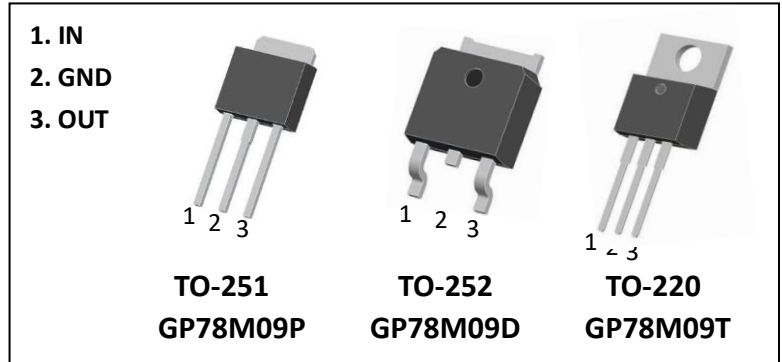


GP78M09X

Feature

- Thermal Overload Protection
- Short Circuit Protection
- Output Voltage: 9V
- Output Current: 500mA
- Output Transition Safe-Area Compensation



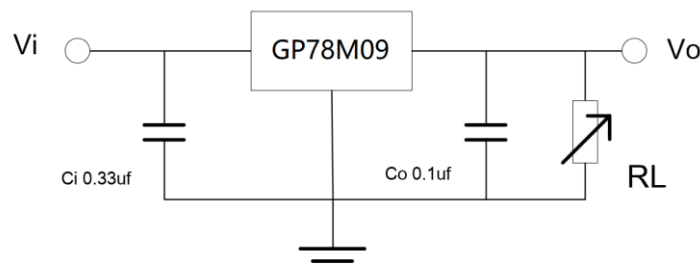
Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Input voltage	V_i	36	V
Thermal Resistance from Junction to Air (TO-251/TO-252)	$R_{\theta JA}$	80	°C/W
Thermal Resistance from Junction to Air (TO-220)	$R_{\theta JA}$	66.7	°C/W
Operating Junction Temperature Range	T_{OPR}	-25~+125	°C
Storage Temperature Range	T_{STG}	-25~+150	°C

Electrical Characteristics (Ta=25°C unless otherwise noted)

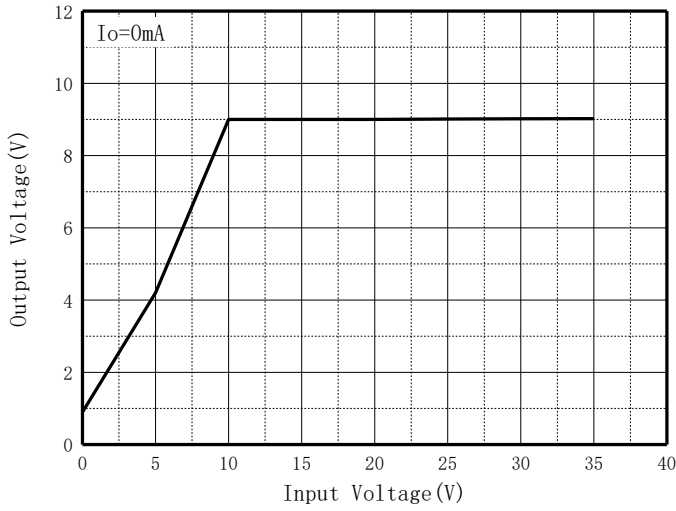
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Output voltage	V_o	$V_{IN}=14V, I_o=500mA$	8.65	9.00	9.35	V
Load Regulation	ΔV	$5mA \leq I_o \leq 500mA, V_{IN}=14V$			49	mV
		$5mA \leq I_o \leq 999mA, V_{IN}=14V$			89	
Line regulation	ΔV	$12V \leq V_{IN} \leq 18V, I_o = 500mA$			34	mV
Quiescent Current	I_B	$I_o = 5mA, V_{IN} = 14V$	3.0	3.9	4.7	mA
Quiescent Current Change	ΔI_B	$5mA \leq I_o \leq 500mA, V_{IN}=14V$		0.3	0.4	mA
		$12V \leq V_{IN} \leq 26V, I_o = 100mA$		0.3	0.7	
Dropout Voltage	$V_{o2} - V_{o1}$	$V_{o1}@V_{IN}=12V, I_o=5mA$ $V_{o2}@V_{IN}=11.4V, I_o=1A$	-80		80	mV
Supply Current	I_{CC}	$V_i=36V, I_o=0mA$			9	mA

