

GP78M05X

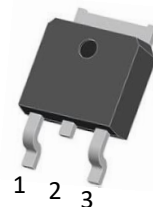
Feature

- Thermal Overload Protection
- Short Circuit Protection
- Output Voltage: 5V
- Output Current: 500mA
- Output Transition Safe-Area Compensation

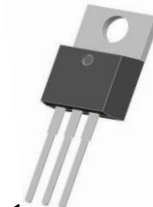
1. IN
2. GND
3. OUT



TO-251
GP78M05P



TO-252
GP78M05D



TO-220
GP78M05T

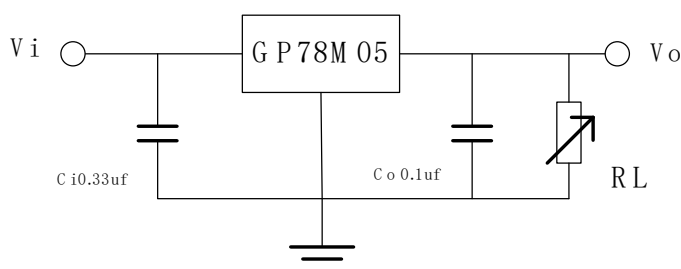
Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Input voltage	V_i	35	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)

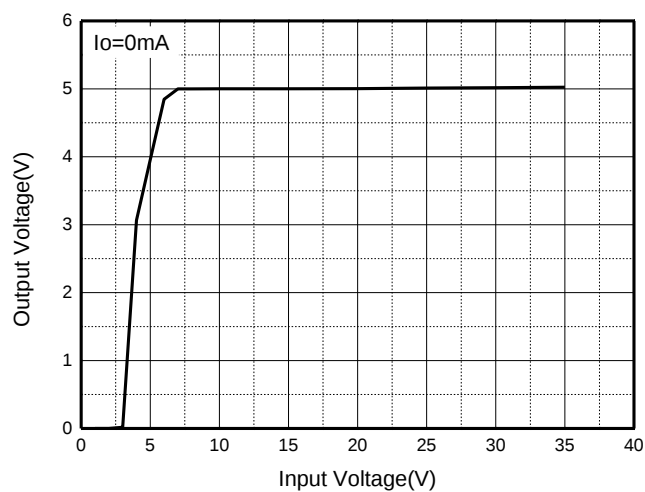
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Output voltage	V_o	$7V \leq V_{in} \leq 20V, I_o = 5 \sim 350mA$	4.78	5.00	5.22	V
Load Regulation	$ \Delta V $	$I_o = 250mA, 8V \leq V_{in} \leq 12V$			23	mV
Line regulation	$ \Delta V $	$5mA \leq I_o \leq 250mA, V_{in} = 10V$			39	mV
		$5mA \leq I_o \leq 500mA, V_{in} = 10V$			79	mV
Quiescent Current	I_B	$I_o = 5mA, V_{in} = 10V$	1.5	3.0	4.7	mA
Quiescent Current Change	$ \Delta I_B $	$5mA \leq I_o \leq 250mA, V_{in} = 10V$		0.3	0.4	mA
		$8V \leq V_{in} \leq 25V, I_o = 50mA$		0.3	0.7	mA
Dropout Voltage	$V_{o2} - V_{o1}$	$V_{o1} @ V_{in} = 8V, I_o = 5mA$ $V_{o2} @ V_{in} = 7.4V, I_o = 500mA$	-50		50	mV
Supply Current	I_{CC}	$V_i = 35V, I_o = 0mA$			9	mA

