

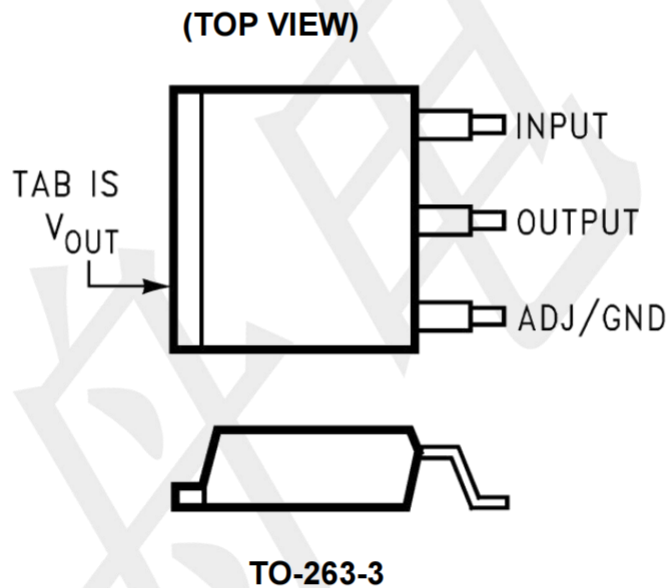
Features

- Available in 3.3V, 5.0V, and Adjustable Versions
- Current Limiting and Thermal Protection
- Output Current 5 A
- Fast Transient Response
- Line Regulation 0.015% (Typical)
- Load Regulation 0.1% (Typical)

Applications

- High Current Regulator
- High-Efficiency Linear Regulators
- Microprocessor Power Supplies
- Post Regulator for Switching Supply
- Industrial Power Supplies
- Mother Board I/O Power Supplies

PIN CONFIGURATION



Pin Number	Pin Name	Pin Function
1	ADJ/GND	GND(Adj.) : Power Ground (Providing $V_{REF} = 1.25V$ (typ.) for adjustable V_{OUT} . $V_{REF} = V_{OUT} - V_{ADJ}$ and $I_{ADJ} = 55 \mu A$ (typ.))
2	V_{OUT}	Output voltage pin for the regulator.
3	VIN	Input voltage pin for the regulator.

Absolute Maximum Ratings

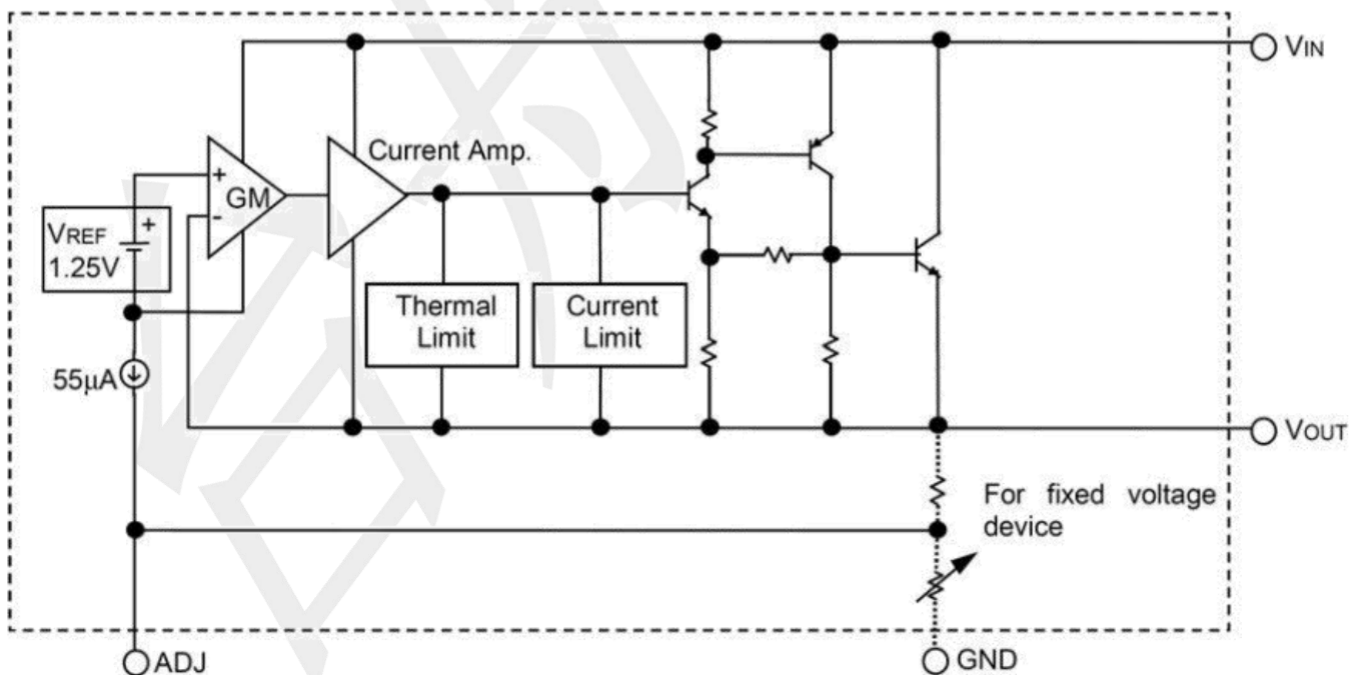
over operating free-air temperature range (unless otherwise noted)

