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| SANYO | No.918F | L78MG |
| Variable 4-Pin Voltage Regulator | | |

Applications

- General-purpose voltage regulator

Features

- Wide operating voltage range: 7.5 to 35V
- 500mA output
- On-chip thermal protector
- On-chip overcurrent limiter
- On-chip ASO protector
- 4-pin SEP package facilitating mounting and thermal design as in case of transistor
- Minimum number of external parts required
- Easy to vary voltage

Maximum Ratings at Ta=25°C

| | | | | unit |
|-----------------------------|---------------------|-------|-------------|------|
| Maximum Supply Voltage | V _{CC} max | Pin 1 | 35 | V |
| Allowable Power Dissipation | Pd max | | 1.2 | W |
| Operating Temperature | T _{opr} | | -20 to +80 | °C |
| Storage Temperature | T _{stg} | | -40 to +150 | °C |

Recommended Operating Conditions at Ta=25°C

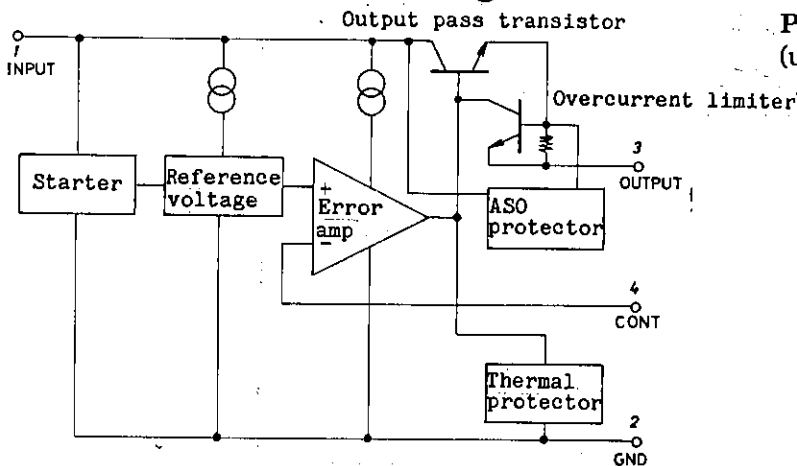
| | | | | unit |
|----------------|------------------|---|----|------|
| Input Voltage | V _{IN} | V _{OUT} +3 to V _{OUT} +15 | V | |
| Output Current | I _{OUT} | 500 or less | mA | |

Operating Characteristics at Ta=25°C, V_{IN}=10V, I_{OUT}=350mA, C_{IN}=0.33µF, C_{OUT}=0.1µF

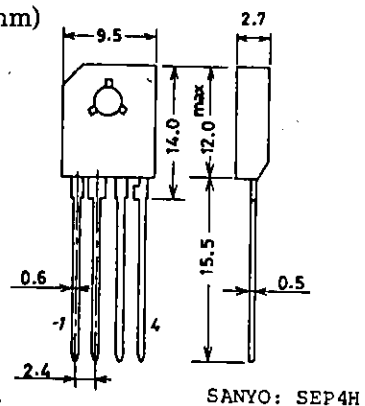
| | | | min | typ | max | unit |
|--|---------------------|--|------|------|-----|------|
| Input Voltage | V _{IN} | T _j =25°C | 7.5 | | 35 | V |
| Output Voltage | V _{OUT} | V _{IN} =V _{OUT} +5 | 5.0 | | 30 | V |
| Line Regulation (Referenced to output voltage) | ΔV _{oline} | T _j =25°C, I _{OUT} =200mA, V _{OUT} ≤10V (V _{OUT} +2.5V) ≤ V _{IN} ≤ (V _{OUT} +20V) | 0.2 | 1.0 | | % |
| | | T _j =25°C, I _{OUT} =200mA, V _{OUT} ≥10V (V _{OUT} +3V) ≤ V _{IN} ≤ (V _{OUT} +15V) | 0.15 | 0.75 | | % |
| | | (V _{OUT} +3V) ≤ V _{IN} ≤ (V _{OUT} +7V) | 0.1 | 0.67 | | % |

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Equivalent Circuit Block Diagram



