

### Features

- Input voltage: up to 35V
- Output voltage: 5V
- Output current up to 500 mA, internal thermal overload protection and short-circuit current limiting.

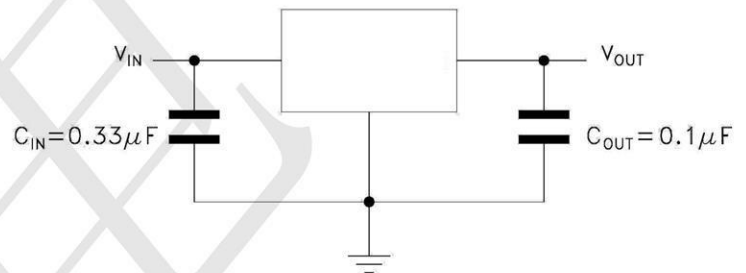
### Application

- Voltage Regulator.

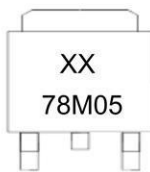
### Package and Pin Configuration



### Standard Application Circuit



### Marking:



“78M05” is part number, fixed

“xx” is internal code

### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

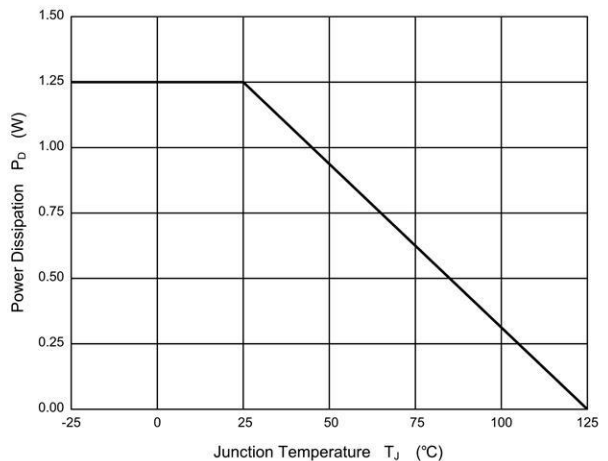
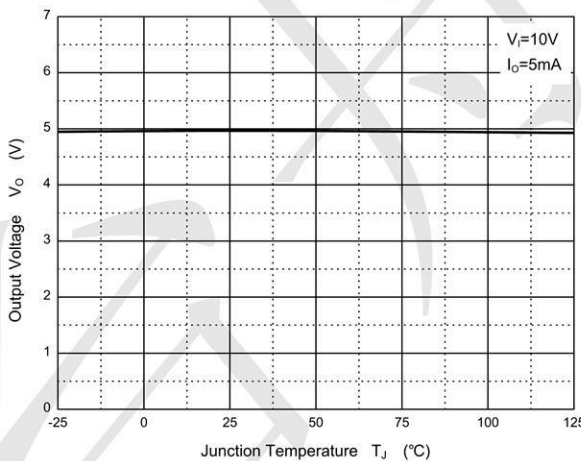
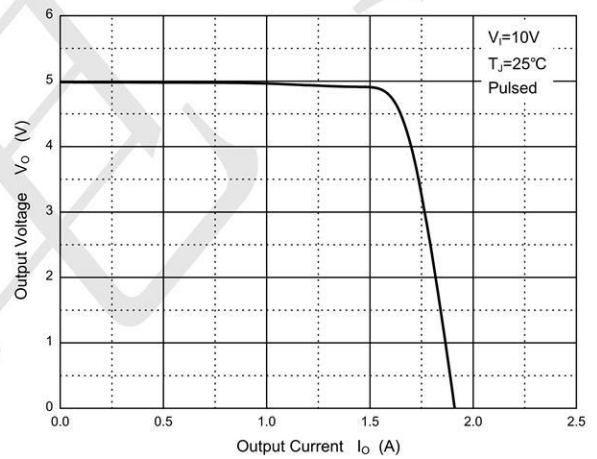
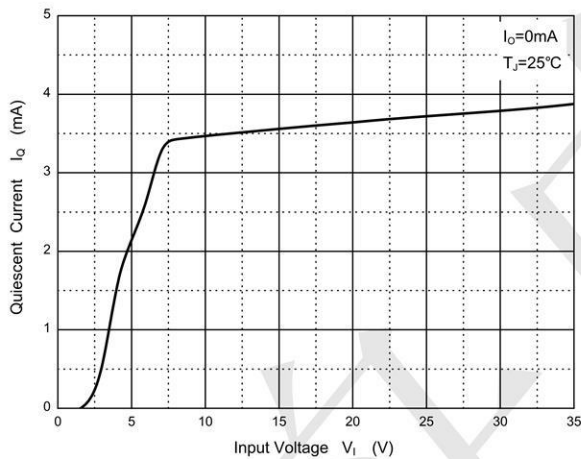
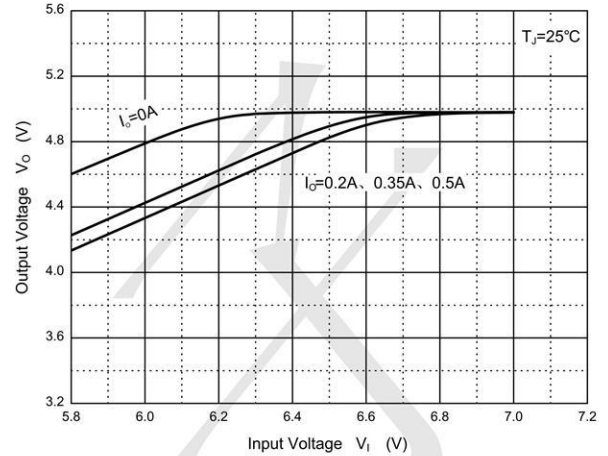
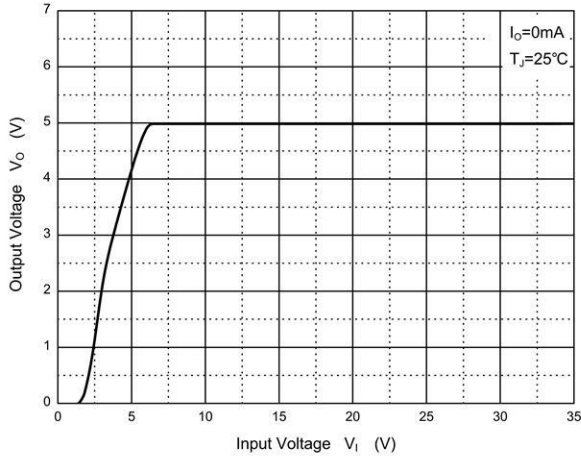
Parameter	Symbol	Value	Unit
Input Voltage	$V_I$	35	V
Thermal Resistance, Junction-to-Air	$R_{\theta JA}$	100	°C/W
Operating Temperature Range	$T_{OPR}$	-40 to +125	°C
Storage Temperature Range	$T_{STG}$	-65 to +150	°C

