{C}$	$V_I = 7\text{V to } 25\text{V}$			100	mV
			$V_I = 8\text{V to } 12\text{V}$			50	
Load Regulation (Notel)	$\Delta V_O$	$T_J = +25^\circ\text{C}$	$I_O = 5\text{mA to } 1.2\text{A}$			100	mV
			$I_O = 250\text{mA to } 750\text{mA}$			50	
Quiescent Current	IQ	$T_J = +25^\circ\text{C}$			6	mA	
Quiescent Current Change	$\Delta I_Q$	$T_J = +25^\circ\text{C}$	$I_O = 5\text{mA to } 1\text{A}$			0.5	mA
			$V_I = 8\text{V to } 25\text{V}$			0.8	
Quiescent Current Change	$\Delta V_O/\Delta T$	$T_J = +25^\circ\text{C}$		0.6		mV/ $^\circ\text{C}$	
Short Circuit Current	ISC	$T_J = +25^\circ\text{C}$ , $V_I = 35\text{V}$		0.75	1.2	A	

3、Electrical Characteristics ( $T_c=25^\circ\text{C}$ ) Of SK7806A(refer to the test circuits ,  $T_J = -55$  to  $150^\circ\text{C}$   $V_I = 11\text{V}$ ,  $I_O = 500\text{ mA}$  ,  $C_I = 0.33\ \mu\text{F}$ ,  $C_O = 0.1\ \mu\text{F}$  unless otherwise

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	5.75	6	6.25	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> ≤ 15W V <sub>I</sub> = 9V to 21V	5.65	6	6.35	
Line Regulation (Notel)	Δ V <sub>O</sub>	T <sub>J</sub> = +25°C	V <sub>I</sub> = 8V to 25V		100	mV
			V <sub>I</sub> = 9V to 13V		50	
Load Regulation (Notel)	Δ V <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.2A			100	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250mA to 750mA			50	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = +25°C			6	mA
Quiescent Current Change	Δ I <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A			0.5	mA
		V <sub>I</sub> = 9V to 25V			0.8	
Quiescent Current Change	Δ V <sub>O</sub> /Δ T	I <sub>O</sub> = 5mA		0.7		mV/°C
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25° C, V <sub>I</sub> = 35V		0.75	1.2	A

4、Electrical Characteristics ( $T_c=25^{\circ}\text{C}$ ) Of SK7808A(refer to the test circuits ,  $T_J = -55$  to  $150^{\circ}\text{C}$   $V_I = 14\text{V}$ ,  $I_O = 500\text{ mA}$  ,  $C_I = 0.33\ \mu\text{F}$ ,  $C_O = 0.1\ \mu\text{F}$  unless otherwise specified)。

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT	
Output Voltage	$V_O$	$T_J = +25^{\circ}\text{C}$	7.7	8	8.3	V	
		$I_O = 5\text{mA to } 1\text{A}$ , $P_O \leq 15\text{W}$ $V_I = 11.5\text{V to } 23\text{V}$	7.6	8	8.4		
Line Regulation (Note1)	$\Delta V_O$	$T_J = +25^{\circ}\text{C}$	$V_I = 10.5\text{V to } 25\text{V}$			100	mV
			$V_I = 11\text{V to } 17\text{V}$			50	
Load Regulation (Note1)	$\Delta V_O$	$T_J = +25^{\circ}\text{C}$ $I_O = 5\text{mA to } 1.2\text{A}$			100	mV	
		$T_J = +25^{\circ}\text{C}$ $I_O = 250\text{mA to } 750\text{mA}$			50		
Quiescent Current	$I_Q$	$T_J = +25^{\circ}\text{C}$			6	mA	
Quiescent Current Change	$\Delta I_Q$	$I_O = 5\text{mA to } 1\text{A}$			0.5	mA	
		$V_I = 11.5\text{V to } 25\text{V}$			1		
Quiescent Current Change	$\Delta V_O/\Delta T$	$I_O = 5\text{mA}$		1		mV/ $^{\circ}\text{C}$	
Short Circuit Current	ISC	$T_J = +25^{\circ}\text{C}$ , $V_I = 35\text{V}$		0.75	1.2	A	

