

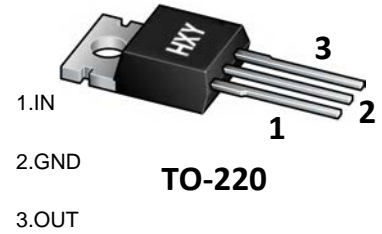


### Features

- Maximum output current  $I_{OM}$ : 1A
- Output voltage  $V_O$ : 5V
- Continuous total dissipation  $P_D$ : 1.5 W ( $T_a = 25^\circ\text{C}$ )

### Package Marking and Ordering Information

Product ID	Pack	Marking	Units Tube
7805	TO-220	7805	50



### Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Thermal Resistance from Junction to Air	$R_{\theta JA}$	66.7	$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_{OPR}$	-25~+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65~+150	$^\circ\text{C}$

### Electrical Characteristics At Specified Virtual Junction Temperature

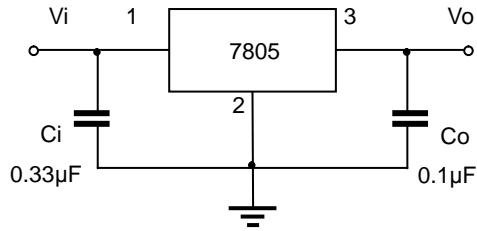
( $V_i=10\text{V}$ ,  $I_o=500\text{mA}$ ,  $C_i=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ , unless otherwise specified )

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	$V_o$	$25^\circ\text{C}$	4.8	5.0	5.2	V
		$7\text{V} \leq V_i \leq 20\text{V}$ , $I_o=5\text{mA}-1\text{A}$	-25-125 $^\circ\text{C}$	4.75	5.00	5.25
Load Regulation	$\Delta V_o$	$I_o=5\text{mA}-1\text{A}$	$25^\circ\text{C}$	9	100	mV
		$I_o=250\text{mA}-750\text{mA}$	$25^\circ\text{C}$	4	50	mV
Line regulation	$\Delta V_o$	$7\text{V} \leq V_i \leq 25\text{V}$	$25^\circ\text{C}$	4	100	mV
		$8\text{V} \leq V_i \leq 12\text{V}$	$25^\circ\text{C}$	1.6	50	mV
Quiescent Current	$I_q$	$25^\circ\text{C}$		5	8	mA
Quiescent Current Change	$\Delta I_q$	$7\text{V} \leq V_i \leq 25\text{V}$	-25-125 $^\circ\text{C}$	0.3	1.3	mA
		$5\text{mA} \leq I_o \leq 1\text{A}$	-25-125 $^\circ\text{C}$	0.03	0.5	mA
Output Noise Voltage	$V_N$	$10\text{Hz} \leq f \leq 100\text{KHz}$	$25^\circ\text{C}$	42		$\mu\text{V}$
Output voltage drift	$\Delta V_o / \Delta T$	$I_o=5\text{mA}$	-25-125 $^\circ\text{C}$	-1.1		$\text{mV}/^\circ\text{C}$
Ripple Rejection	RR	$8\text{V} \leq V_i \leq 18\text{V}$ , $f=120\text{Hz}$	-25-125 $^\circ\text{C}$	62	73	dB
Dropout Voltage	$V_d$	$I_o=1\text{A}$	$25^\circ\text{C}$	2		$\mu\text{V}/V_o$
Output resistance	$R_o$	$f=1\text{KHz}$	$25^\circ\text{C}$	10		$\text{m}\Omega$
Short Circuit Current	$I_{sc}$	$25^\circ\text{C}$		230		mA
Peak Current	$I_{pk}$	$25^\circ\text{C}$		2.2		A

\* Pulse test.



