

## FEATURE

### Maximum Output current

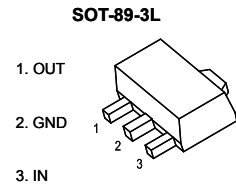
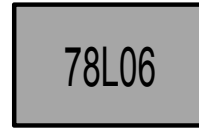
$I_{OM}$ : 0.1A

### Output voltage

$V_o$ : 6 V

### Continuous total dissipation

$P_D$ : 0.5W



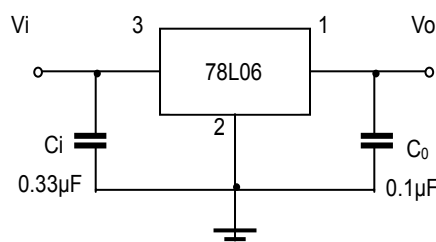
## ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

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

## ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output voltage	$V_o$	25°C	5.75	6.0	6.25	V	
		0-125°C	$8V \leq V_i \leq 20V, I_o = 1mA-40mA$	5.7	6.0	6.3	V
			$I_o = 1mA-70mA$	5.7	6.0	6.3	V
Load Regulation	$\Delta V_o$	$I_o = 1mA-100mA$ , 25°C		16	80	mV	
		$I_o = 1mA-40mA$ , 25°C		9	40	mV	
Line regulation	$\Delta V_o$	$8V \leq V_i \leq 20V$ , 25°C		35	175	mV	
		$9V \leq V_i \leq 20V$ , 25°C		29	125	mV	
Quiescent Current	$I_q$	25°C		3.9	6.0	mA	
Quiescent Current Change	$\Delta I_q$	$9V \leq V_i \leq 20V$ , 0-125°C			1.5	mA	
	$\Delta I_q$	$1mA \leq I_o \leq 40mA$ , 0-125°C			0.1	mA	
Output Noise Voltage	$V_N$	10Hz ≤ f ≤ 100KHz, 25°C		46		uV	
Ripple Rejection	RR	$9V \leq V_i \leq 19V, f = 120Hz$ , 0-125°C	40	48		dB	
Dropout Voltage	$V_d$	25°C		1.7		V	

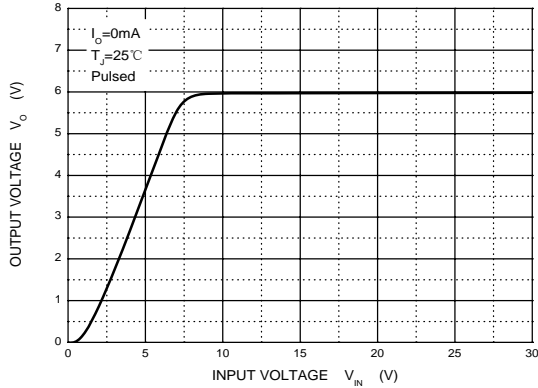
## TYPICAL APPLICATION



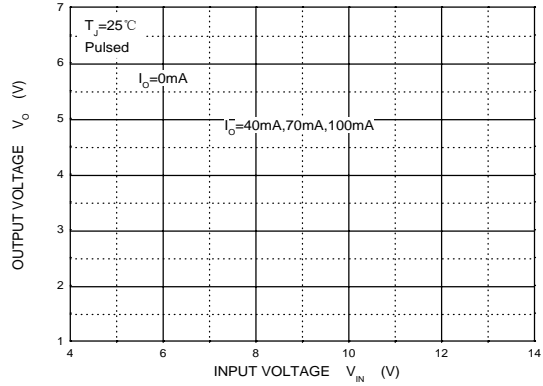
Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

