

KA78RM33

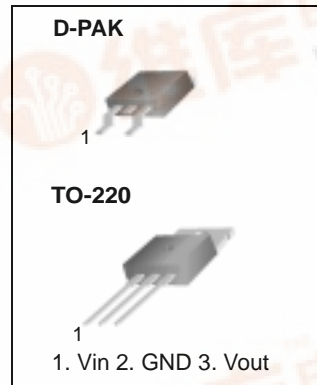
Low Dropout Voltage Regulator

Features

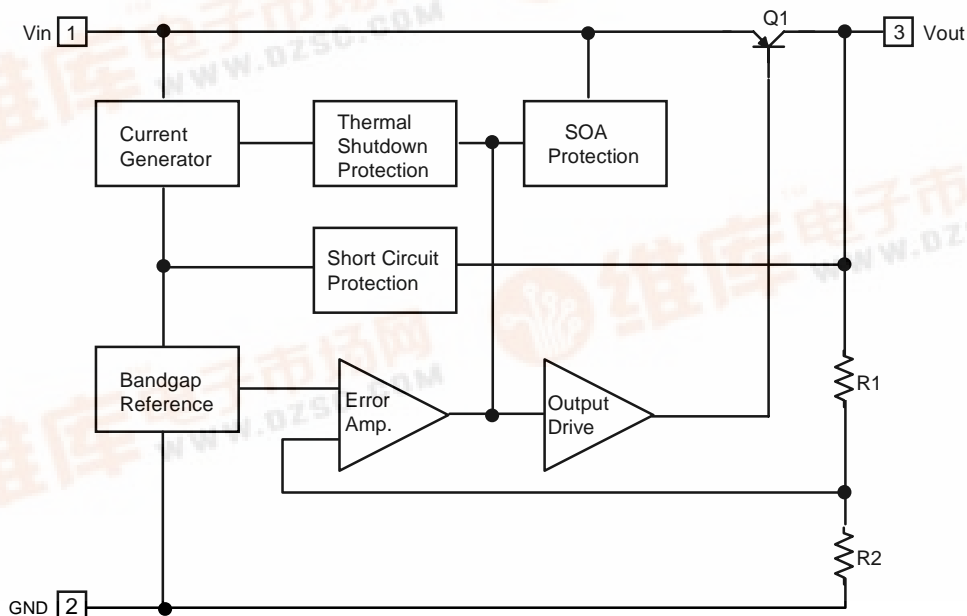
- 0.5A / 3.3V Output low dropout voltage regulator
- Low dropout voltage (Max. 0.6V)
- Over current protection, Thermal shutdown
- SOA protection, Shortcircuit protection

Description

The KA78RM33 is a low-dropout voltage regulator suitable for various electronic equipment. It provide constant voltage power source with surface mount type package (D-PAK), dropout voltage of KA78RM33 is below 0.6V in full rated current(0.5A). This regulator has various function such as over current protection, thermal shut down and SOA (Safe operating Area) protection.



Internal Block Diagram



Absolute Maximum Ratings

| Parameter | Symbol | Value | Unit | Remark |
|---------------------------------|-----------------|--------------------|---------------|-------------|
| Input Voltage | V_{in} | 20 | V | - |
| Output Current | I_O | 0.5 | A | - |
| Thermal Resistance Junction-Air | $R_{\theta JA}$ | 110 | $^{\circ}C/W$ | No Heatsink |
| Power Dissipation | P_d | Internally limited | - | - |
| Junction Temperature | T_j | 150 | $^{\circ}C$ | - |
| Operating Temperature | T_{OPR} | -25~ + 125 | $^{\circ}C$ | - |

Electrical Characteristics

($V_{in} = 5V$, $I_O = 0.25A$, $T_a = 25^{\circ}C$, unless otherwise specified)