**Electrical Characteristics**

Ratings at  $V_i=10V, I_o=350mA, C_i=0.33\mu F, C_o=0.1\mu F$ , With heat sink, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_o$		4.8	5.0	5.2	V
		$V_i=7V$ to $20V, 5mA \leq I_o \leq 350mA$	4.75	5.0	5.25	
Line Regulation	$\Delta V_o$	$V_i=7V$ to $25V, I_o=200mA$	--	--	100	mV
Load Regulation	$\Delta V_o$	$V_i=10V, 5mA \leq I_o \leq 200mA$	--	--	50	mV
		$V_i=10V, 5mA \leq I_o \leq 500mA$	--	--	100	mV
Dropout Voltage	$V_D$	$I_o=350mA$	--	2	--	V
Quiescent Current	$I_q$		--	--	6	mA
Quiescent Current Change	$\Delta I_q$	$V_i=10V, 5mA \leq I_o \leq 350mA$	--	--	0.5	mA
		$8V \leq V_i \leq 25V, I_o=200mA$	--	--	0.8	mA
Output Voltage Drift	$\Delta V_o/\Delta T$	$I_o=5mA, 0 \leq T_J \leq 125^\circ C$	--	0.5	--	mV/ $^\circ C$
Supply Voltage Rejection	SVR	$8V \leq V_i \leq 18V, f=120Hz, I_o=300mA$	62	--	--	dB
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100Hz$	--	40	--	$\mu V$
Short Circuit Current	$I_{sc}$	$V_i=35V$	--	200	--	mA

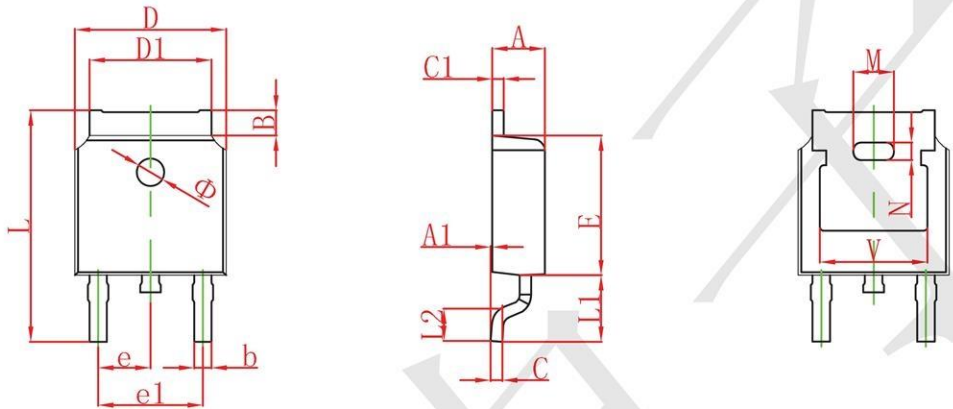
## Typical Characteristics



Junction Temperature

Junction Temperature

**TO252 Package Information**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286 TYP.		0.090 TYP.	
e1	4.327	4.727	0.170	0.186
M	1.778REF.		0.070REF.	
N	0.762REF.		0.018REF.	
L	9.800	10.400	0.386	0.409
L1	2.9REF.		0.114REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
Φ	1.100	1.300	0.043	0.051

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