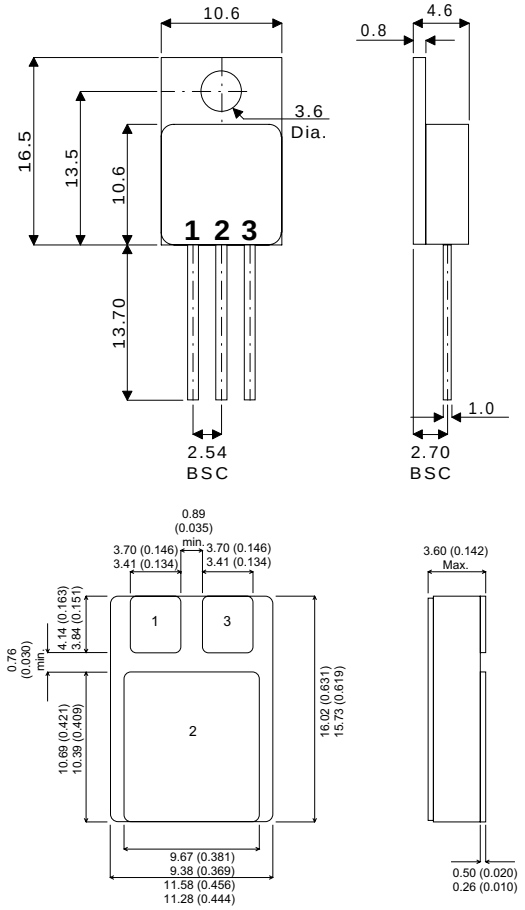
LM7800 - 220M SERIES
LM7800 - SMD SERIES

MECHANICAL DATA
Dimensions in mm



PIN 1 - Input PIN 2 -Ground PIN 3 - Output

TO220M -TO220 Metal Package - Isolated
SMD1 -Ceramic Surface Mount Package

POSITIVE VOLTAGE REGULATOR TO 220 M

FEATURES

- **HERMETIC TO220 METAL OR CERAMIC SURFACE MOUNT PACKAGES**
- **SCREENING OPTIONS AVAILABLE**
- **ALL LEADS ISOLATED FROM CASE (METAL PACKAGE)**
- **OUTPUT CURRENT UP TO 1.5A**
- **OUTPUT VOLTAGES OF 5, 12, 15, 24V**
- **THERMAL OVERLOAD PROTECTION**
- **SHORT CIRCUIT PROTECTION**
- **OUTPUT TRANSISTOR SOA PROTECTION**

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_I	DC Input Voltage	(for V_O = 5 to 15V)	35V
		(for V_O = 24V)	40V
I_O	Output Current		Internally limited
P_D	Power Dissipation		Internally limited
T_j	Junction Temperature		0 to 125°C
T_{stg}	Storage Temperature		–65 to 150°C

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Prelim. 7/00

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ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless stated)

OUTPUT VOLTAGE			5			12			15			24			
INPUT VOLTAGE (unless otherwise specified)			10			19			23			33			
Parameter		Test Conditions	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Unit
V_O	Output Voltage	T_j = 25°C	4.8	5	5.2	11.5	12	12.5	14.4	15	15.6	23	24	25	V
		I_O = 5mA to 1A $P_O \leq$ 15W	4.75 (V_I = 7 to 20V)	5	5.25	11.4 (V_I = 14.5 to 27V)	12	12.6	14.25 (V_I = 17.5 to 30V)	15	15.75	22.8 (V_I = 27 to 38V)	24	25.2	
ΔV_O	Line Regulation	T_j = 25°C		3 (V_I = 7 to 25V)	100			240 (V_I = 14.5 to 30V)			300 (V_I = 17.5 to 30V)			480 (V_I = 27 to 38V)	mV
				1 (V_I = 8 to 12V)	50			120 (V_I = 16 to 22V)			150 (V_I = 20 to 26V)			240 (V_I = 30 to 36V)	
ΔV_O	Load Regulation	T_j = 25°C I_O = 5mA to 1.5A			100			240			300			480	mV
		T_j = 25°C I_O = 250 to 750 mA			50			120			150			240	
I_d	Quiescent Current	T_j = 25°C			8			8			8			8	mA
ΔI_d	Quiescent Current Change	I_O = 5mA to 1A			0.5			0.5			0.5			0.5	mA
					1.3 (V_I = 7 to 25V)			1 (V_I = 14.5 to 30V)			1 (V_I = 17.5 to 30V)			1 (V_I = 27 to 38V)	mA
$\frac{\Delta V_O}{\Delta T}$	Output Voltage Drift	I_O = 5mA		–1.1			–1			–1			–1.5		mV / °C
e_N	Output Noise Voltage	B = 10Hz to 100kHz T_j = 25°C		40			75			90			170		µV
SVR	Supply Voltage Rejection	f = 120Hz Io = 500mA	62 (V_I = 8 to 18V)			55 (V_I = 15 to 25V)			54			50			dB
V_d	Dropout Voltage	T_j = 25°C I_O = 1A ΔV_O = 100mV		2			2			2			2		V
I_{sc}	Short Circuit Current	T_j = 25°C V_I = 35V		750			350			230			150		mA
I_{scp}	Short Circuit Peak Current	T_j = 25°C V_1-V_0<10V 5mS		2.2			2.2			2.1			2.1		A

THERMAL DATA (for TO220M and SMD1)

$R_{THj\text{-}case}$	Thermal Resistance Junction – Case	Max. 3°C / W
$R_{THj\text{-}amb}$	Thermal Resistance Junction – Ambient	Max. 50°C / W

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