Typical Application

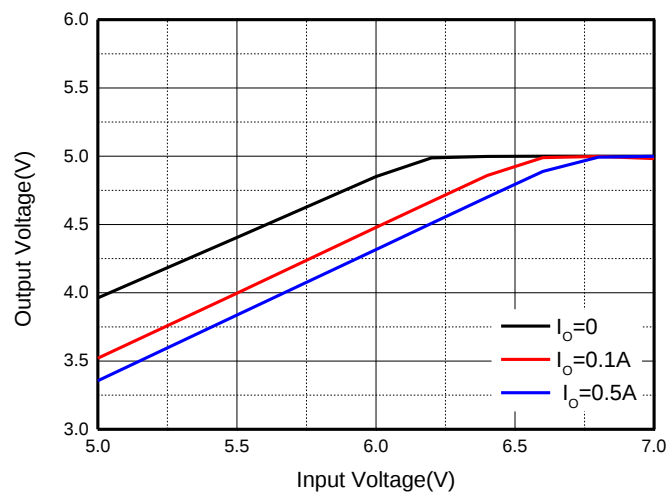


Typical Performance Characteristics

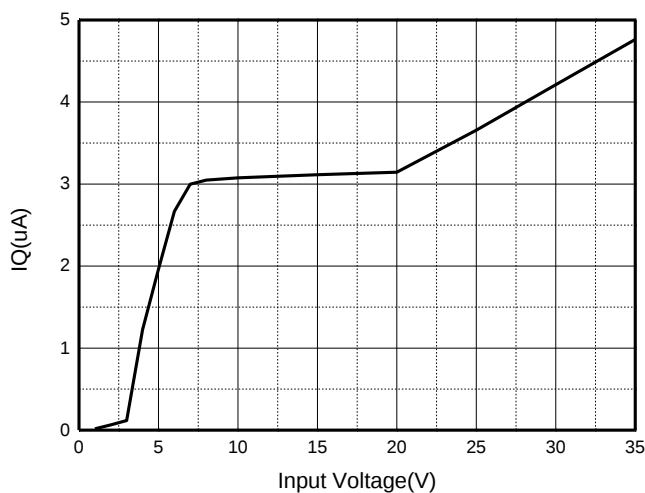
Output Characteristics



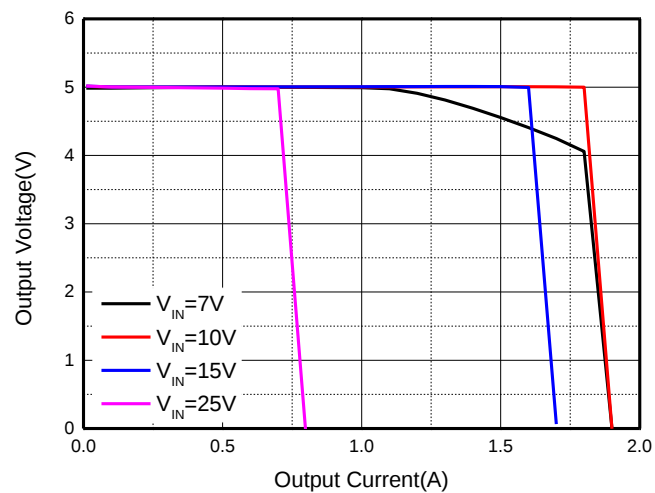
Output Characteristics