### Typical Application



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

### Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

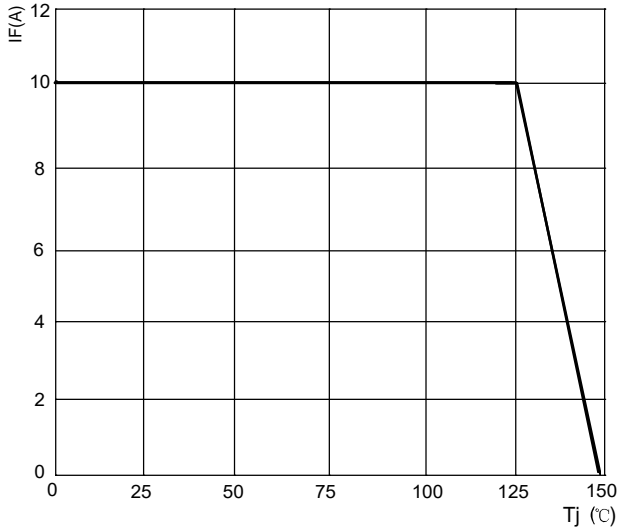


FIG.2: TYPICAL FORWARD CHARACTERISTICS

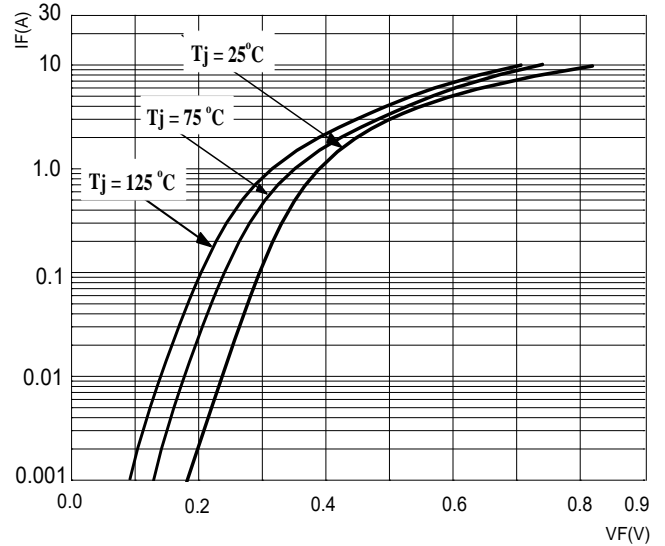


FIG.3: TOTAL CAPACITANCE DERATING CURVE

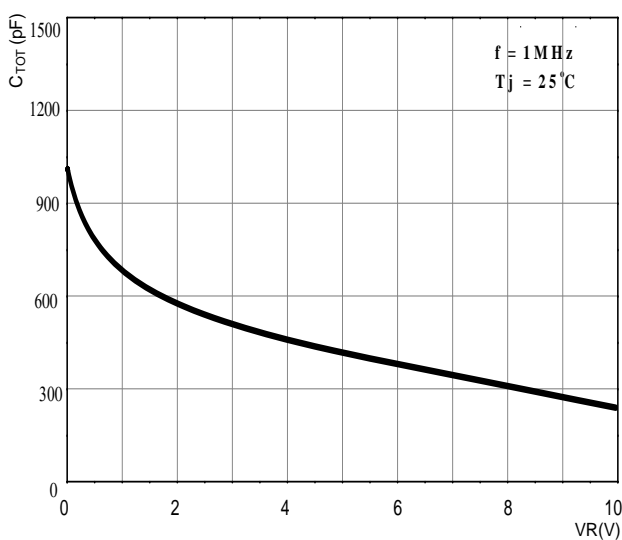
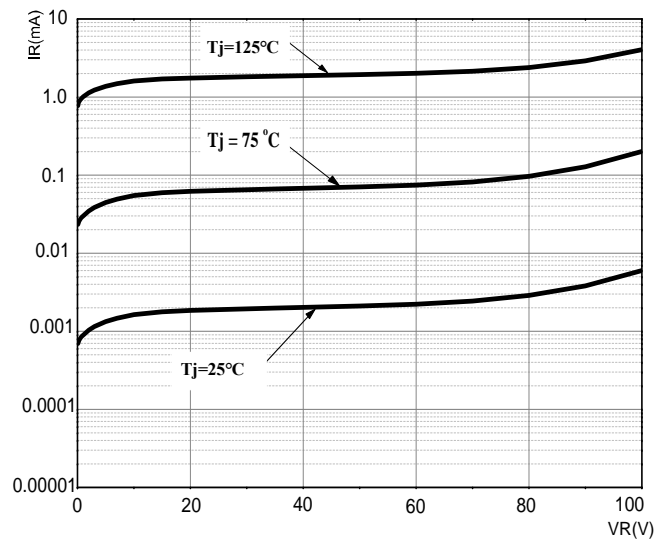


