



# TIGER ELECTRONIC CO.,LTD

## SOT-89 Encapsulate Three Terminal Voltage Regulator

### LM78L05F Three-terminal positive voltage regulator

#### FEATURES

Maximum Output current

$I_{OM}$ : 0.1 A

Output voltage

$V_O$ : 5 V

Continuous total dissipation

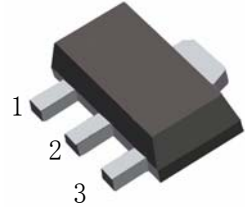
$P_D$ : 0.5 W

SOT-89

1. OUT

2. GND

3. IN



#### ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

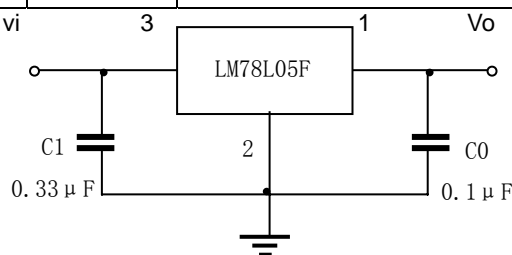
Parameter	Symbol	Value	Units
Input Voltage	$V_1$	30	V
Operating Junction Temperature Range	$T_{OPR}$	0—+125	°C
Storage Temperature Range	$T_{STG}$	-55—+150	°C

#### ELECTRICAL CHARACTERISTICS

( $V_I=10V, I_o=40mA, 0^\circ C < T_j < 125^\circ C, C_1=0.33 \mu F, C_o=0.1 \mu F$ , unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	$V_O$	$T_j=25^\circ C$	4.8	5.0	5.2	V
		$7V \leq V_1 \leq 20V, I_o=1mA-40mA$	4.75	5.0	5.25	V
		$7V \leq V_1 \leq V_{MAX}, I_o=1mA-70mA$	4.75	5.0	5.25	V (note)
Load Regulation	$\Delta V_O$	$T_j=25^\circ C, I_o=1mA-100mA$		11	60	mV
		$T_j=25^\circ C, I_o=1mA-40mA$		5.0	30	mV
Line regulation	$\Delta V_O$	$7V \leq V_1 \leq 20V, T_j=25^\circ C$		32	150	mV
		$8V \leq V_1 \leq 20V, T_j=25^\circ C$		26	100	mV
Quiescent Current	$I_q$	$25^\circ C$		3.8	6	mA
Quiescent Current Change	$\Delta I_q$	$8V \leq V_1 \leq 20V$			1.5	mA
	$\Delta I_q$	$1mA \leq I_o \leq 40mA$			0.1	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100KHz$		42		$\mu V$
Ripple Rejection	RR	$8V \leq V_1 \leq 18V, f=120Hz, T_j=25^\circ C$	41	80		dB
Dropout Voltage	$V_d$	$T_j=25^\circ C$		1.7		V

#### TYPICAL APPLICATION

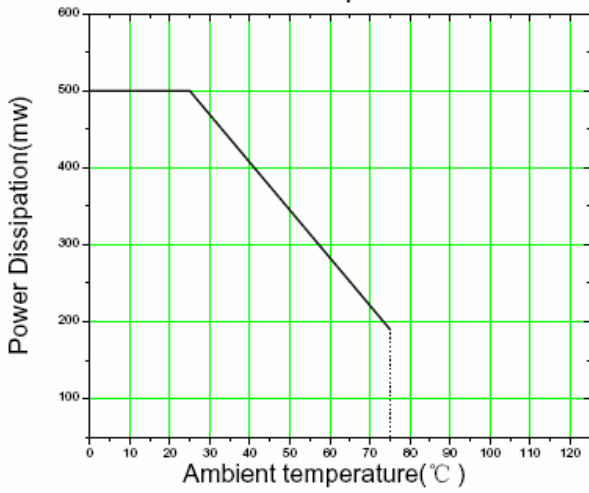


Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

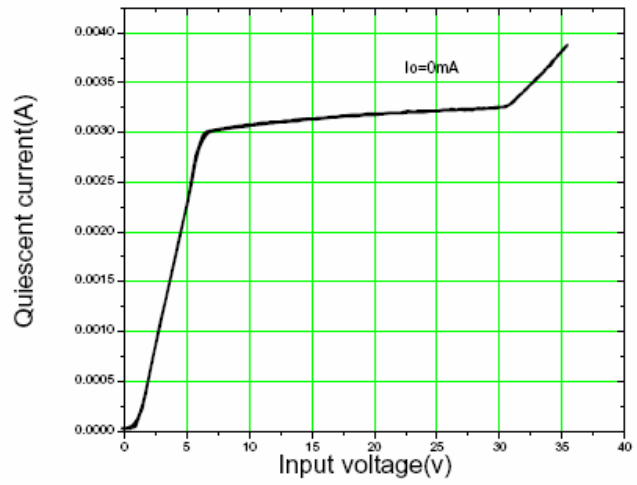
# Typical Characteristics

# L M 78L05 F

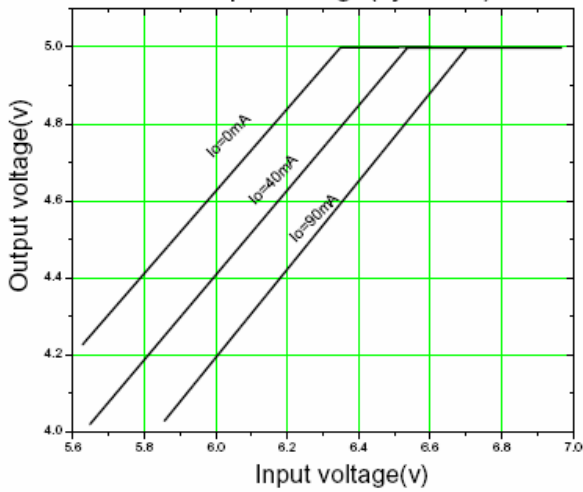
Ambient temperature VS Power Dissipation



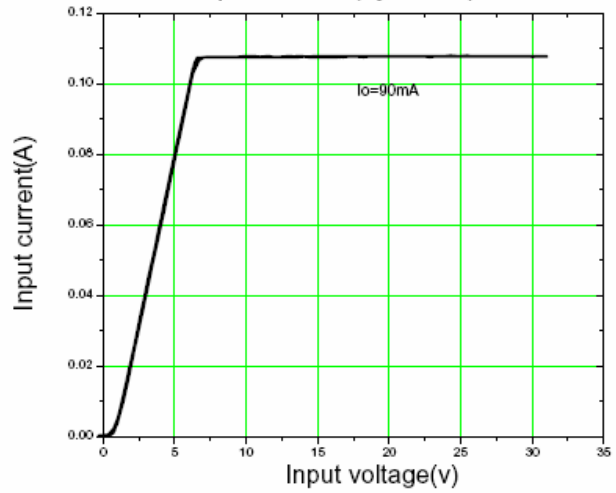
Input voltage VS Quiescent current (Tj=25°C)



Input voltage VS Output voltage (Tj=25°C)



Input voltage VS Input current (Tj=25°C)



Ambient temperature VS Output voltage