CHARACTERISTIC	VALUL	UNIT
Vin pin to ADJ/GND pin	15	V
Thermal Resistance Junction to Case (θ_{JC})	3	°C/W
Thermal Resistance Junction to Ambient (θ_{JA})	60	°C/W
Power Dissipation	Internally Limited	
Junction Temperature (T_J)	150	°C
Lead Temperature	260, to 10 sec	°C
Storage temperature T_{stg}	-65~150	°C

Recommended Operating Conditions

CHARACTERISTIC	VALUL	UNIT
Vin pin to ADJ/GND pin	12	V
Operating Junction Temperature	0~120	°C

BLOCK DIAGRAM



LM1084IS-5.0-TP

5A Low Dropout Positive Regulators

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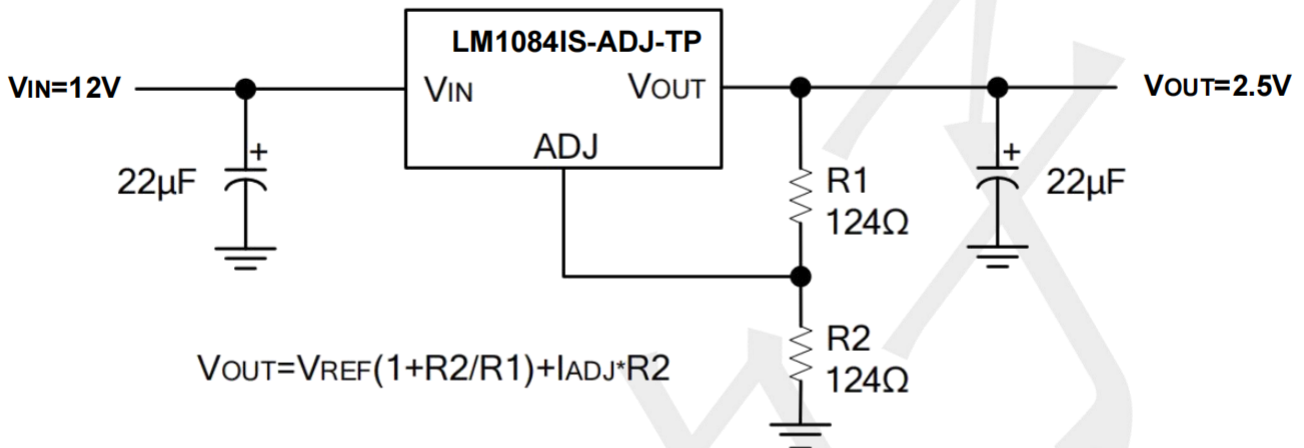
Electrical Characteristics

($T_A=25^{\circ}\text{C}$, $V_{IN}=8\text{V}$, $I_O=10\text{mA}$, unless otherwise specified)