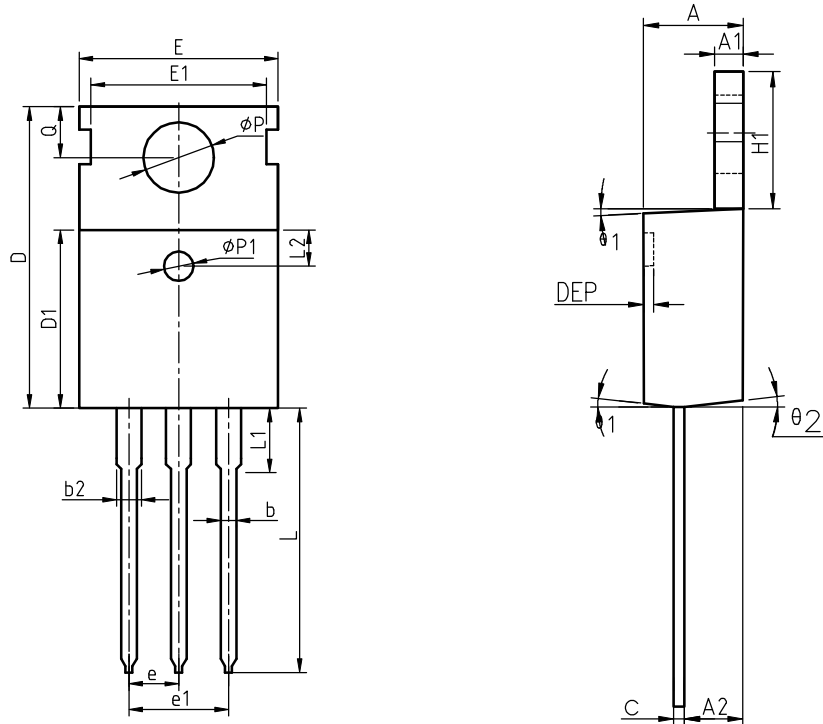
FIG.4: TYPICAL REVERSE CHARACTERISTICS





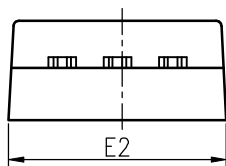
## Package Information

### TO-220



COMMON DIMENSIONS

SYMBOL	MIN	NOM	MAX	MIN	NOM	MAX
A	4.40	4.57	4.70	0.173	0.180	0.185
A1	1.27	1.30	1.33	0.050	0.051	0.052
A2	2.35	2.40	2.50	0.093	0.094	0.098
b	0.77	0.80	0.90	0.030	0.031	0.035
b2	1.17	1.27	1.36	0.046	0.050	0.054
c	0.48	0.50	0.56	0.019	0.020	0.022
D	15.40	15.60	15.80	0.606	0.614	0.622
D1	9.00	9.10	9.20	0.354	0.358	0.362
DEP	0.05	0.10	0.20	0.002	0.004	0.008
E	9.80	10.00	10.20	0.386	0.394	0.402
E1	-	8.70	-	-	0.343	-
E2	9.80	10.00	10.20	0.386	0.394	0.402
e		2.54	BSC		0.100	BSC
e1		5.08	BSC		0.200	BSC
H1	6.40	6.50	6.60	0.252	0.256	0.260
L	12.75	13.50	13.65	0.502	0.531	0.537
L1	-	3.10	3.30	-	0.122	0.130
L2		2.50	REF		0.098	REF
P	3.50	3.60	3.63	0.138	0.142	0.143
P1	3.50	3.60	3.63	0.138	0.142	0.143
Q	2.73	2.80	2.87	0.107	0.110	0.113
$\theta 1$	5°	7°	9°	5°	7°	9°
$\theta 2$	1°	3°	5°	1°	3°	5°
$\theta 3$	1°	3°	5°	1°	3°	5°





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