Typical Application

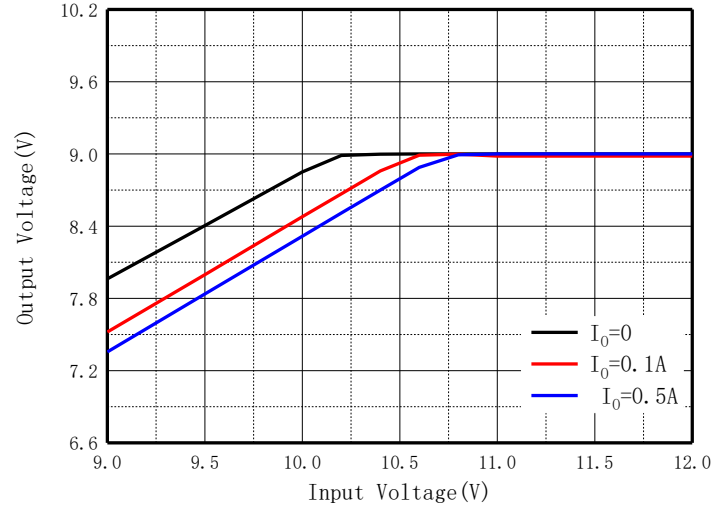


Typical Performance Characteristics

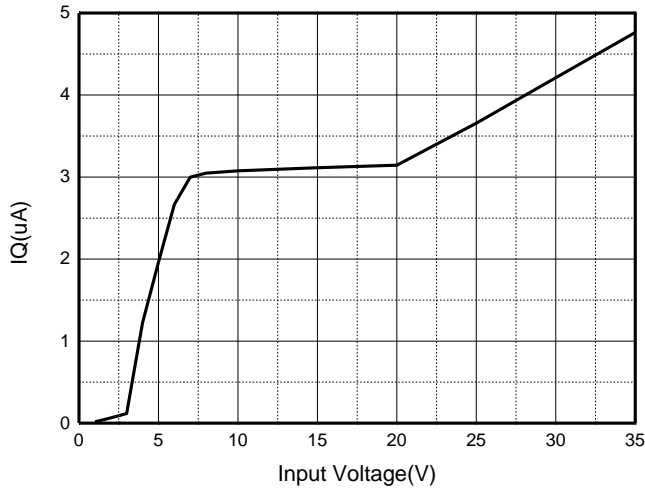
Output Characteristics



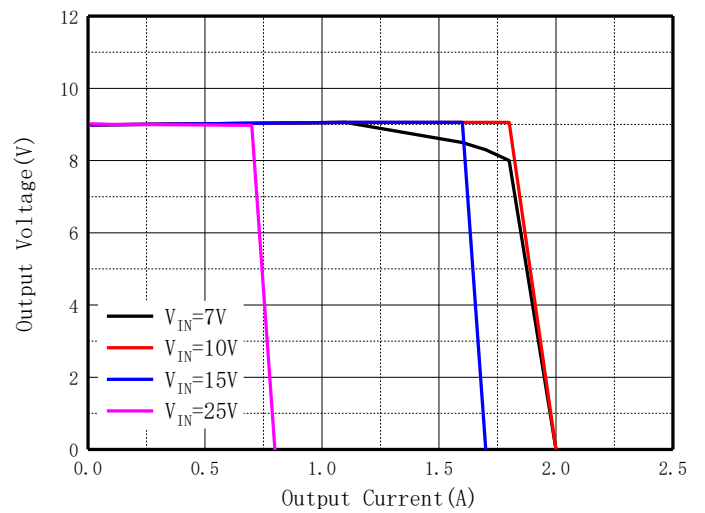
Output Characteristics



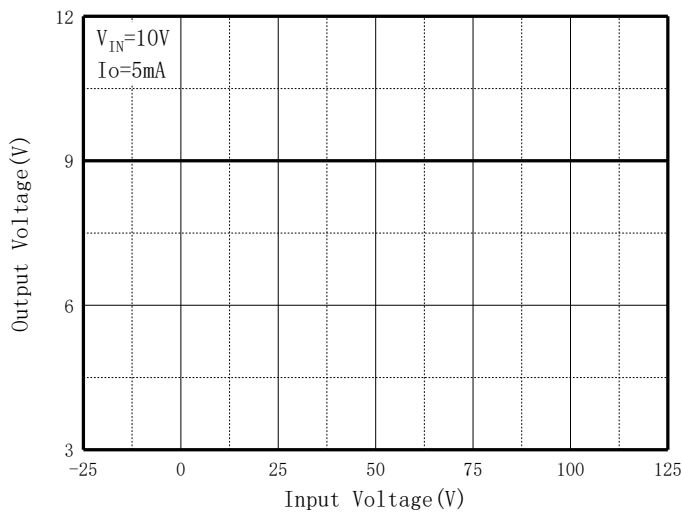
Quiescent Current