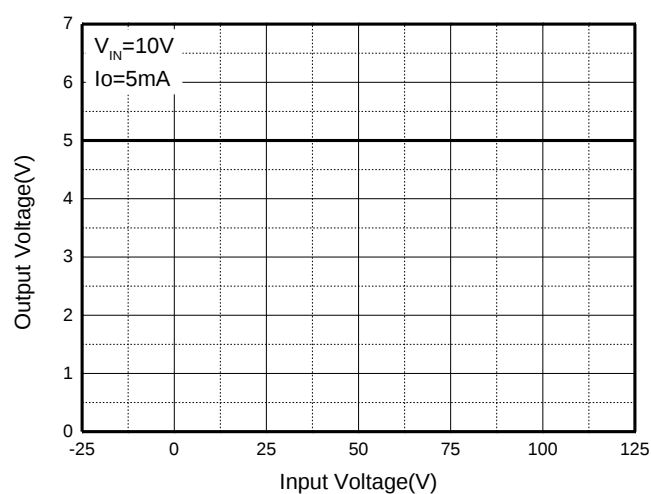
Quiescent Current



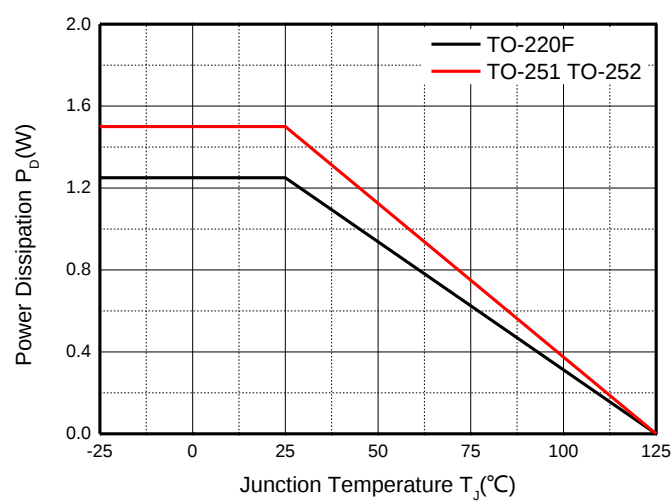
Current Cut-off Grid Voltage

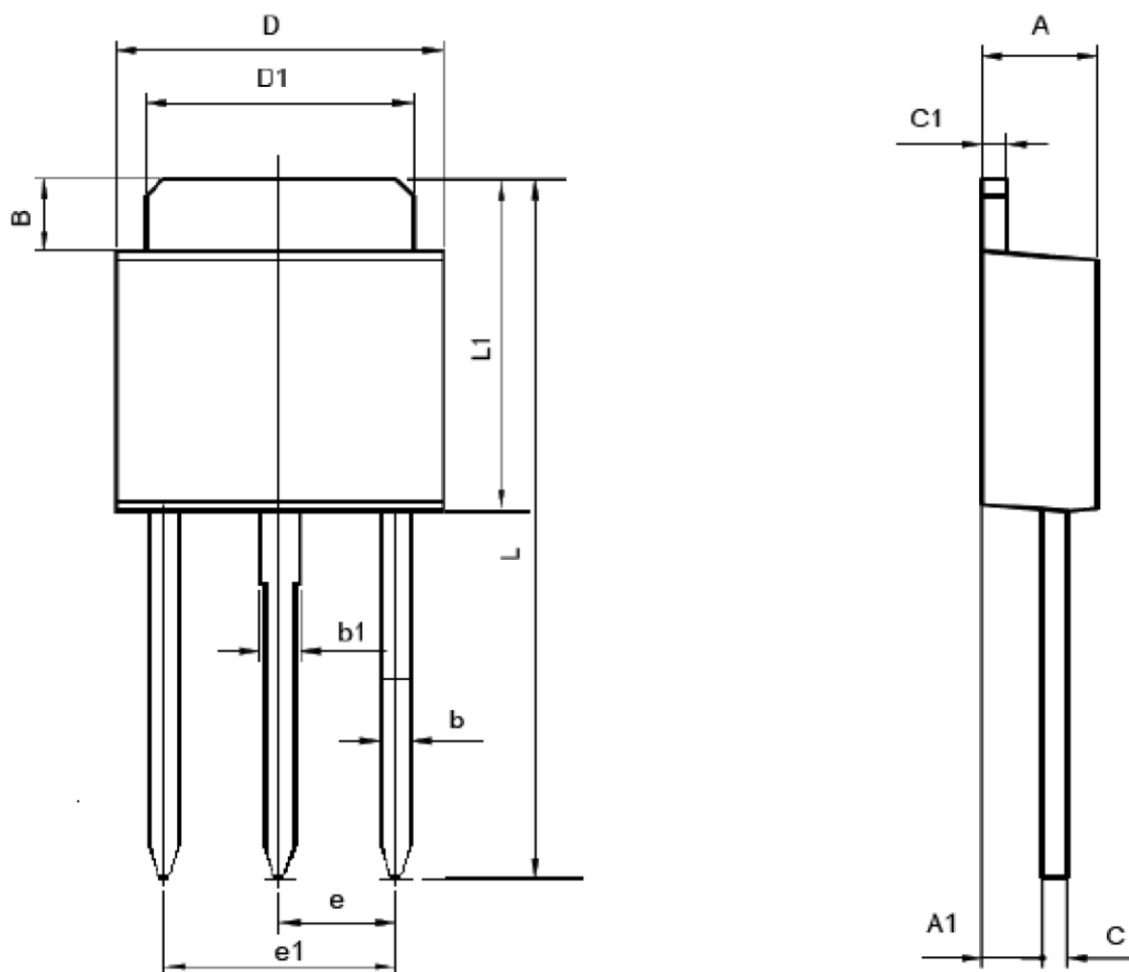


Output Voltage vs Junction Temperature

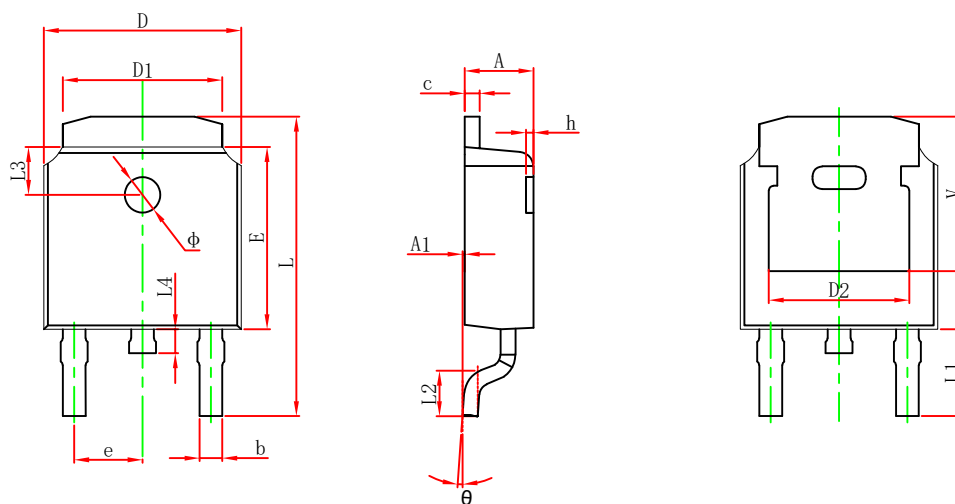


Power Derating Curve