RATING AND CHARACTERISTIC CURVES

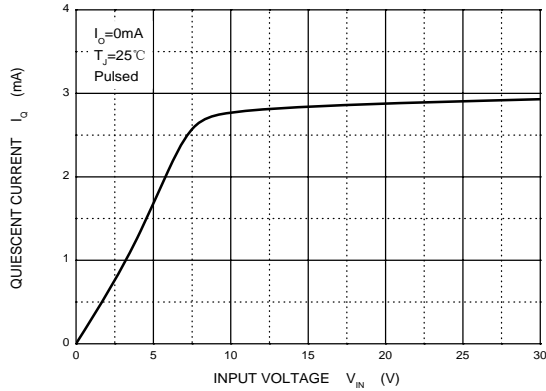
Output Characteristics



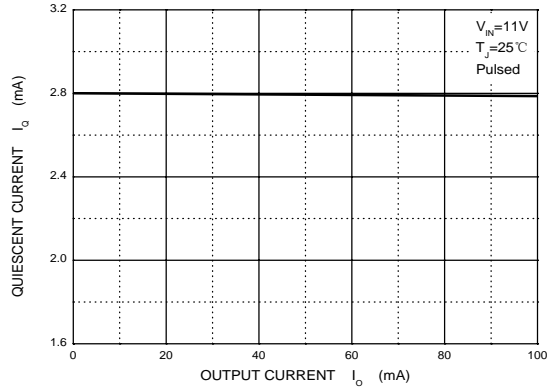
Dropout Characteristics



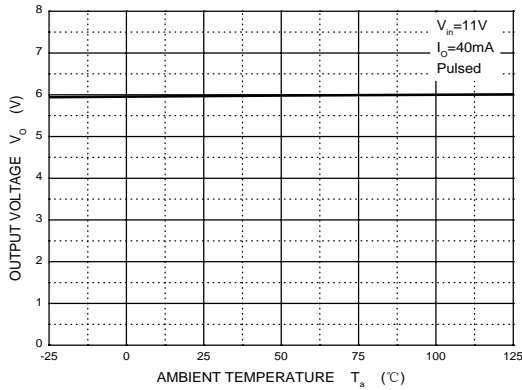
Quiescent Current vs Input Voltage



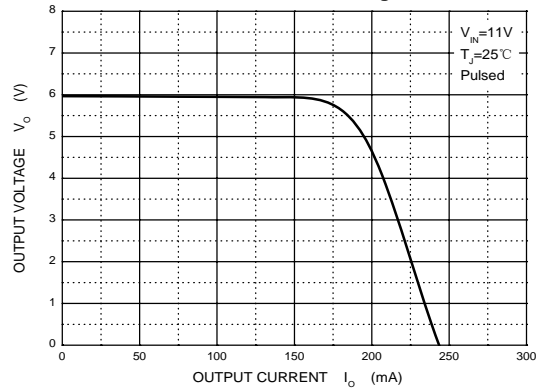
Quiescent Current vs Output Current



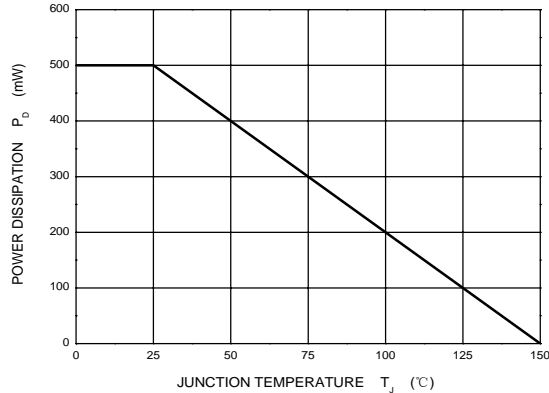
Output Voltage vs Ambient Temperature



Current Cut-off Grid Voltage

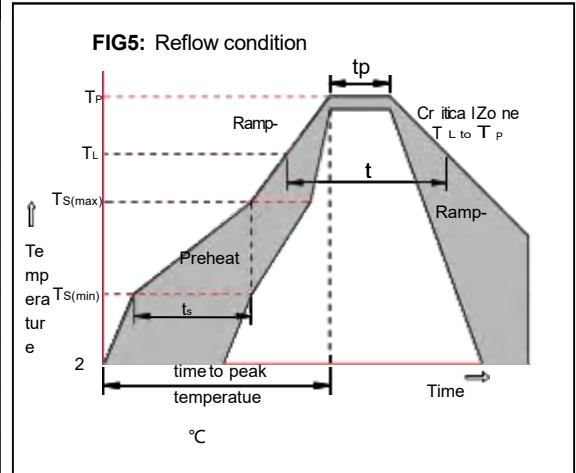


Power Derating Curve



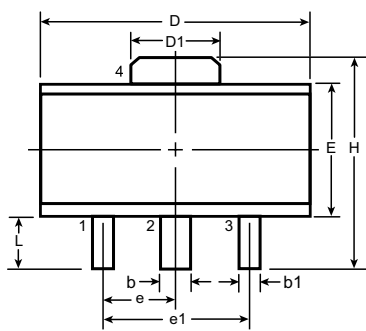
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150 °C
	-Temperature Max ( $T_{s(max)}$ )	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3 °C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature ( $T_L$ ) (Liquid us)	+217 °C
	-Temperature ( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260 °C

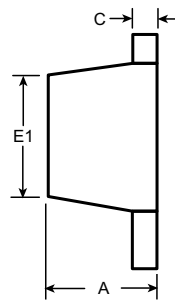


Package Dimensions & Suggested Pad Layout

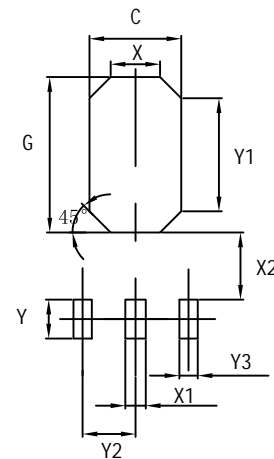
SOT89



Top View



Side View



Symbol	A	b	b1	C	D	D1	E	E1	e	e1	H	L	
Dimensions (mm)	MIN	1.40	0.44	0.36	0.3	4.40	1.50	2.29	2.00 <sup>†</sup>	1.50	3.00	3.94	0.89
	NOM	-	-	-	-	-	-	-	1.50	3.00	-	-	
	MAX	1.60	0.56	0.48	0.5	4.60	1.75	2.60	2.29	-	-	4.25	1.20

Dimensions	Value (in mm)
C	2.50
G	3.60
X	1.40
X1	0.90
X2	0.90
Y	1.40
Y1	2.60
Y2	1.50
Y3	0.90

Tape & reel specification

Tape		Symbol	Dimension (mm)		
		P0	4.00±0.20		
		P1	8.00±0.20		
		P2	2.00±0.20		
		D0	1.60±0.20		
		D1	1.60±0.20		
		E	1.75±0.20		
		F	7.50±0.15		
		W	16.00±0.20		
		A0	6.30±0.20		
		B0	8.25±0.20		
		K0	2.60±0.20		
		T	0.23±0.10		
		13" Reel		D2	180.0±5.0
				D3	60Min.
D4	R32.0±2.0				
G	R86.5±2.0				
H	R30.0±2.0				
I	13.0±2.0				
W1	13.20±2.0				
W2	16.50±2.0				
Quantity: 1000PCS					