**Package Dimensions 3027A
(unit: mm)**

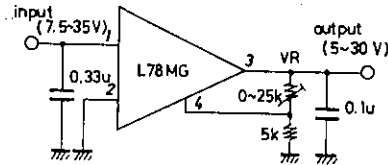


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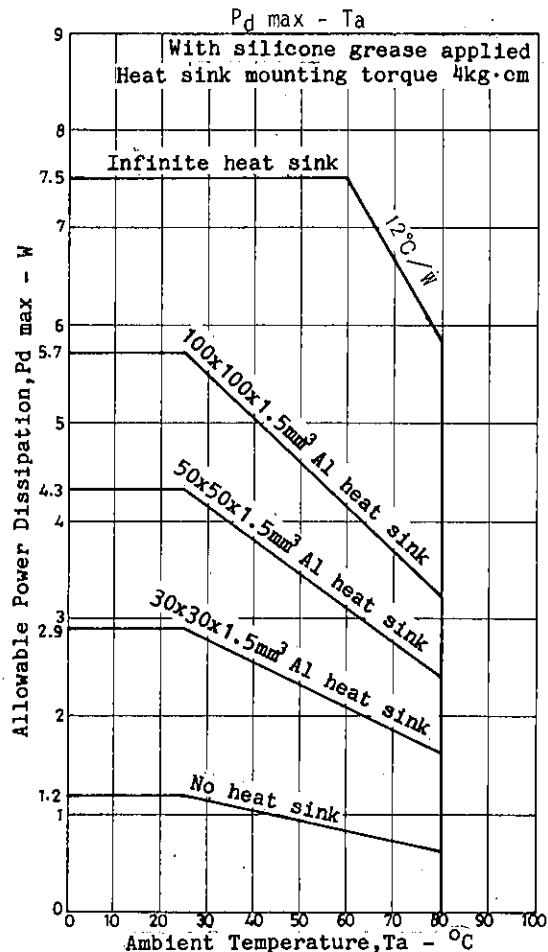
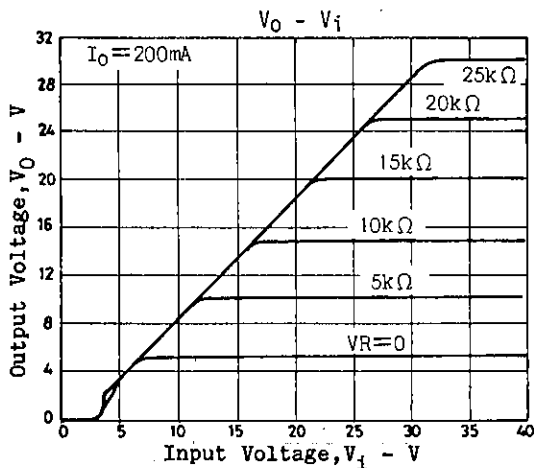
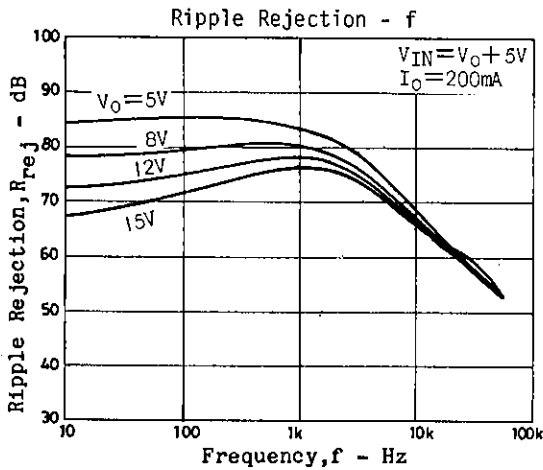
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| | | | min | typ | max | unit |
|--|--------------|--|-----|-----|-----|---------|
| Load Regulation (Referenced to output voltage) | $4V_{Oload}$ | $T_j=25^{\circ}C, 5mA \leq I_{OUT} \leq 500mA,$ $V_{IN}=V_{OUT}+7V$ | | 0.2 | 1.0 | % |
| Control Pin Current | | $T_j=25^{\circ}C$ | | 1.0 | 5.0 | μA |
| Current Dissipation | I_{CC} | $T_j=25^{\circ}C$ | | 2.8 | 5.0 | mA |
| Ripple Rejection | R_{rej} | $8V \leq V_{IN} \leq 18V, V_{OUT}=5V, f=120Hz$ $I_{OUT}=300mA, T_j=25^{\circ}C$ | 62 | 80 | | dB |
| | | $8V \leq V_{IN} \leq 18V, V_{OUT}=5V, f=120Hz$ $I_{OUT}=100mA$ | 62 | | | dB |
| Output Noise Voltage | V_{NO} | $10Hz \leq f \leq 100kHz, V_{OUT}=5V$ | | 8 | 40 | μV |
| Minimum Input-Output Voltage Drop | V_{drop} | | | 2 | 2.5 | V |
| Short Circuit Current | I_{OS} | $V_{IN}=35V, T_j=25^{\circ}C$ | | 100 | 600 | mA |
| Peak Output Current | I_{op} | $T_j=25^{\circ}C$ | 0.4 | 0.8 | 1.4 | A |
| Reference Voltage | | $T_j=25^{\circ}C$ | 4.8 | 5.0 | 5.2 | V |

Sample Application Circuit



Unit (resistance: Ω , capacitance: F)



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