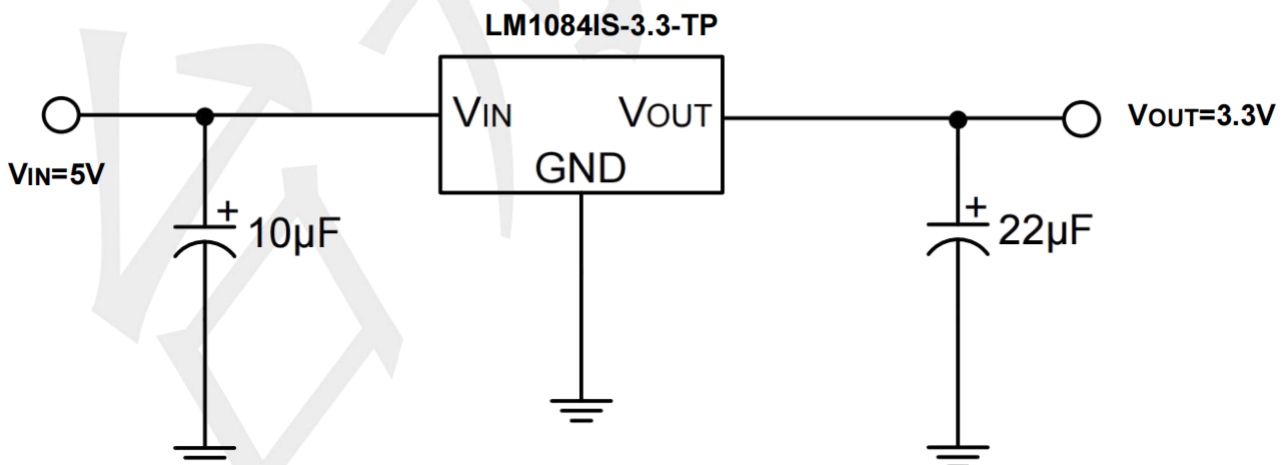
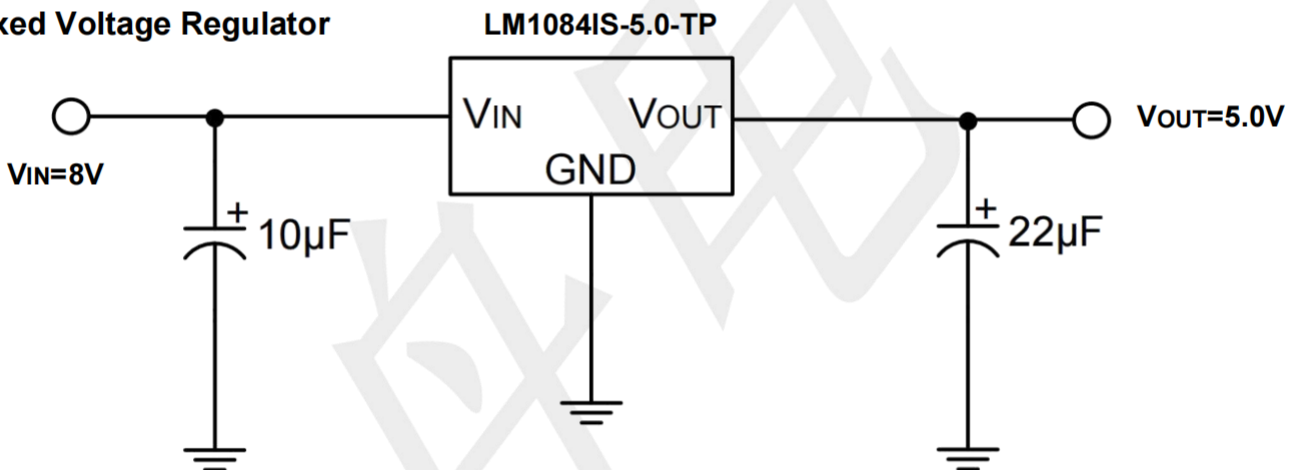
CHARACTERISTIC	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
Reference voltage	V_{REF}	LM1084IS-ADJ, $T_J=25^{\circ}\text{C}$, $10\text{mA} \leq I_O \leq I_{FULL\text{ LOAD}}$, $1.5\text{V} \leq (V_{IN}-V_{OUT}) \leq 15\text{V}$	1.225	1.25	1.275	V
		LM1084IS-ADJ, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $10\text{mA} \leq I_O \leq I_{FULL\text{ LOAD}}$, $1.5\text{V} \leq (V_{IN}-V_{OUT}) \leq 15\text{V}$	1.212	1.25	1.287	V
Output Voltage	V_{OUT}	LM1084IS-3.3	3.234	3.30	3.366	V
		LM1084IS-5.0	4.900	5.00	5.100	V
Line regulation	$REG_{(LINE)}$	$4.75 \leq V_{IN} \leq 5.25$, $T_J=25^{\circ}\text{C}$	--	0.015	0.2	%
		$0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$	--	0.035	0.2	%
Load regulation	$REG_{(LOAD)}$	$T_J=25^{\circ}\text{C}$, $0 \leq I_O \leq I_{FULL\text{ LOAD}}$	--	0.1	0.3	%
		$0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $0 \leq I_O \leq I_{FULL\text{ LOAD}}$	--	0.2	0.4	%
Dropout voltage	V_D	ΔV_{OUT} , $\Delta V_{REF} = 1\%$, $\pm 2\% \leq I_O \leq \pm 3\%$, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$	--	1.3	1.5	V
Current limit	I_{CL}	$4.75 \leq V_{IN} \leq 5.25$, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$	6.0	7.5	--	A
Adjust pin current	I_{ADJ}	$4.75 \leq V_{IN} \leq 5.25$, $\pm 2\% \leq I_O \leq \pm 3\%$, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$	--	55	120	μA
Adjusted pin current change	ΔI_{ADJ}	$4.75 \leq V_{IN} \leq 5.25$, $\pm 2\% \leq I_O \leq \pm 3\%$, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$	--	0.2	5.0	μA
Temperature stability		$I_O=0.5\text{A}$, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$	--	0.5	--	%
Minimum load current	I_O	$0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$	--	5.0	10	mA
RMS output noise	V_N	$10\text{Hz} \leq f \leq 10\text{kHz}$	--	0.003 of V_{OUT}	--	%
Ripple rejection ratio	R_A	120Hz input ripple, $C_{OUT} = 25\mu\text{F}$ $V_{IN}-V_{OUT} = 3\text{V}$	60	72	--	dB

