

BR78L05MAQ

Rev.A Dec.-2023

/ Descriptions

Voltage Regulator in a SOT-23 Plastic Package.

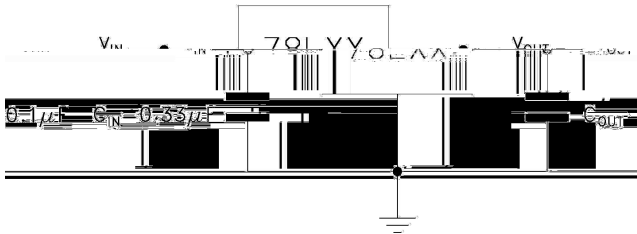
/ Features

3-Terminal regulators ,output current up to 100 mA, internal thermal overload protection and short-circuit limiting,Qualified to AEC-Q100 Standards for High Reliability, HF Product.

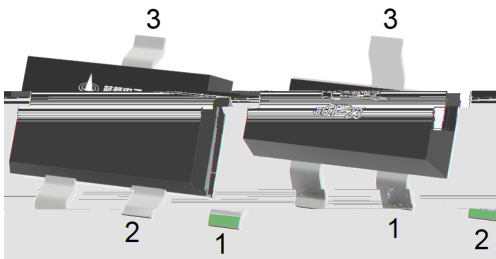
/ Applications

Voltage Regulator, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit or Application Circuit



/ Pinning



PIN1 VOUT PIN 2 VIN PIN 3 GND

/ Marking

Marking	QL05
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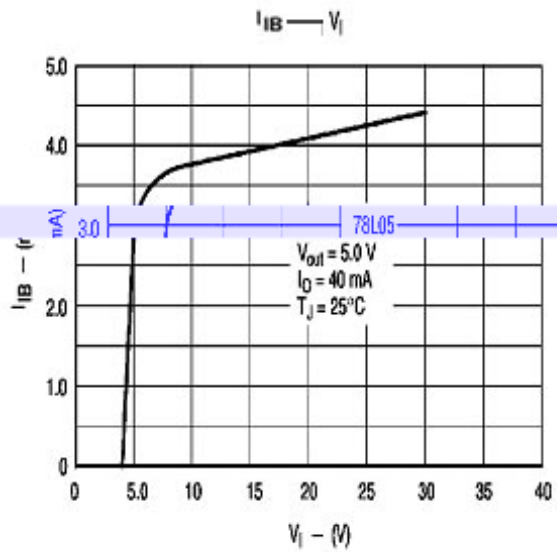
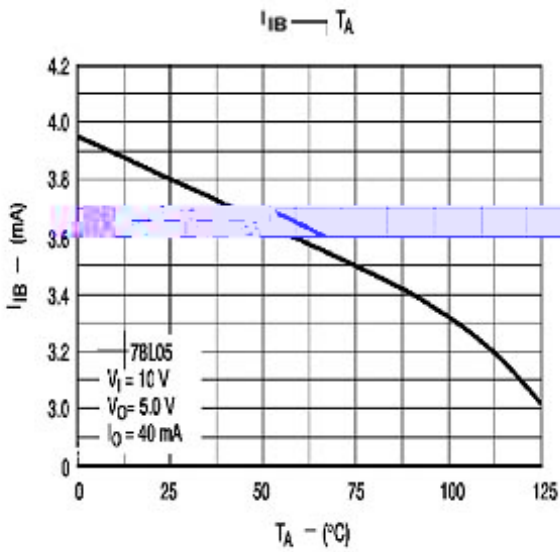
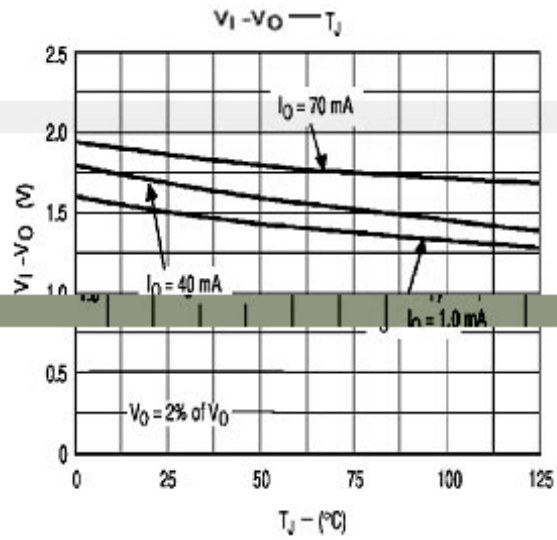
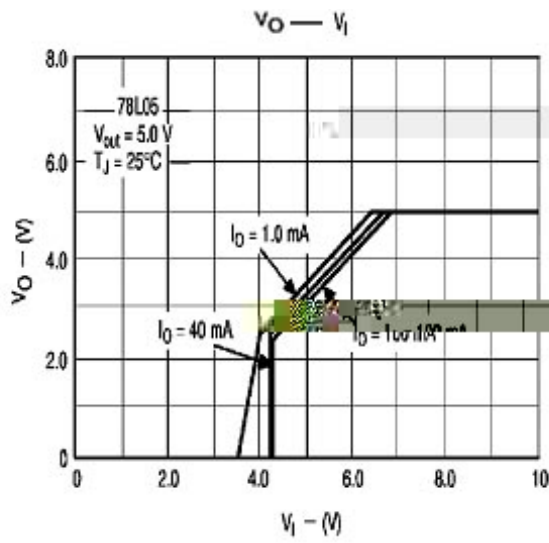
/ Absolute Maximum Ratings($T_a=25$)

