

/ Descriptions

TO-220 Voltage Regulator in a TO-220 Plastic Package.

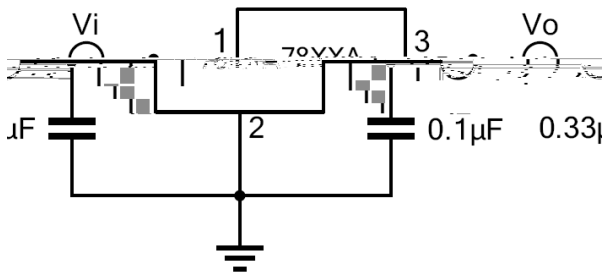
• / Features

1.0A,
3-Terminal regulators ,output current up to 1.0A, internal thermal overload protection and short-circuit limiting.

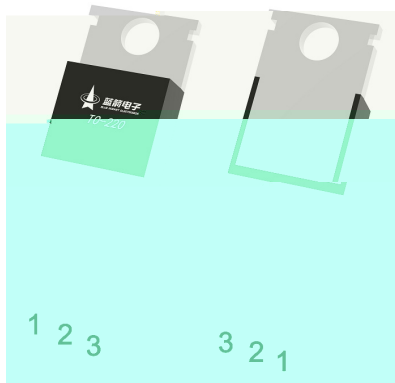
v / Applications

Voltage Regulator.

≈ / v ≈ / Equivalent Circuit or Application Circuit



┘ / Pinning



PIN1 IN PIN 2 GND PIN 3 OUT

. ㄣ / Marking

See Marking Instructions.

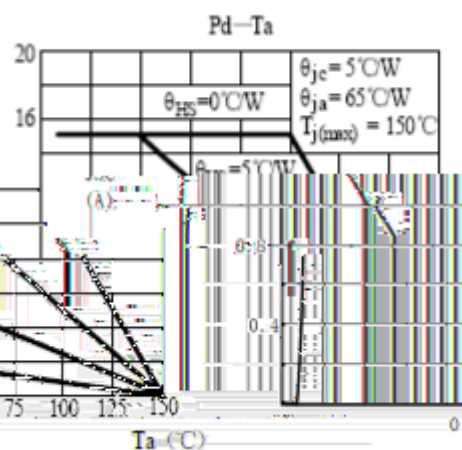
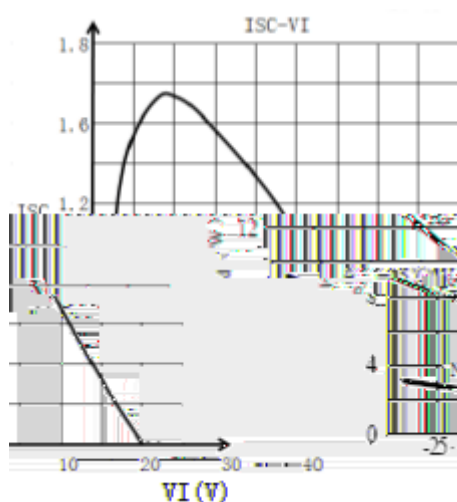
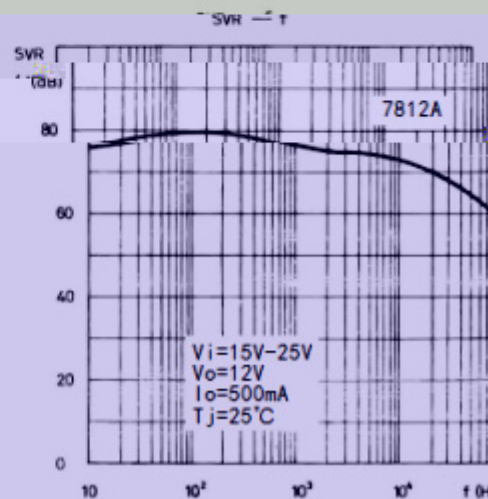
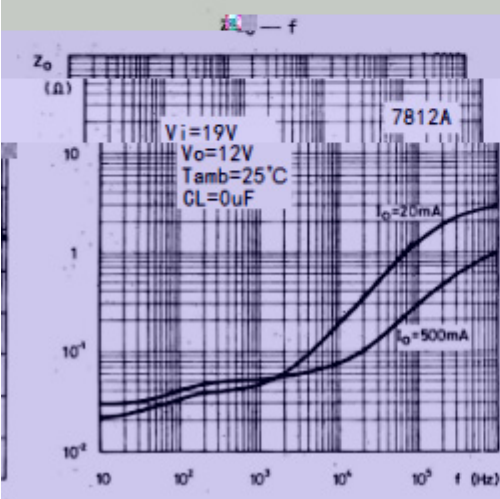
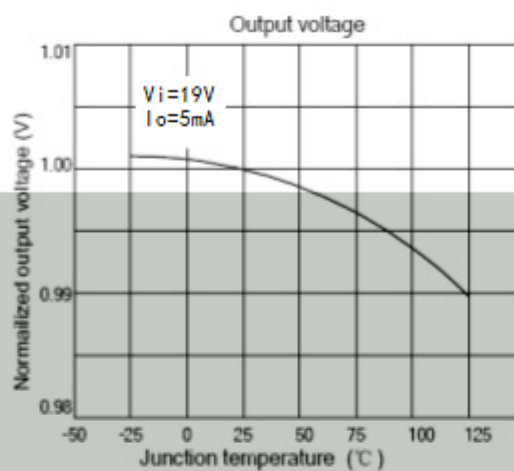
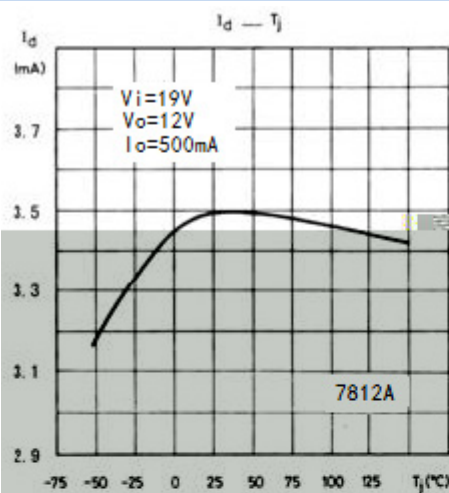
⚡ / Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Input voltage	V_i	7~35	V
Power Dissipation	P_D	Internally Limited	W
Thermal Resistance Junction-ambient	$R_{\theta JA}$	65	/W
Thermal Resistance Junction-case	$R_{\theta JC}$	5.0	/W
Operating Temperature Range	T_{OPR}	-40~125	
Storage temperature range	T_{stg}	-65~150	

⚡ / Electrical Characteristics($V_i=19V, I_o=500mA, T_j=-30^\circ\text{C} \sim 125^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^\circ\text{C}$	11.5	12.0	12.5	V
		$V_i=14.5V \sim 27V$ $I_o=5mA \sim 1.0A$ $P_D \leq 15W$	11.4	12.0	12.6	V
Load Regulation	ΔV_{Load}	$T_j=25^\circ\text{C}$ $I_o=5mA \sim 1.0A$			240	mV
		$T_j=25^\circ\text{C}$ $I_o=250mA \sim 750mA$			120	mV
Line Regulation	ΔV_{Line}	$T_j=25^\circ\text{C}$ $V_i=14.5V \sim 30V$			240	mV
		$T_j=25^\circ\text{C}$ $V_i=16V \sim 22V$			120	mV
Quiescent Current	I_q	$T_j=25^\circ\text{C}$			8.0	mA
Quiescent Current Change	ΔI_q	$V_i=14.5V \sim 30V$			1.0	mA
		$I_o=5mA \sim 1.0A$			0.5	mA
Output Voltage Drift	$\Delta V_o / \Delta T$	$I_o=5mA$ $T_j=0 \sim 125^\circ\text{C}$		-1.0		mV/
Output Noise Voltage	eN	B=10Hz~100KHz $T_j=25^\circ\text{C}$		75		$\mu V/V_o$
Supply Voltage Rejection	SVR	$V_i=15V \sim 25V$ $f=120Hz$	55			dB
Dropout Voltage	V_d	$I_o=1.0A$ $T_j=25^\circ\text{C}$		2.0		V
Output Resistance	R_o	$f=1KHz$		18		$m\Omega$
Short Circuit Current	Isc	$V_i=35V$ $T_j=25^\circ\text{C}$		200		mA