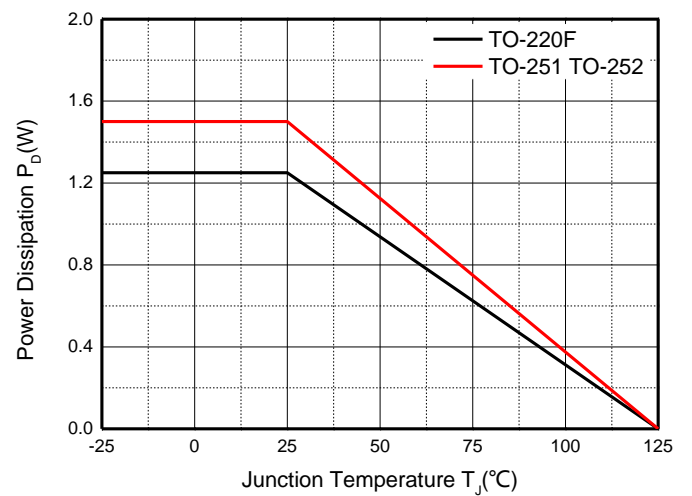
Current Cut-off Grid Voltage



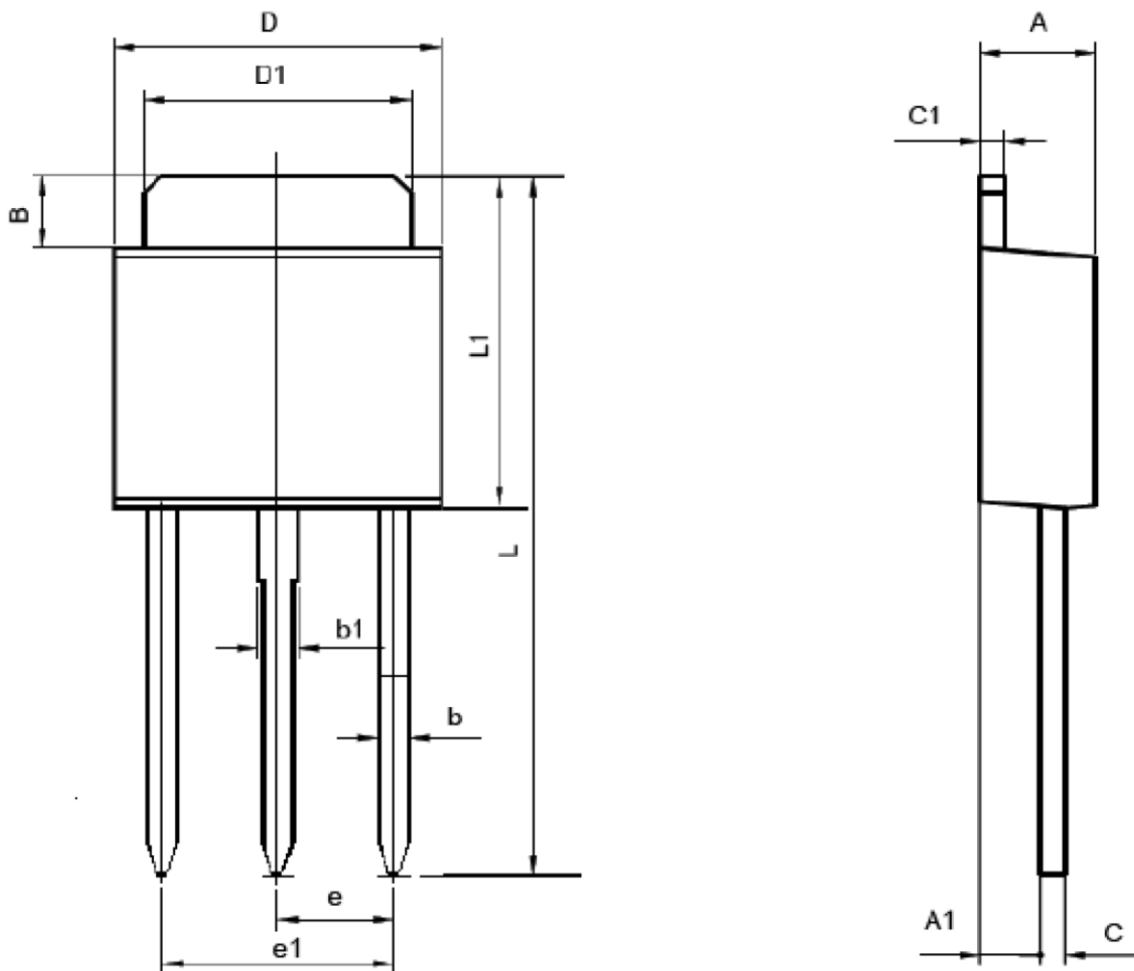
Output Voltage vs Junction Temperature



Power Derating Curve

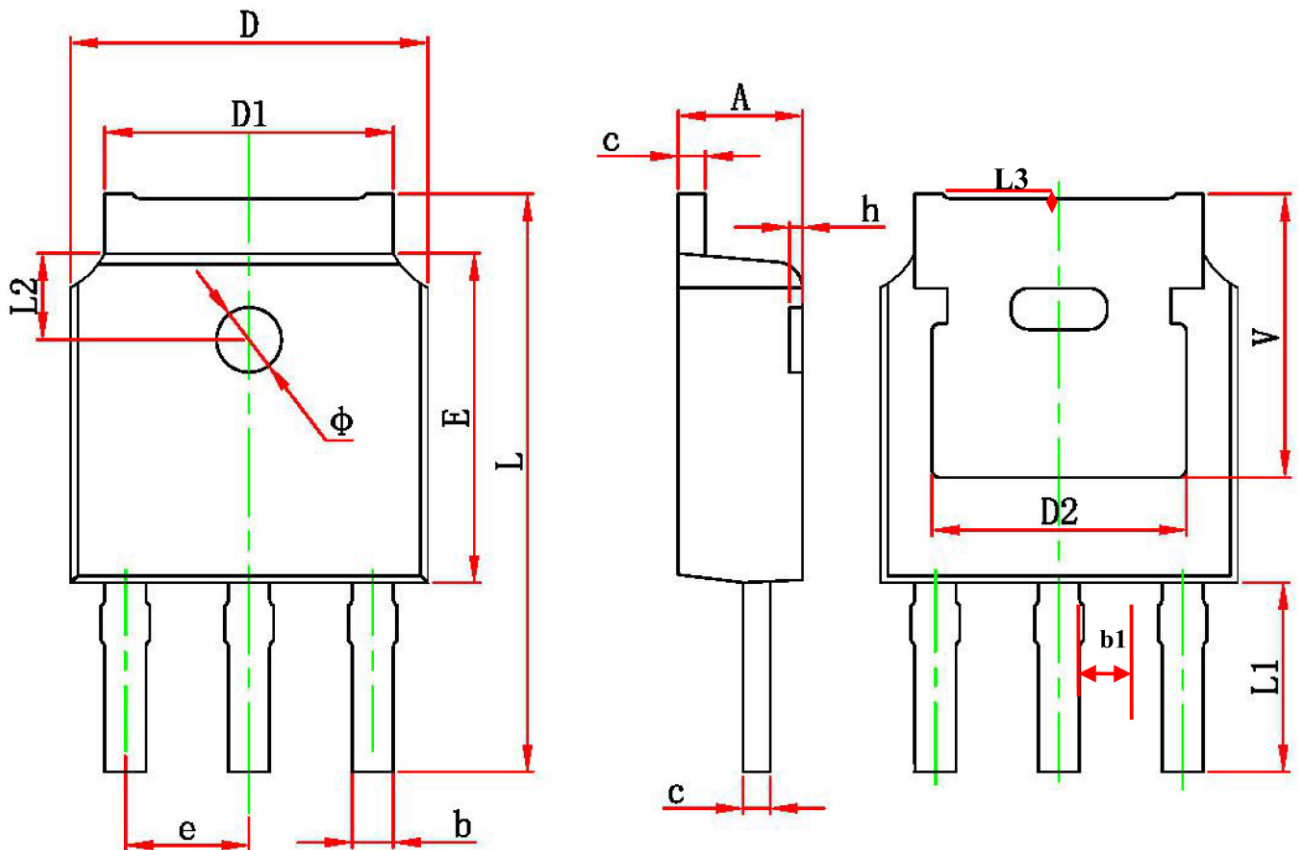


TO-251 Package Outline Dimensions



SYMBOL				
	MIN	MAX	MIN	MAX
A	2.2	2.4	0.087	0.091
A1	1.1	1.3	0.043	0.051
B	1.3	1.7	0.051	0.067
b	0.5	0.7	0.02	0.028
b1	0.7	0.9	0.028	0.035
c	0.46	0.56	0.018	0.022
c1	0.46	0.56	0.018	0.022
D	6.36	6.65	0.25	0.2622
D1	5.2	5.4	0.205	0.213
L1	6.85	7.15	0.27	0.281
e	2.30TYP.		0.091TYP.	
e1	4.5	4.7	0.177	0.185
L	14.85	15.45	0.585	0.608