Parameter	Symbol	Rating	Unit
Input voltage	V_I	30	V
Output current	I_o	100	mA
Operating virtual Junction temperature	T_J	-40 125	
Power Dissipation	P_D	350	mW
Storage temperature range	T_{stg}	-65 150	

/ Electrical Characteristics($T_a=25$ $V_I=10V, I_o=40mA$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output voltage	V_o	$I_o=40mA$ $T_j=25$	4.80	5.0	5.2	V
		$I_o=1mA$ to 40mA $V_I=7V$ to 20V	4.75	5.0	5.25	V
		$I_o=1mA$ to 70mA $V_I=10V$	4.75	5.0	5.25	V
Input regulation	V_o	$V_I=7V$ to 20V $T_j=25$		32	150	mV
		$V_I=8V$ to 20V $T_j=25$		26	100	mV
Output regulation	V_o	$I_o=1mA$ to 100mA $T_j=25$		15	60	mV
		$I_o=1mA$ to 40 mA $T_j=25$		8	30	mV
Ripple rejection	RR	$V_I=8V$ to 18V $f=120Hz$ $T_j=25$	41	49		dB
Output noise voltage	V_N	$f=10Hz\sim 100KHz$ $T_j=25$		42		μV
Dropout voltage	V_D	$T_j=25$		1.7		V
Bias current	I_q	$T_j=25$		3.8	6	mA
		$T_j=125$			5.5	mA
Bias current change	I_q	$V_I=8V$ to 20V			1.5	mA
		$I_o=1mA$ to 40mA			0.1	mA