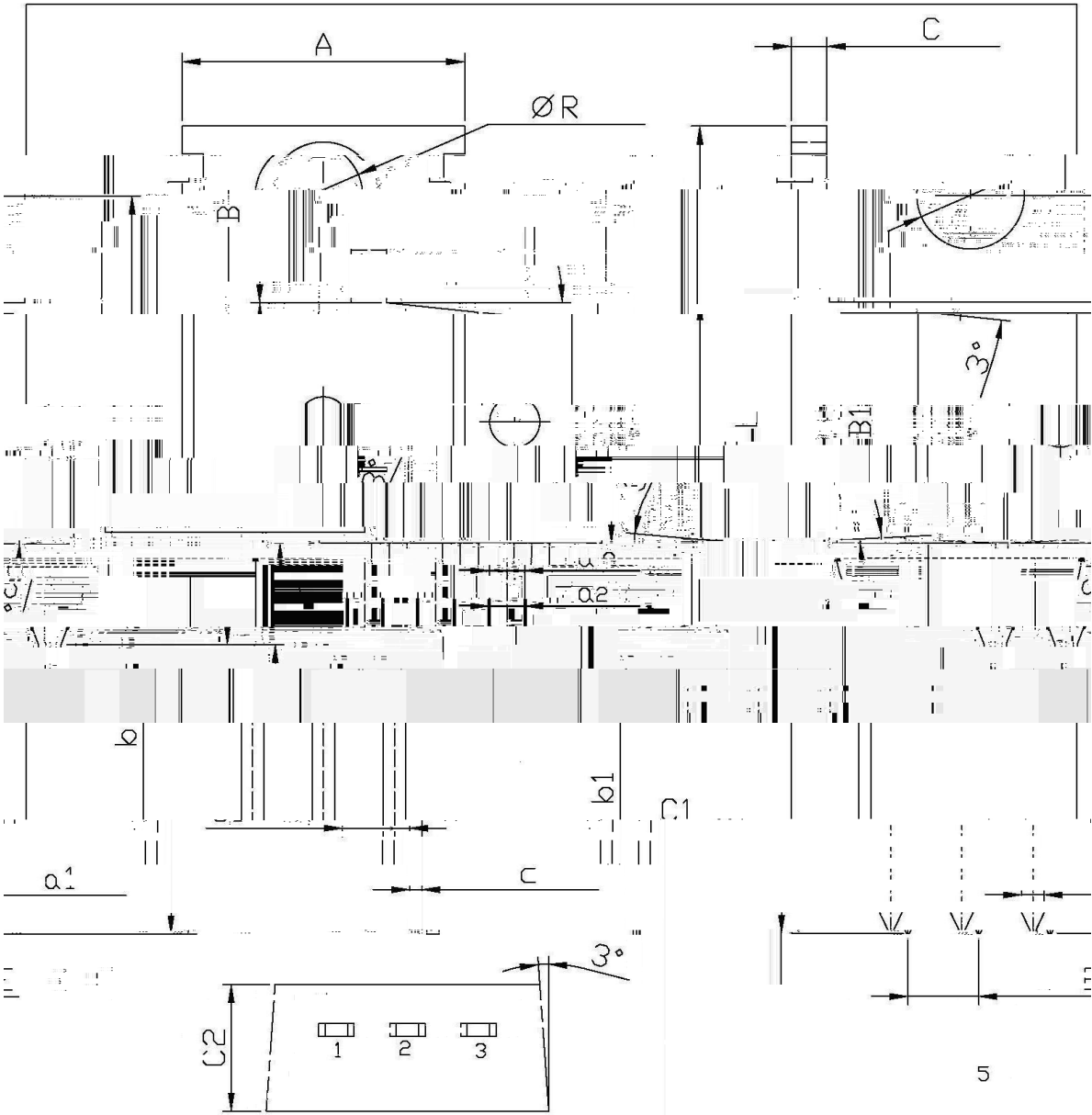
Electrical Characteristic Curve



/ Package Dimensions

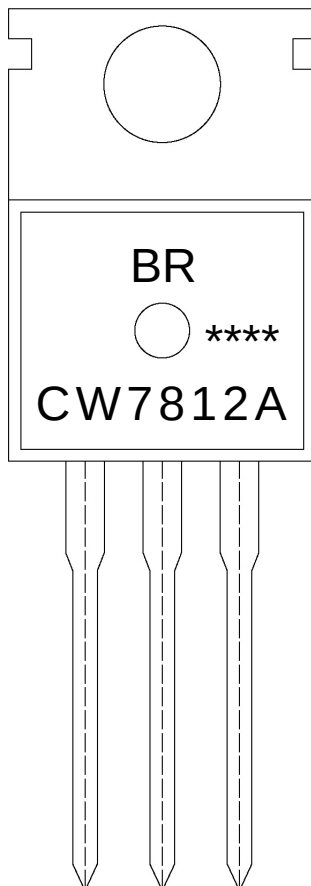
TQ-220

单位: mm



Dimensions In Millimeters			Dimensions In Millimeters		
Symbol	Min	Max	Symbol	Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
B	15.7	16.1	B1	9.0	9.4
b	12.6	13.6	C1	2.2	2.6

/ Marking Instructions



BR

CW7812A

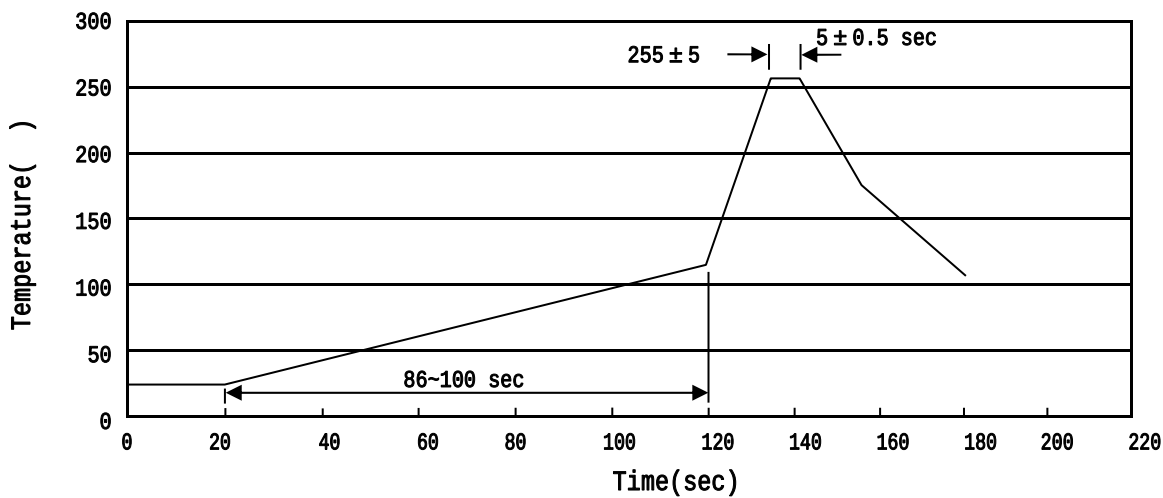
Note:

BR: Company Code

CW7812A: Product Type Code

****: Lot No. Code, code change with Lot No

↓ ↱ ∇ () / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-----|-----|----|------------|--|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 °C , Time:60~90sec. |
| 2 | 255 | 5 | 5 | 0.5sec; | 2.Peak Temp.:255 ± 5 °C , Duration:5 ± 0.5sec. |
| 3 | | | 2 | 10 °C/sec. | 3. Cooling Speed: 2~10 °C/sec. |

↓ ∇ / Resistance to Soldering Heat Test Conditions

270 ± 5 10 ± 1 sec. Temp.:270±5 °C Time:10±1 sec

— / Packaging SPEC.

/ BULK

Package Type	Units					Dimension (unit mm ³)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