Typical Application Circuit

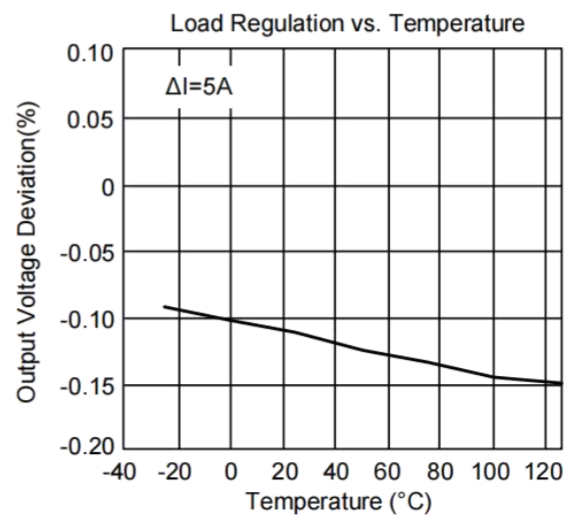
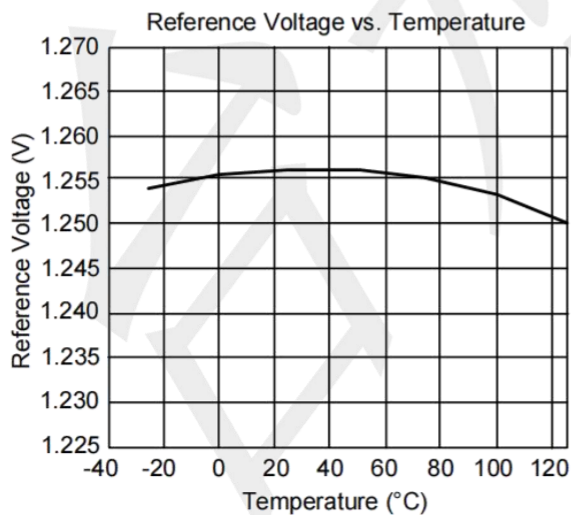
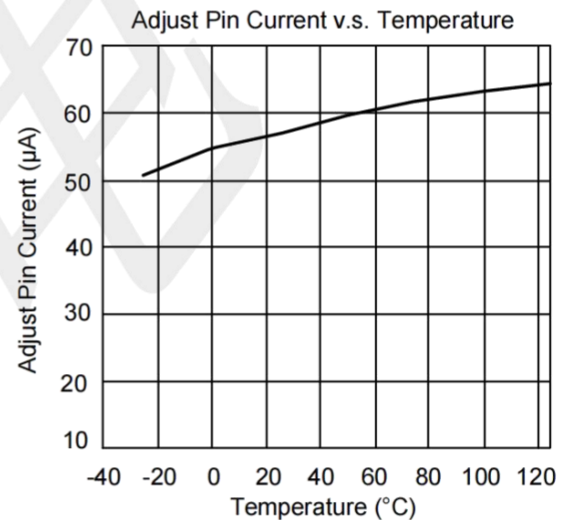
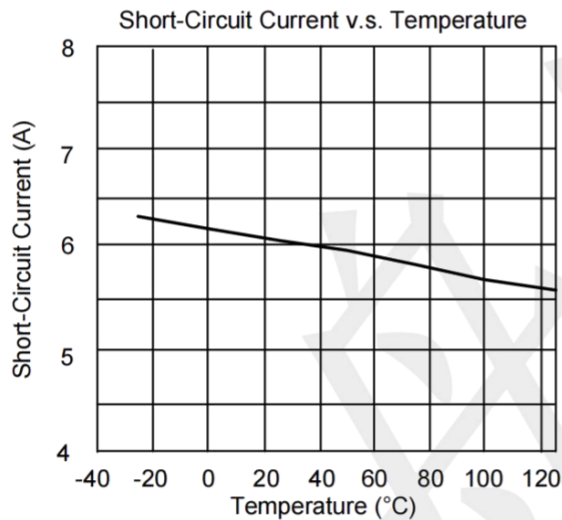
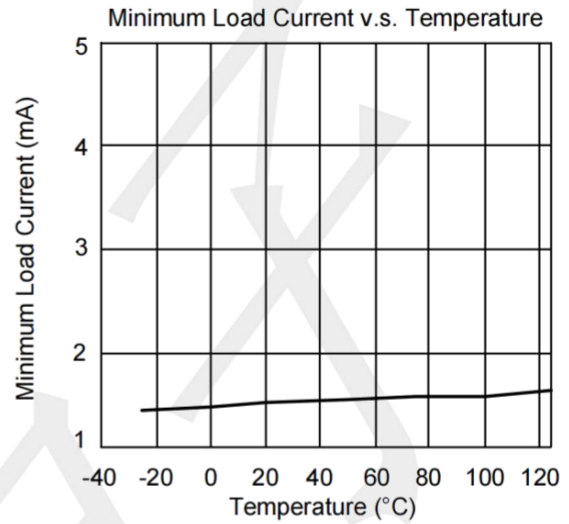
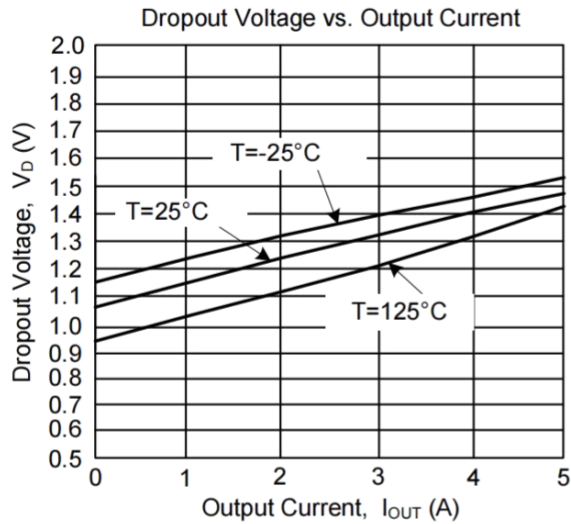
Adjustable Voltage Regulator



