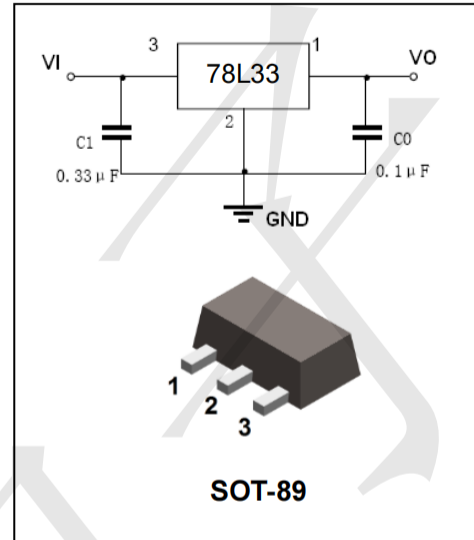


FEATURES

- Wide range of available, fixed output voltage.
- Low cost.
- Internal short-circuit current limiting.
- Internal thermal overload protection.
- No external components required.

HF



APPLICATIONS

- Three-terminal positive voltage regulator.

ORDERING INFORMATION

Type No.	Marking	Package Code
TP78L33T3	78L33	SOT-89

MAXIMUM RATING

operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
V_I	Input voltage	30	V
I_{CM}	Maximum output current	100	mA
$R_{\theta JA}$	Thermal Resistance Junction-to-Air	250	°C/W
P_D	Power dissipation ($T_A = 25^\circ\text{C}$)	500	mW
T_{OPR}	Operating Temperature Range	-40 ~ +125	°C
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-65 ~ +150	°C

ELECTRICAL CHARACTERISTICS

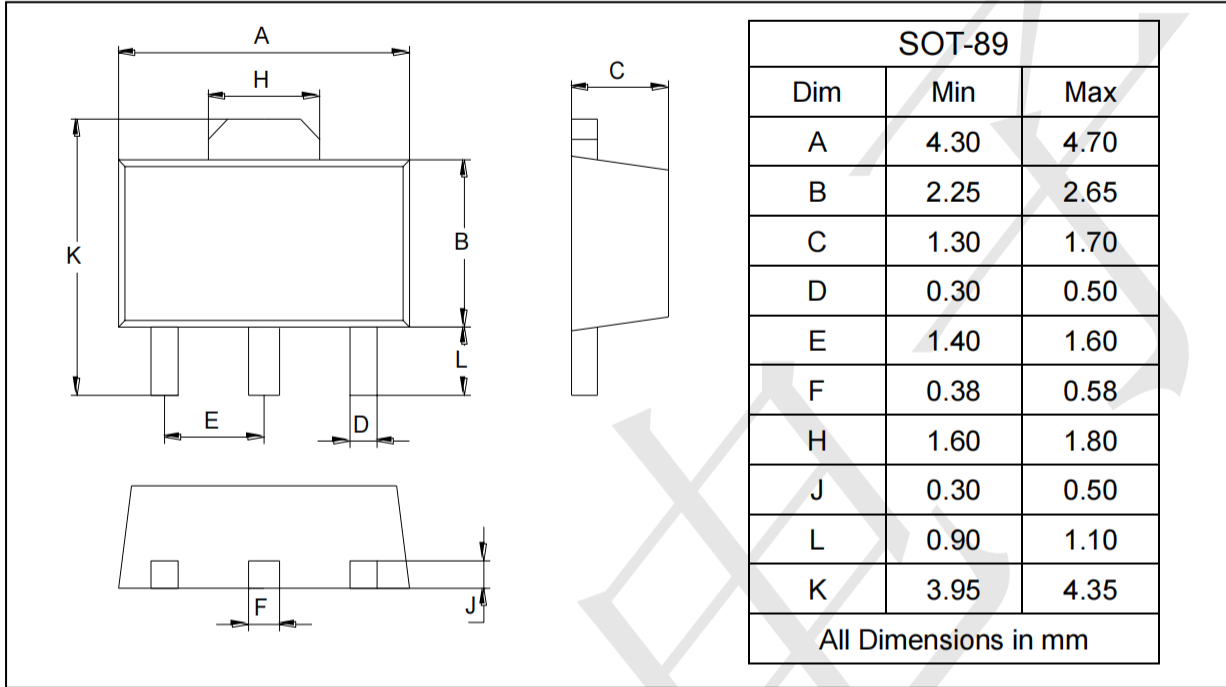
($V_{IN}=8.3V, I_O=40mA, 0^{\circ}C < T_J < 125^{\circ}C, C_I=0.33\mu F, C_O=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	TP78L33T3			UNIT
			MIN	TYP	MAX	
Output voltage	V_O	$T_J=25^{\circ}C$	3.168	3.3	3.432	V
		$5.8V \leq V_i \leq 20V, I_O=1mA-40mA$	3.135	-	3.465	
		$V_i=8.3V, I_O=1mA-70mA$	3.135	-	3.465	
Load regulation	Reg_{load}	$T_J=25^{\circ}C, I_O=1mA-100mA$	-	-	60	mV
		$T_J=25^{\circ}C, I_O=1mA-40mA$	-	-	30	
Line regulation	Reg_{line}	$5.8V \leq V_i \leq 20V, T_J=25^{\circ}C$	-	-	150	mV
		$6.3V \leq V_i \leq 20V, T_J=25^{\circ}C$	-	-	100	
Input Bias Current	I_{IB}	$T_J=25^{\circ}C$	-	-	6.0	mA
		$T_J=125^{\circ}C$	-	-	5.5	
Input Bias Current Change	ΔI_{IB}	$6.3V \leq V_i \leq 20V$ $1mA \leq I_O \leq 40mA$	-	-	1.5 0.1	mA
Output noise voltage	V_N	$10Hz \leq f \leq 100KHz$	-	40	-	μV
Ripple rejection	RR	$I_O=40mA, 6.3V \leq V_i \leq 16.3V$ $f=120Hz, T_J=25^{\circ}C$	41	49	-	dB
Dropout voltage	V_i-V_O	$T_J=25^{\circ}C$	-	2.5	-	V

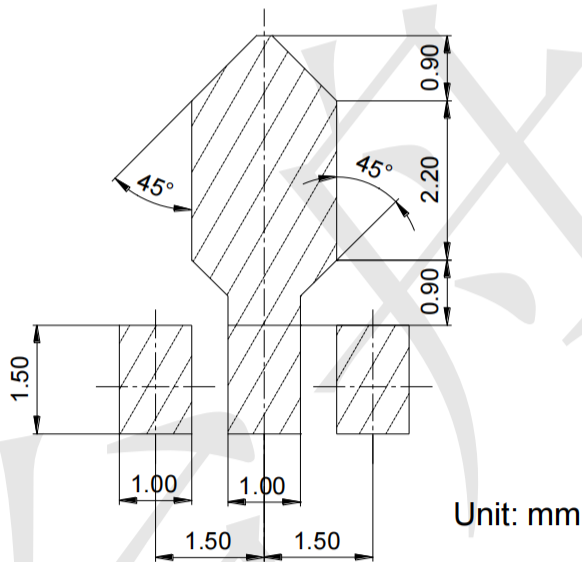
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
TP78L33T3	SOT-89	1000 pcs / Tape & Reel