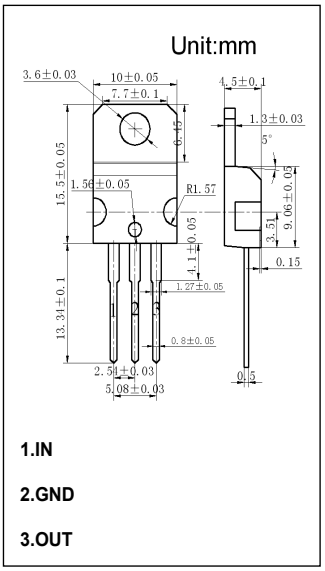
TO-220-3L Plastic-Encapsulate Voltage Regulators

7805

7805 Three-terminal positive voltage regulator



Features:

Maximum Output current I_{OM}: 1.2 A

Output voltage V_o: 5 V

Continuous total dissipation

P_D: 1.5W (T_a= 25°C)

15W (T_C=25°C)

Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

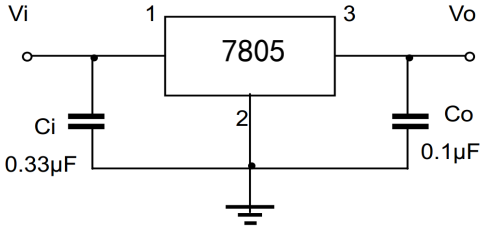
Symbol	Parameter	Value	Unit
V_i	Input Voltage	35	V
T_{OPR}	Operating Junction Temperature Range	0 to +150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	83.3	°C/W
$R_{\theta JC}$	Thermal Resistance from Junction to Case	8.3	°C/W

Electrical Characteristics At Specified Virtual Junction Temperature

(Vi=10V,Io=500mA, Ci=0.33μF,Co=0.1μF,unless otherwise specified)

Symbol	Parameter	Test conditions		Min	Typ	Max	Unit
Vo	Output Voltage		25°C	4.8	5.0	5.2	V
		7V≤ Vi ≤20V,I_O=5mA-1A,P≤15W	0-125°C	4.75	5.00	5.25	V
ΔVo	Load Regulation	I_O=5mA - 1.2A	25°C		9	100	mV
		I_O=250mA - 750mA	25°C		4	50	mV
ΔVo	Line Regulation	7V≤ Vi ≤25V	25°C		4	100	mV
		8V≤ Vi ≤12V	25°C		1.6	50	mV
Iq	Quiescent Current		25°C		5	8	mA
ΔIq	Quiescent Current Change	7V≤ Vi ≤25V	0-125°C		0.3	1.3	mA
ΔIq		5 mA≤I_O≤1A	0-125°C		0.03	0.5	mA
ΔVo/ΔT	Output Voltage Drift	I_O=5mA	0-125°C		-1.1		mV/°C
VN	Output Noise Voltage	f =10Hz to 100KHz	25°C		42		μV
RR	Ripple Rejection	f =120Hz,8V≤ V_i ≤18V	0-125°C	62	73		dB
Vd	Dropout Voltage	I_O=1.0A	25°C		2		V
R_O	Output Resistance	f = 1KHz	25°C		10		mΩ
Isc	Short Circuit Current		25°C		230		mA
Ipk	Peak Current		25°C		2.2		A

Typical Application



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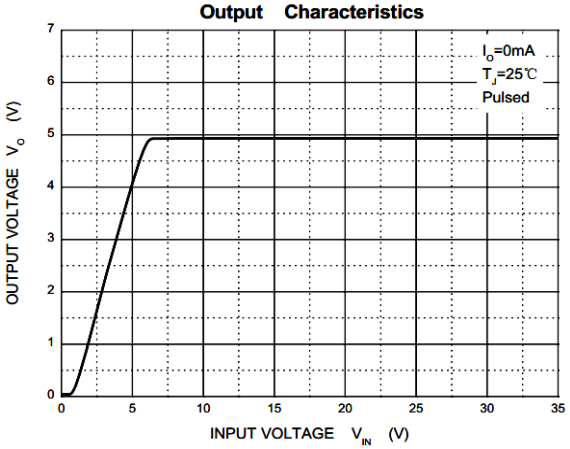
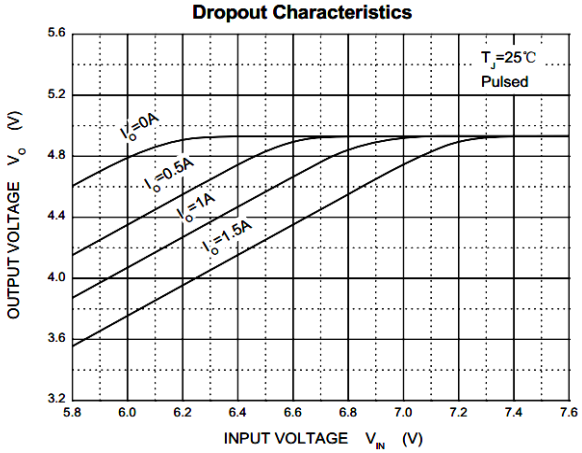
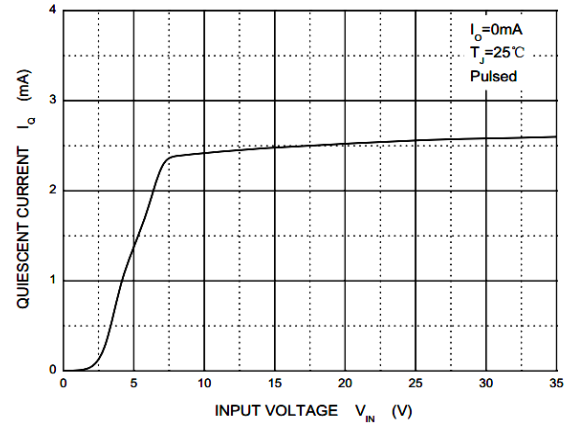
Output Characteristics