5、Electrical Characteristics ( $T_c=25^{\circ}\text{C}$ ) Of SK7809A(refer to the test circuits ,  $T_J = -55$  to  $150^{\circ}\text{C}$   $V_I = 15\text{V}$ ,  $I_O = 500\text{ mA}$  ,  $C_I = 0.33\ \mu\text{F}$ ,  $C_O = 0.1\ \mu\text{F}$  unless otherwise specified)。

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	8.64	9	9.36	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> ≤ 15W V <sub>I</sub> = 11.5V to 26V	8.55	9	9.45	
Line Regulation (Note1)	Δ V <sub>O</sub>	T <sub>J</sub> = +25°C	V <sub>I</sub> = 11.5V to 26V		100	mV
			V <sub>I</sub> = 12V to 18V		50	
Load Regulation (Note1)	Δ V <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.2A			100	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250mA to 750mA			50	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = +25°C			6	mA
Quiescent Current Change	Δ I <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A			0.5	mA
		V <sub>I</sub> = 11.5V to 26V			1	
Quiescent Current Change	Δ V <sub>O</sub> /Δ T	I <sub>O</sub> = 5mA		1		mV/°C
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25° C, V <sub>I</sub> = 35V		0.75	1.2	A

6、Electrical Characteristics ( $T_c=25^{\circ}\text{C}$ ) Of SK7812A (refer to the test circuits ,  $T_J = -55$  to  $150^{\circ}\text{C}$   $V_I = 19\text{V}$ ,  $I_O = 500\text{ mA}$  ,  $C_I = 0.33\ \mu\text{F}$ ,  $C_O = 0.1\ \mu\text{F}$  unless otherwise specified)。

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT	
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	11.5	12	12.5	V	
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> ≤ 15W V <sub>I</sub> =15.5V to 27V	11.4	12	12.6		
Line Regulation (Note1)	Δ V <sub>O</sub>	T <sub>J</sub> = +25°C	V <sub>I</sub> = 14.5V to 30V			100	mV
			V <sub>I</sub> = 16V to 22V			50	
Load Regulation (Note1)	Δ V <sub>O</sub>	T <sub>J</sub> = +25°C				100	mV
		I <sub>O</sub> = 5mA to 1.2A				50	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = +25°C				6	mA
		I <sub>O</sub> = 5mA to 1A				0.5	
Quiescent Current Change	Δ I <sub>Q</sub>	V <sub>I</sub> = 15V to 30V				1	mA
		I <sub>O</sub> = 5mA			1.5		
Quiescent Current Change	Δ V <sub>O</sub> /Δ T	I <sub>O</sub> = 5mA			1.5		mV/°C
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25° C, V <sub>I</sub> = 35V			0.75	1.2	A

## 7、Typical Characteristics

Figure 1: Dropout Voltage vs Junction Temperature

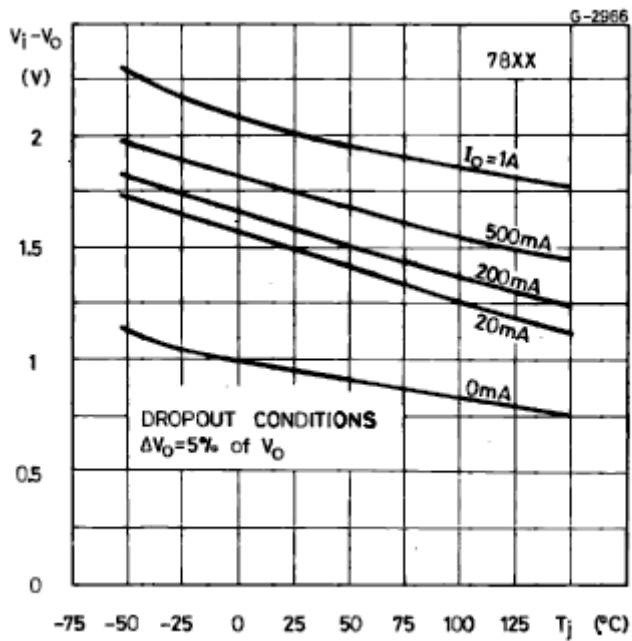


Figure 2: Peak Output Current vs Input/output Differential Voltage

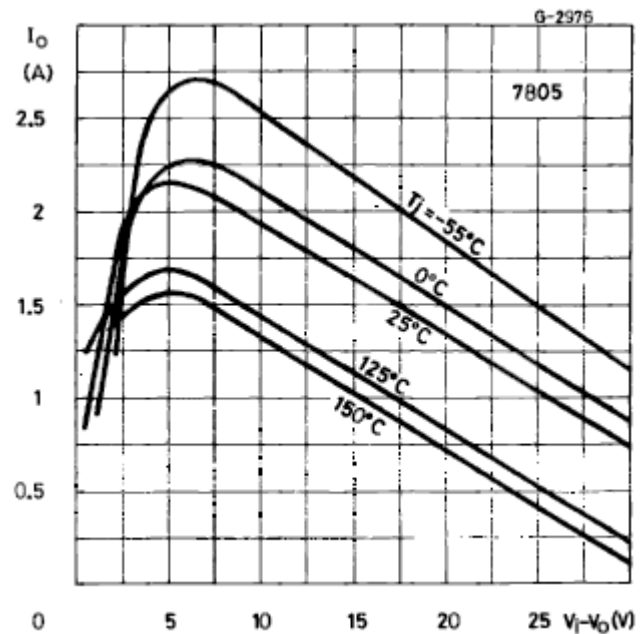


Figure 3: Supply Voltage Rejection vs Frequency Temperature

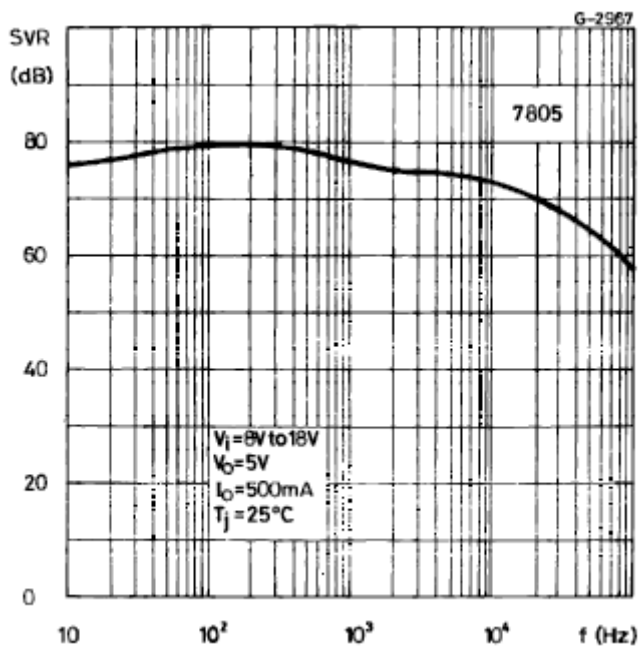