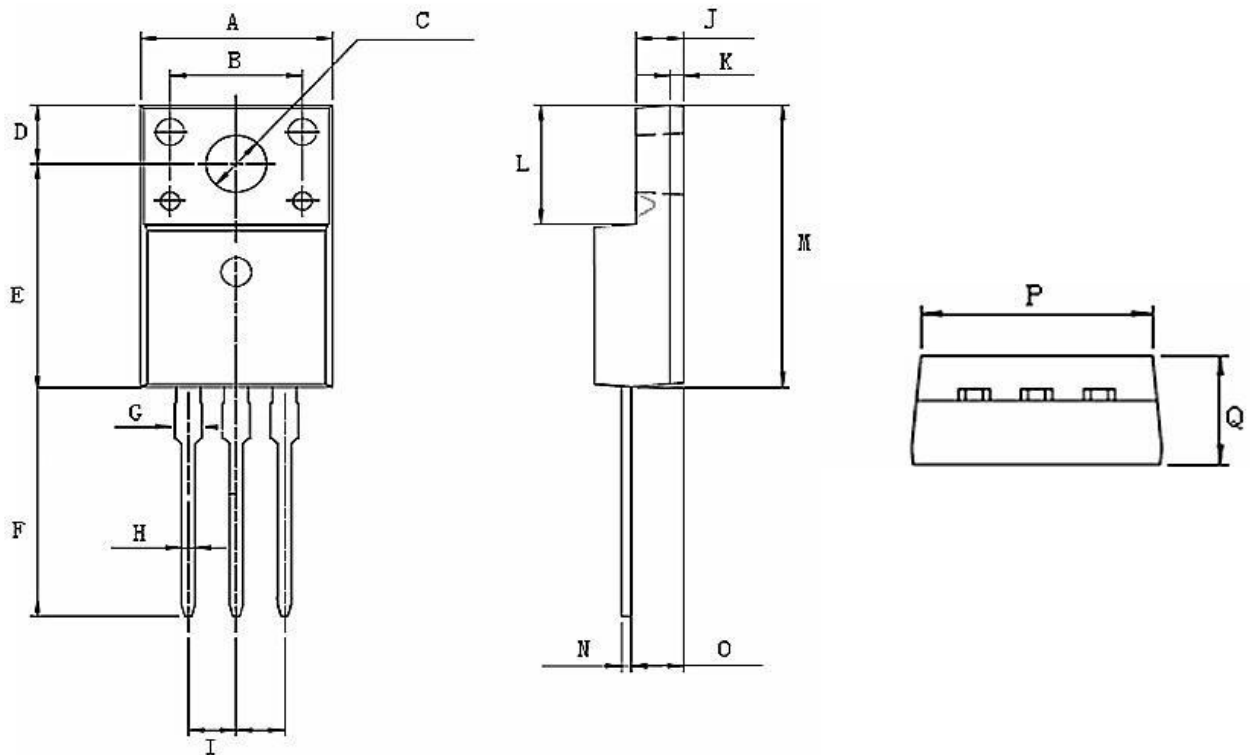
TO-252 Package Outline Dimensions



SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A	2.2	2.4	L1	2.90 REF	
A1	0	0.125	L2	1.4	1.7
b	0.66	0.86	L3	1.60 REF	
c	0.46	0.58	L4	0.6	1
D	6.5	6.7	φ	1.1	1.3
D1	5.1	5.46	θ	0°	8°
D2	4.830 REF		h	0	0.3
E	6	6.2	V	5.35 REF	
e	2.186	2.386			
L	9.8	10.4			
共面度	0	0.09			

单位: mm

TO-220F Package Outline Dimensions



SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A	9.92	10.32	K	0.55	0.75
B	6.9	7.1	L	6.57	6.77
C	3.35	3.55	M	15.8	16
D	3.25	3.35	N	0.4	0.6
E	12.35	12.75	O	2.62	2.92
F	12.8	13.2	P	9.2	9.4
G	1.22	1.42	Q	4.6	4.8
H	0.7	0.9			
I	2.54 Typ.				
J	2.45	2.65			

单位: mm