Fixed Voltage Regulator

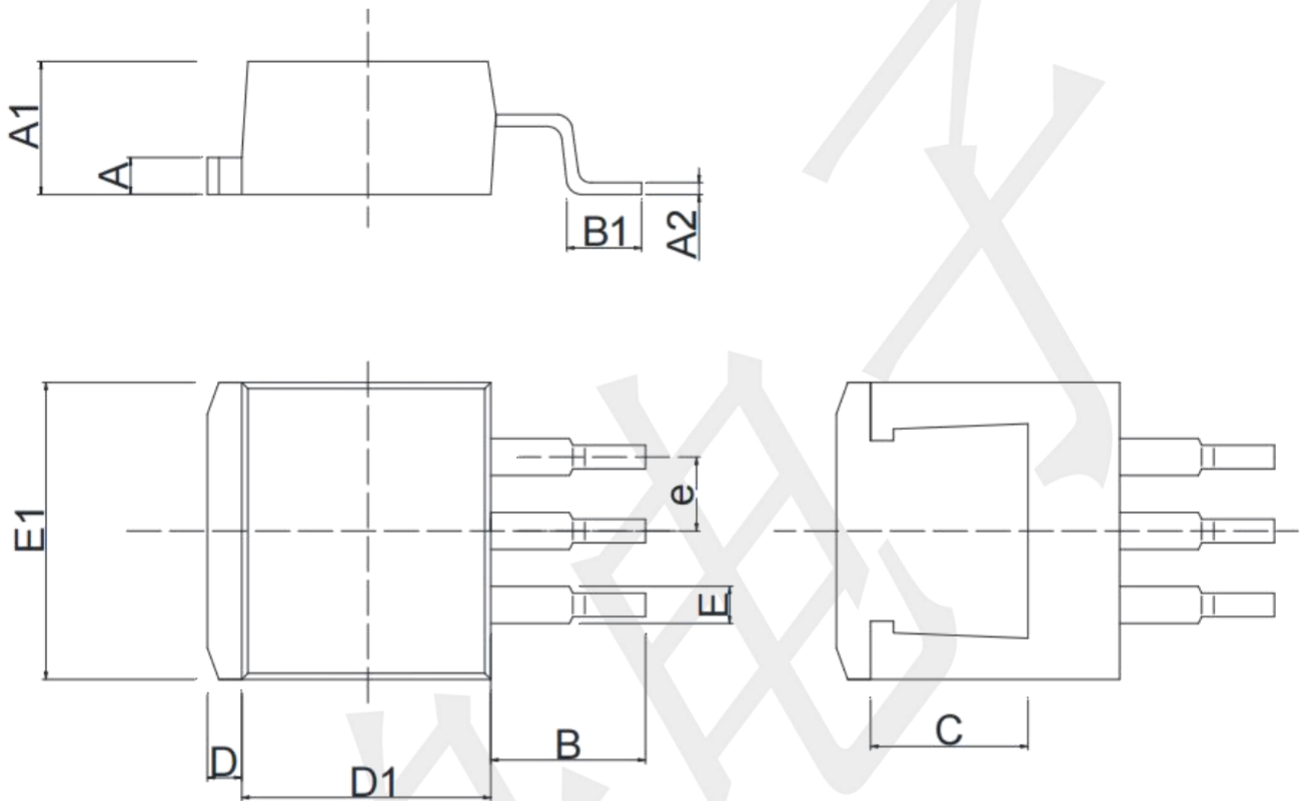


TYPICAL CHARACTERISTICS



Package Outline Dimensions (unit: mm)

T0-263-3



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.170	1.370	0.046	0.054
A1	4.470	4.670	0.176	0.184
A2	0.310	0.530	0.012	0.021
B	5.080	5.480	0.200	0.216
B1	2.340	2.740	0.092	0.108
C	5.600 REF		0.220 REF	
D	1.170	1.370	0.046	0.054
D1	8.500	8.900	0.335	0.350
E	1.170	1.370	0.046	0.054
E1	10.010	10.310	0.394	0.406
e	2.540 (BSC)		0.100 (BSC)	