Figure 4: Quiescent Current vs Junction Temperature

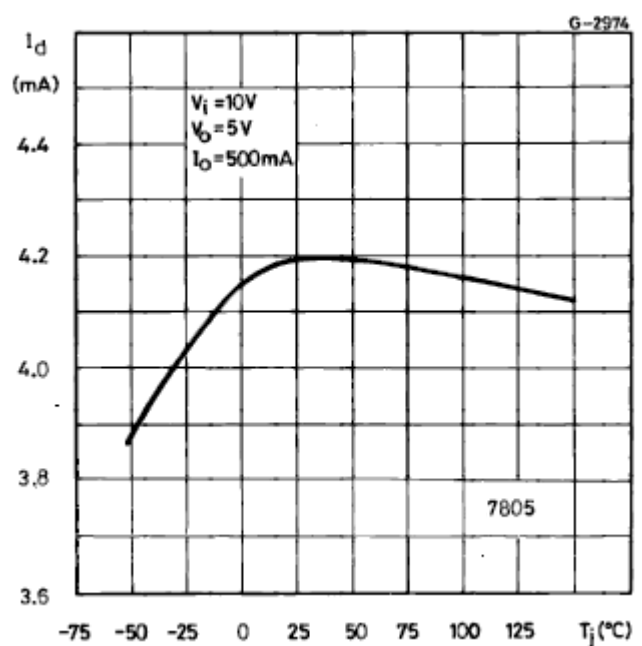


Figure 5: Output Voltage vs Junction Temperature

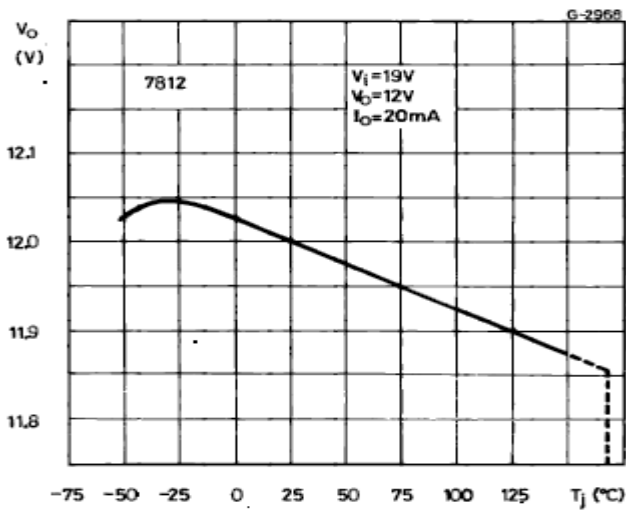


Figure 6: Load Transient Response

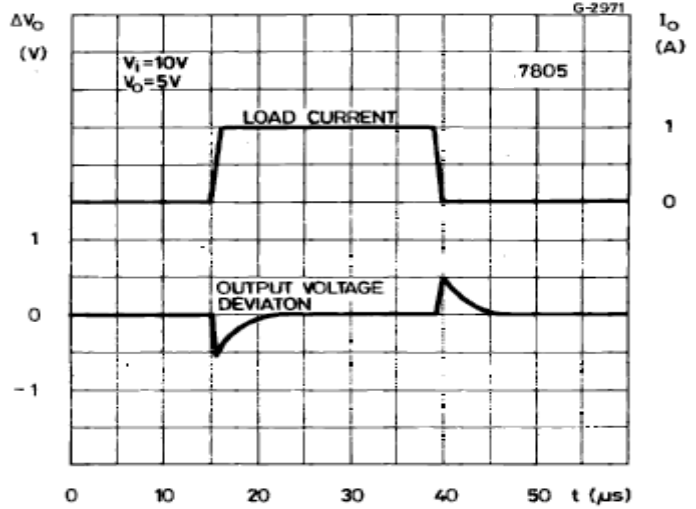


Figure 7: Output Impedance vs Frequency

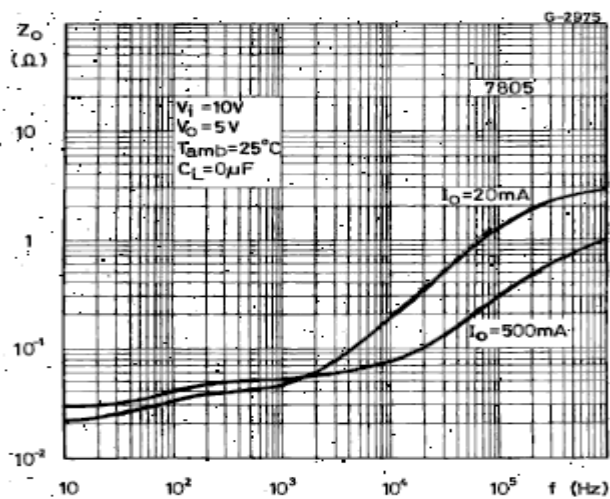