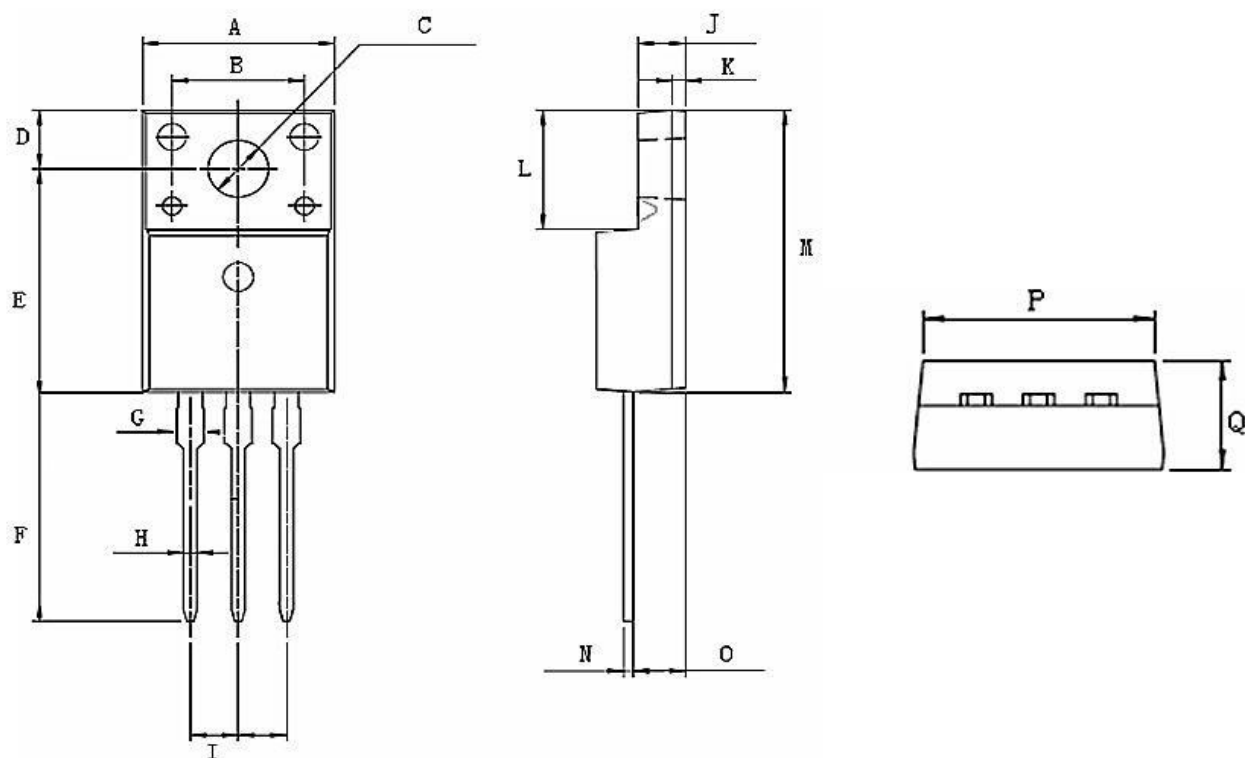


TO-251 Package Outline Dimensions


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	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	

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