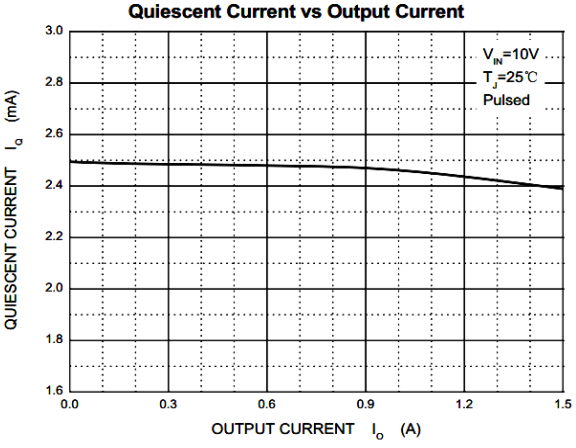
Dropout Characteristics



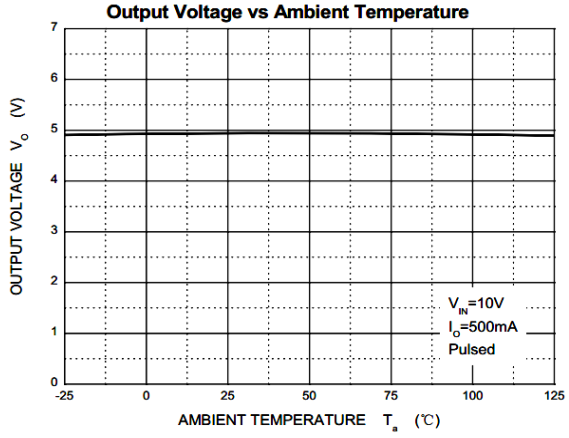
Quiescent Current



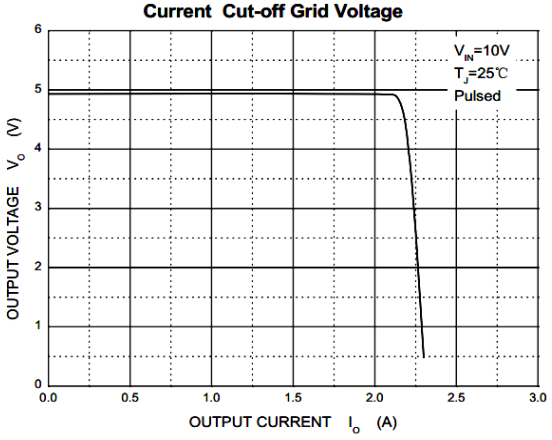
Quiescent Current vs Output Current



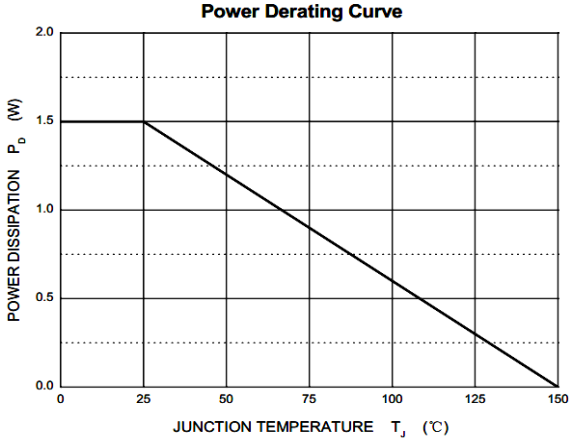
Output Voltage vs Ambient Temperature



Current Cut-off Grid Voltage



Power Derating Curve



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