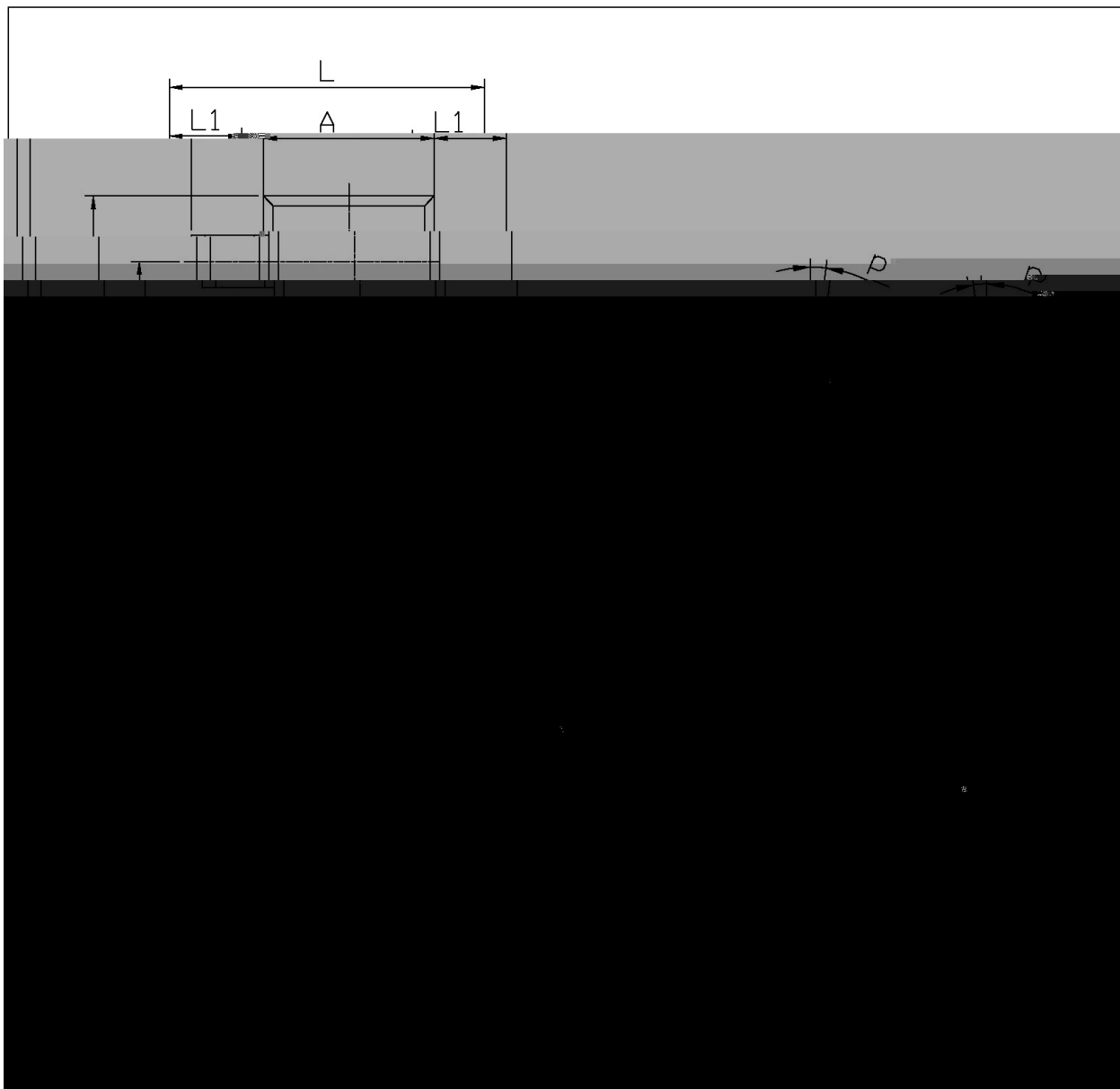
/ Electrical Characteristic Curve



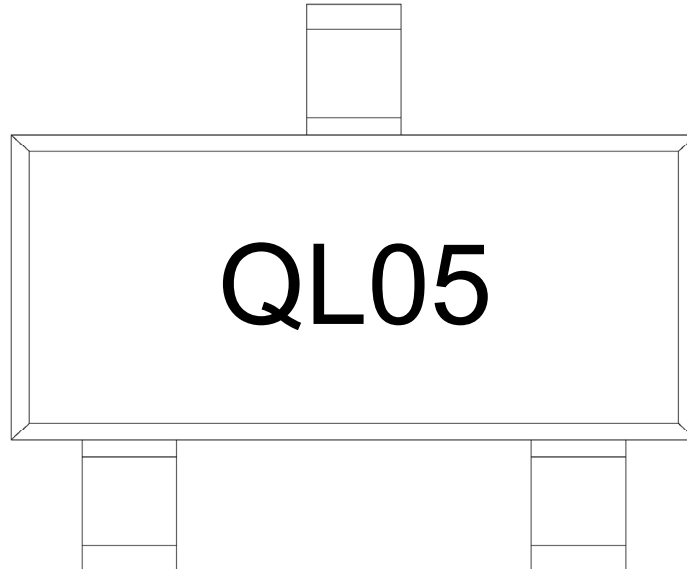
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



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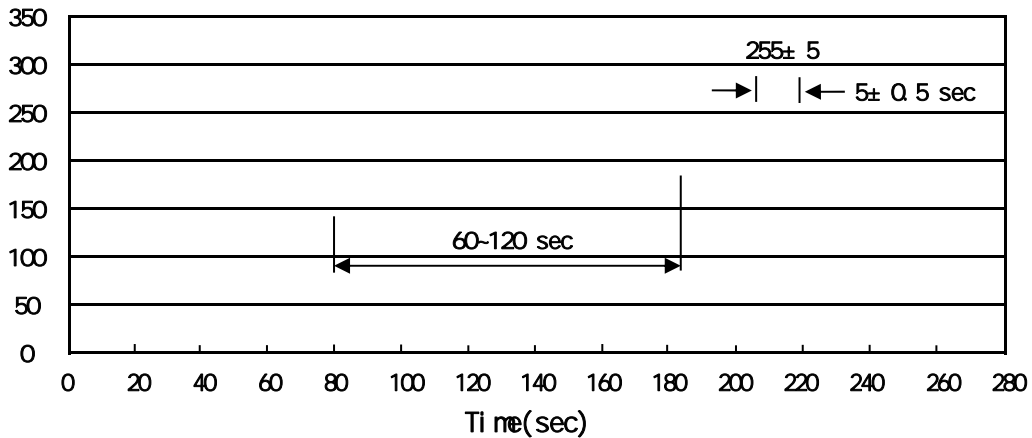
L05

Note:

Q: Automobile halogen-free product Code

L05: Product Type Code

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1 150 200 60 120sec; 1.Preheating:150~200 , Time:60~120sec.
- 2 255 5 5 0.5sec; 2.Peak Temp.:255 5 , Duration:5 0.5sec.
- 3 2 10 /sec. 3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices