

## 3.0 PRODUCT SELECTION PROCEDURES: FIXED VOLTAGE THREE-TERMINAL REGULATORS

### 3.1 DETERMINE:

- $V_{OUT}$ , required output voltage
- $I_{OUT}$ , maximum output current
- $V_{IN}$ , mean unregulated input voltage
- $T_A$ , ambient temperature

### 3.2 SPECIFY:

- $T_J$ , maximum operating junction temperature. For highest reliability,  $T_J$  should be  $25^\circ\text{C}$  or more below  $T_{J(MAX)}$  as specified on the data sheet.

### 3.3 SELECT A REGULATOR

- Make preliminary selection based on step 1a and 1b above, from Figure 1.2, or the data sheet summary of Section 2.
- Verify this selection with Figure 3.1 or 3.2 to insure that the selected regulator will provide a peak current greater than  $I_{OUT}$  under the  $V_{IN} - V_{OUT}$  operating conditions (peak current is limited by internal circuitry).
- Note also in Figure 3.1 or 3.2, the power dissipation curves, but choose packages from Figure 2.1 with  $P_D$  greater than dissipated power.
- Determine heat sink requirements from Section 5.

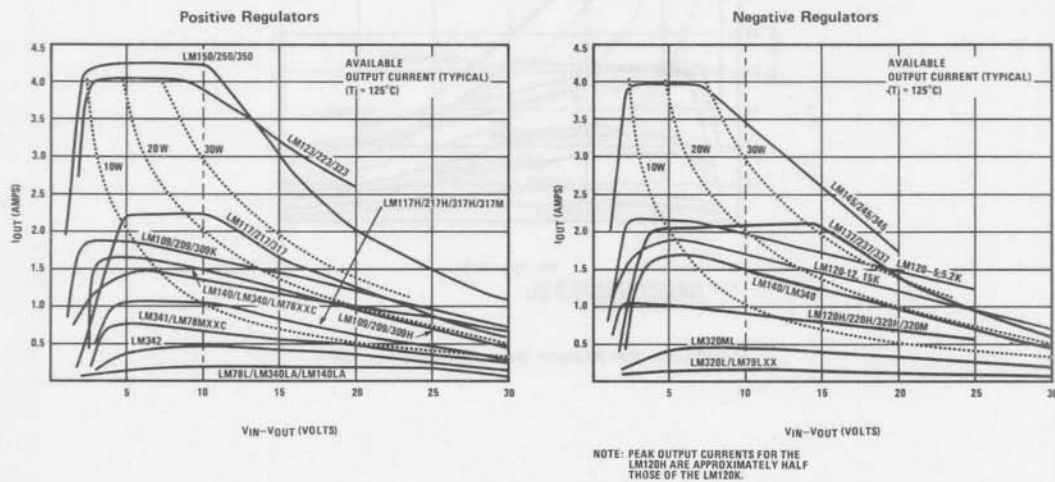
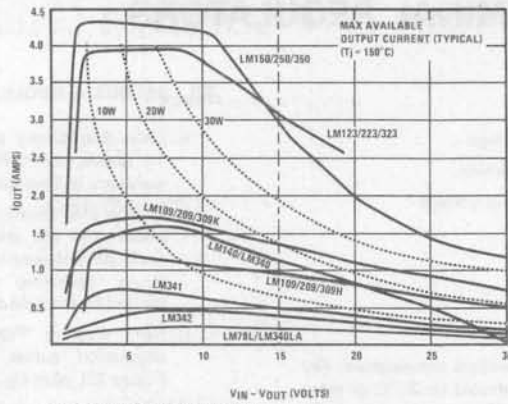


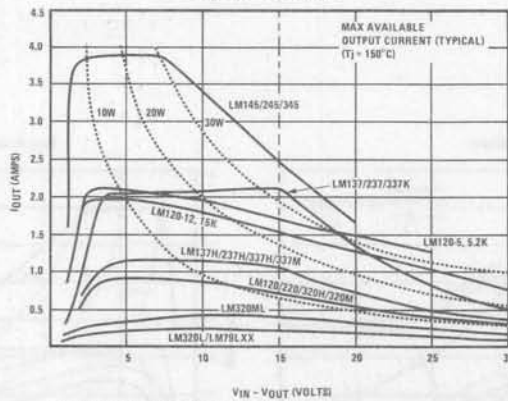
FIGURE 3.1. Max Available Output Current at  $T_J = 125^\circ\text{C}$

### Positive Regulators



NOTE: PEAK OUTPUT CURRENTS FOR THE LM120H ARE APPROXIMATELY HALF THOSE OF THE LM120K.

### Negative Regulators



NOTE: PEAK OUTPUT CURRENTS FOR THE LM120H ARE APPROXIMATELY HALF THOSE OF THE LM120K.

FIGURE 3.2. Max Available Output Current at  $T_j = 150^\circ\text{C}$