

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



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GDT



PLED

## L7812CV(MS)

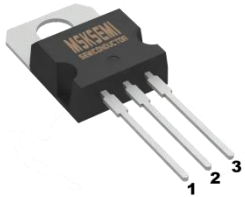

### Product specification

**Three-terminal positive voltage regulator**

**FEATURES**

- Maximum Output current IOM : 1.5 A
- Output voltage Vo:12V
- Continuous total dissipation  
 $P_D$ : 1.5 W ( $T_a = 25\text{ }^\circ\text{C}$ )  
 15 W( $T_c = 25\text{ }^\circ\text{C}$ )

**Reference News**

PACKAGE OUTLINE	Marking
 <p>1.IN 2.GND 3.OUT</p>	

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

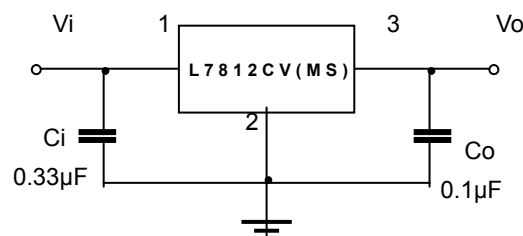
Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	8.3	$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_{OPR}$	0~+150	$^\circ\text{C}$
Storage Temperature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

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE**

( $V_i=19\text{V}$ ,  $I_o=500\text{mA}$ ,  $C_i=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ , unless otherwise specified )

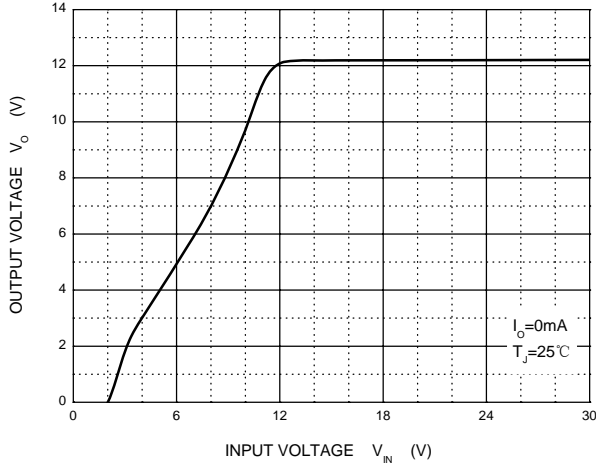
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	$V_o$	$25\text{ }^\circ\text{C}$	11.5	12.0	12.5	V
		$I_o=5.0\text{mA}-1.0\text{A}$ , $P\leq 15\text{W}$ $14.5\text{V}\leq V_i\leq 27\text{V}$ $0-125\text{ }^\circ\text{C}$	11.4	12	12.6	V
Load Regulation	$\Delta V_o$	$14.5\text{V}\leq V_i\leq 30\text{V}$ $25\text{ }^\circ\text{C}$		10	240	mV
		$16\text{V}\leq V_i\leq 22\text{V}$ $25\text{ }^\circ\text{C}$		3	120	mV
Line regulation	$\Delta V_o$	$I_o=5\text{mA}-1.5\text{A}$ $25\text{ }^\circ\text{C}$		12	240	mV
		$I_o=250\text{mA}-750\text{mA}$ $25\text{ }^\circ\text{C}$		4	120	mV
Quiescent Current	$I_q$	$25\text{ }^\circ\text{C}$		4.3	8	mA
Quiescent Current Change	$\Delta I_q$	$5.0\text{mA}\leq I_o\leq 1.0\text{A}$ $0-125\text{ }^\circ\text{C}$			0.5	mA
		$14.5\text{V}\leq V_i\leq 30\text{V}$ $0-125\text{ }^\circ\text{C}$			1.0	mA
Output voltage drift	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$ $0-125\text{ }^\circ\text{C}$		-1		$\text{mV}/^\circ\text{C}$
Output Noise Voltage	$V_N$	$f=10\text{Hz to }100\text{KHz}$ $25\text{ }^\circ\text{C}$		75		$\mu\text{V}$
Ripple Rejection	RR	$f=120\text{Hz}$ , $15\text{V}\leq V_i\leq 25\text{V}$ $0-125\text{ }^\circ\text{C}$	55	71		dB
Dropout Voltage	$V_d$	$I_o=1.0\text{A}$ $25\text{ }^\circ\text{C}$		2		V
Output resistance	$R_o$	$f=1\text{KHz}$ $25\text{ }^\circ\text{C}$		18		$\text{m}\Omega$
Short Circuit Current	$I_{sc}$	$25\text{ }^\circ\text{C}$		350		mA
Peak Current	$I_{pk}$	$25\text{ }^\circ\text{C}$		2.2		A

**TYPICAL APPLICATION**

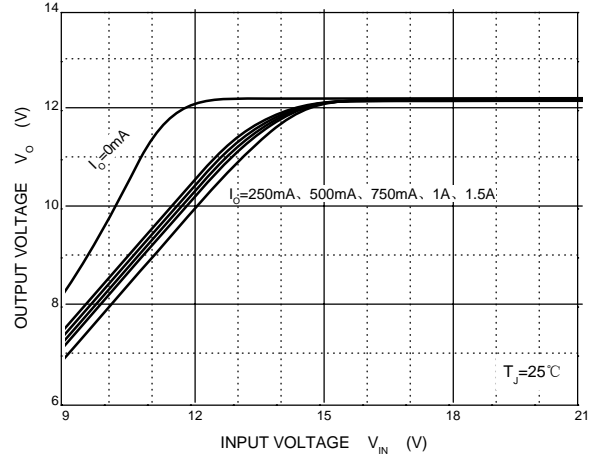


**Typical Characteristics**

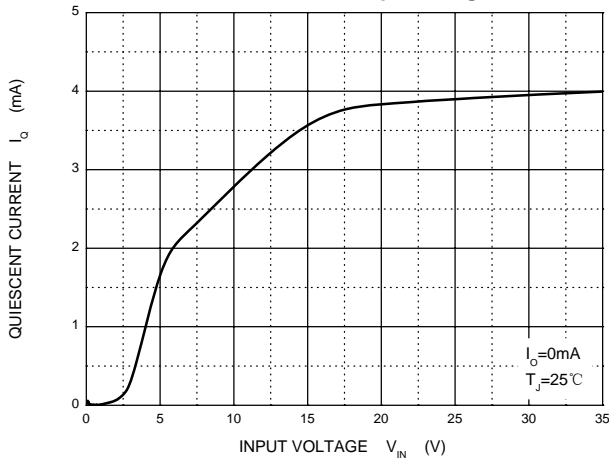
**Output Characteristics**



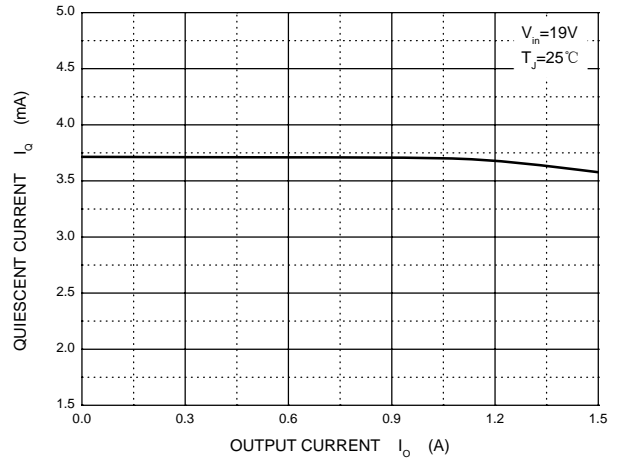
**Dropout Characteristics**



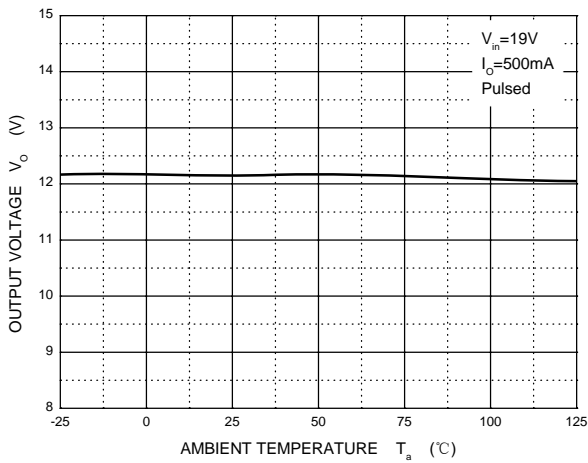
**Quiescent Current vs Input Voltage**



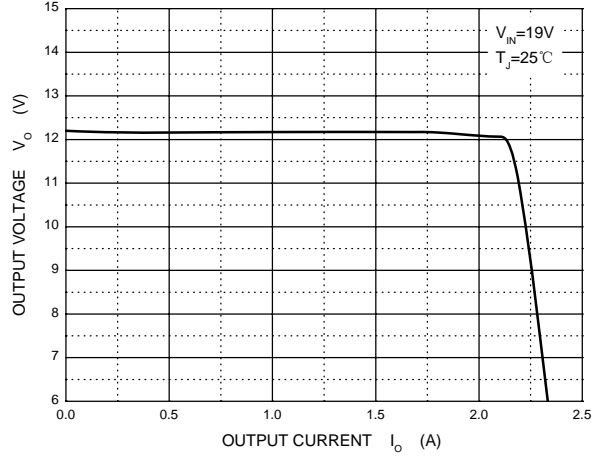
**Quiescent Current vs Output Current**



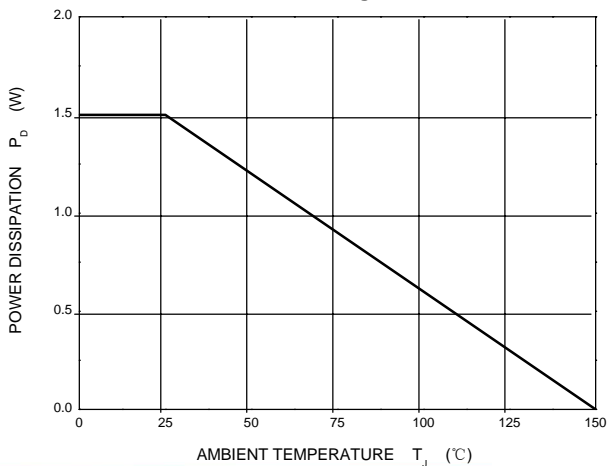
**Output Voltage vs Ambient Temperature**



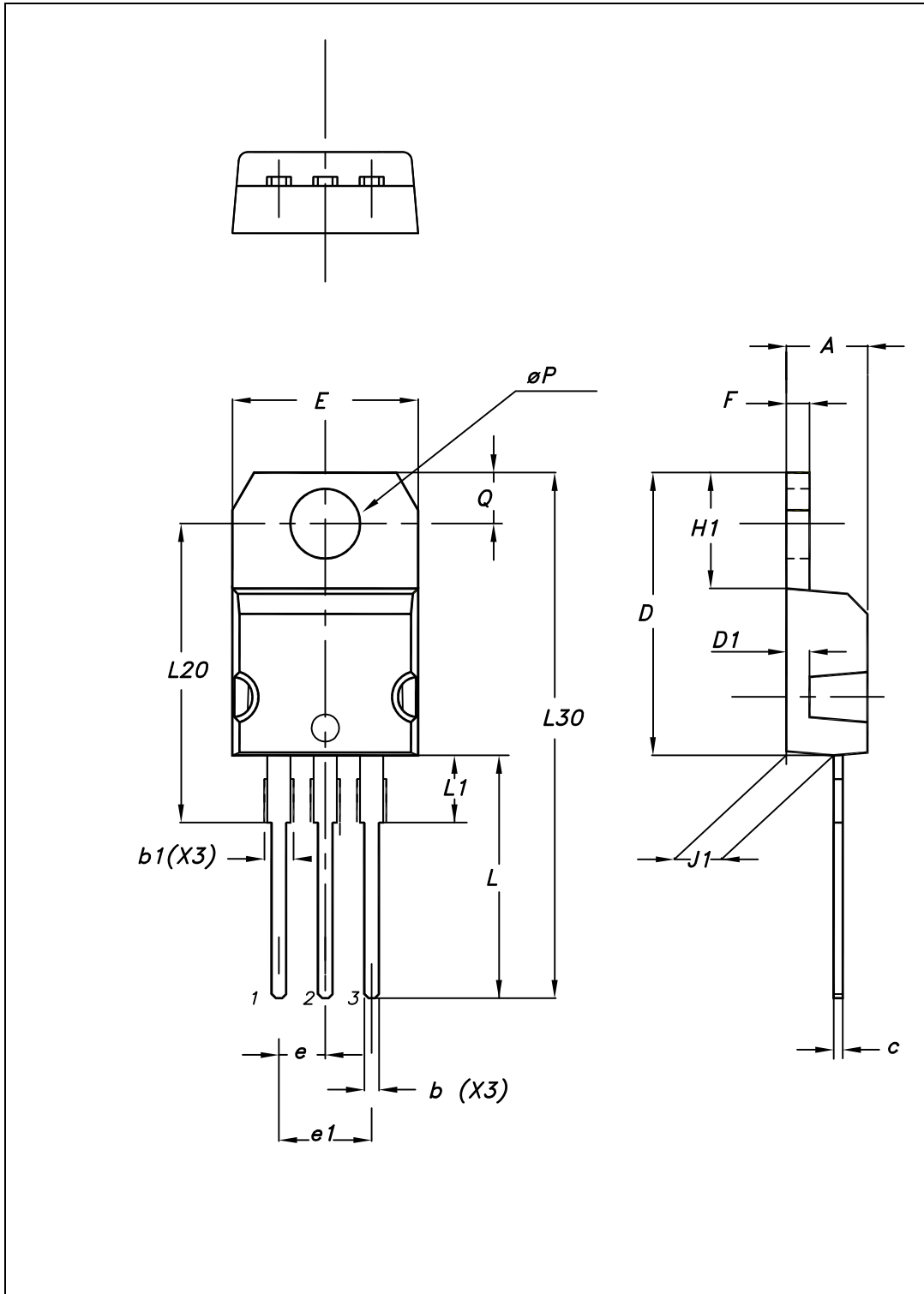
**Current Cut-off Grid Voltage**



**Power Derating Curve**



Package mechanical data



**Package mechanical data**

Dim.	mm		
	Min.	Typ.	Max.
A	4.40		4.60
b	0.61		0.88
b1	1.14		1.70
c	0.48		0.70
D	15.25		15.75
D1		1.27	
E	10		10.40
e	2.40		2.70
e1	4.95		5.15
F	1.23		1.32
H1	6.20		6.60
J1	2.40		2.72
L	13		14
L1	3.50		3.93
L20		16.40	
L30		28.90	
ØP	3.75		3.85
Q	2.65		2.95

**REEL SPECIFICATION**

P/N	PKG	QTY
L7812CV(MS)	TO-220	50/One tube 1000/a box of

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