

## isc Three Terminal Positive Voltage Regulator

MC7805

### FEATURES

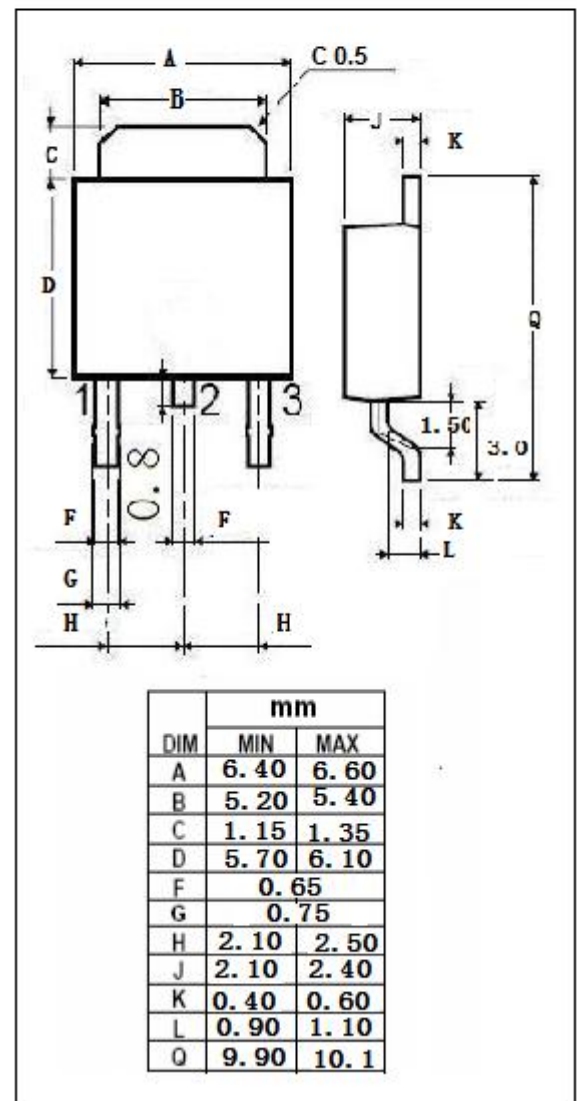
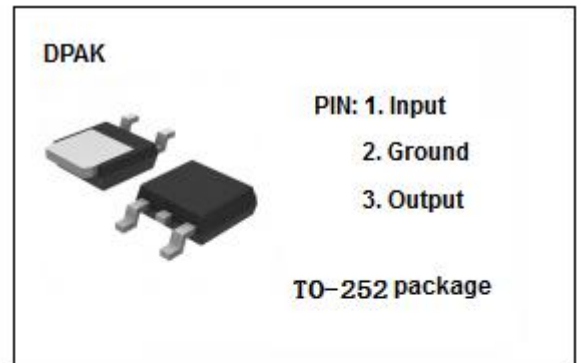
- Output current in excess of 1.0A
- Output voltage of 5V
- Internal thermal overload protection
- Output transition Safe-Area compensation
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### ABSOLUTE MAXIMUM RATINGS( $T_a=25^{\circ}\text{C}$ )

SYMBOL	PARAMETER	RATING	UNIT
$V_i$	DC input voltage	35	V
$I_o$	Output current	internally limited	
$P_{tot}$	Power dissipation	internally limited	
$T_{OP}$	Operating junction temperature	-40~125	$^{\circ}\text{C}$
$T_{stg}$	Storage temperature	-55~150	$^{\circ}\text{C}$

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	5	$^{\circ}\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	65	$^{\circ}\text{C}/\text{W}$



**isc Three Terminal Positive Voltage Regulator****MC7805****• ELECTRICAL CHARACTERISTICS** $T_j=25^{\circ}\text{C}$  ( $V_i=10\text{V}$ ,  $I_o=0.5\text{A}$ ,  $C_i=0.33\ \mu\text{F}$ ,  $C_o=0.1\ \mu\text{F}$  unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_o$	Output Voltage	$V_{in}=10\text{V}$ ; $I_o=500\text{mA}$	4.8	5.2	V
$V_o$	Output Voltage	$7\text{V}\leq V_{in}\leq 20\text{V}$ ; $P_o\leq 15\text{W}$ $5.0\text{mA}\leq I_o\leq 1.0\text{A}$	4.75	5.25	V
$\Delta V_v$	Line Regulation	$7\text{V}\leq V_{in}\leq 25\text{V}$ $8\text{V}\leq V_{in}\leq 12\text{V}$		100 50	mV
$\Delta V_i$	Load Regulation	$5.0\text{mA}\leq I_o\leq 1.5\text{A}$ $250\text{mA}\leq I_o\leq 750\text{mA}$		100 50	mV
$I_b$	Quiescent Current			8.0	mA
$\Delta_{b1}$	Quiescent Current Change	$5.0\text{mA}\leq I_o\leq 1.0\text{A}$ ; $V_{in}=10\text{V}$		0.5	mA
$\Delta_{b2}$	Quiescent Current Change	$7\text{V}\leq V_{in}\leq 25\text{V}$ ; $I_o=500\text{mA}$		1.3	mA

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