Figure 8: Line Transient Response

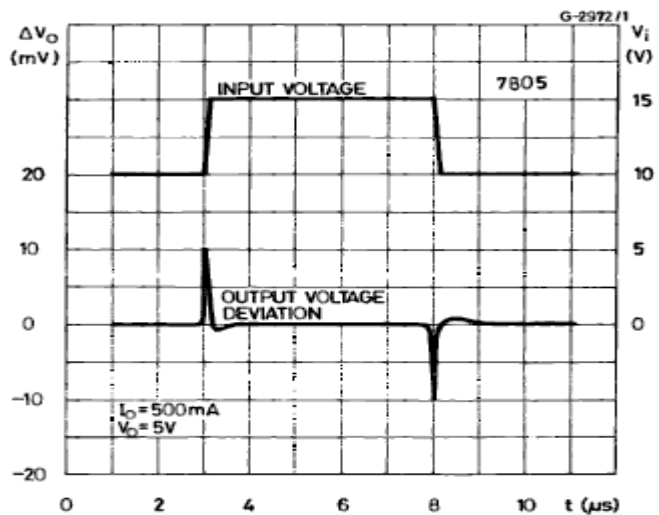
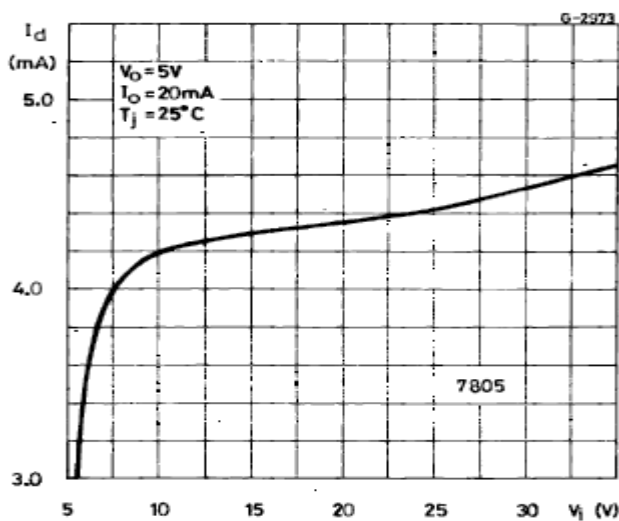


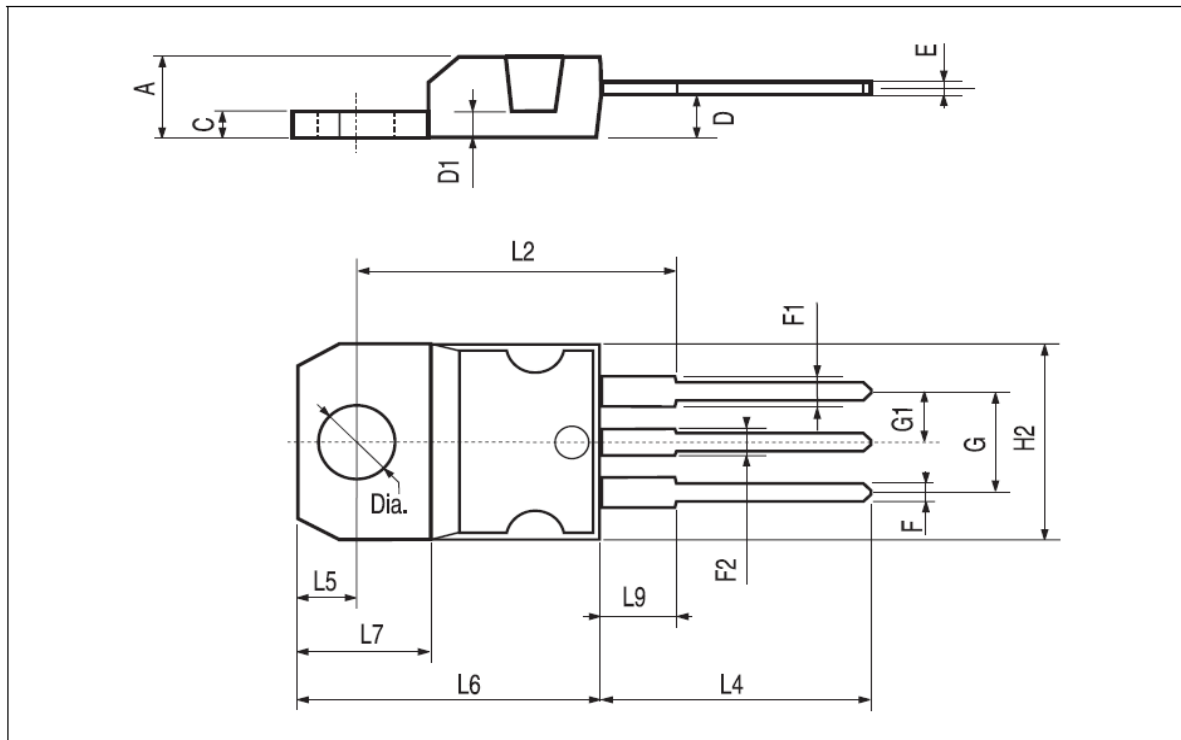
Figure 9: Quiescent Current vs Input Voltage



## 8、Package Demensions

### TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151





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