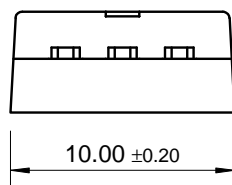
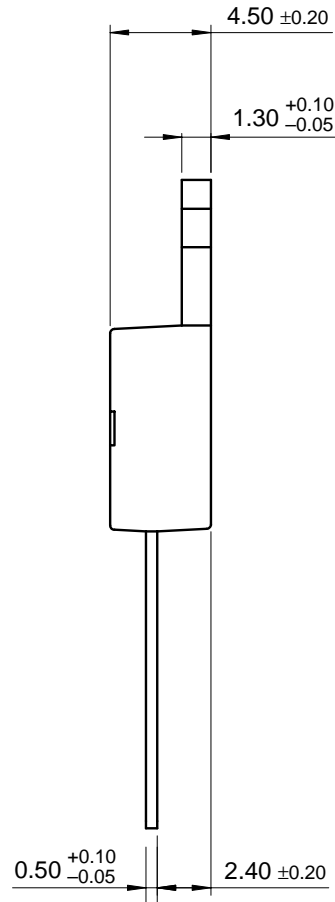
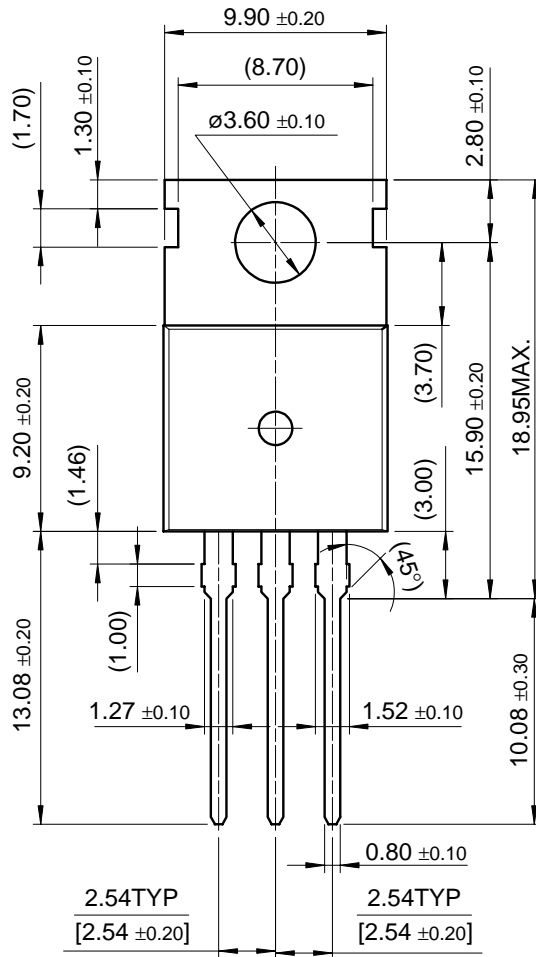
| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---------------------------|--|------|------|------|----------------|
| Output Voltage | V_{Out} | $I_O = 10mA$ | 3.22 | 3.3 | 3.38 | V |
| Load Regulation | R_{LOad} | $5mA < I_O < 0.5A$ | - | 2 | 20 | mV |
| Line Regulation | R_{line} | $4.3V < V_{in} < 16V$ | - | 2 | 20 | mV |
| Ripple Rejection Ratio | RR | $f=120Hz, V_{in}=5V \pm 0.5V_{rms}$ | 55 | - | - | dB |
| Dropout Voltage | V_{drop} | $I_O=0.5A$ | - | - | 0.6 | V |
| Quiescent Current | I_q | $I_O = 0A$ | - | 5 | 10 | mA |
| Peak Current | I_{PK} | $V_{in} = 5V$ | 0.5 | 1 | - | A |
| Output Noise Voltage | V_n | $10Hz < f < 100KHz$ | - | 50 | - | μV_{rms} |
| Temperature Coefficient of Output Voltage | $\Delta V_{OUT}/\Delta T$ | $-25^{\circ}C < T_j < 125^{\circ}C$ $I_O = 100mA$ | - | -0.2 | - | $mV/^{\circ}C$ |

Mechanical Dimensions

Package

Dimensions in millimeters

TO-220

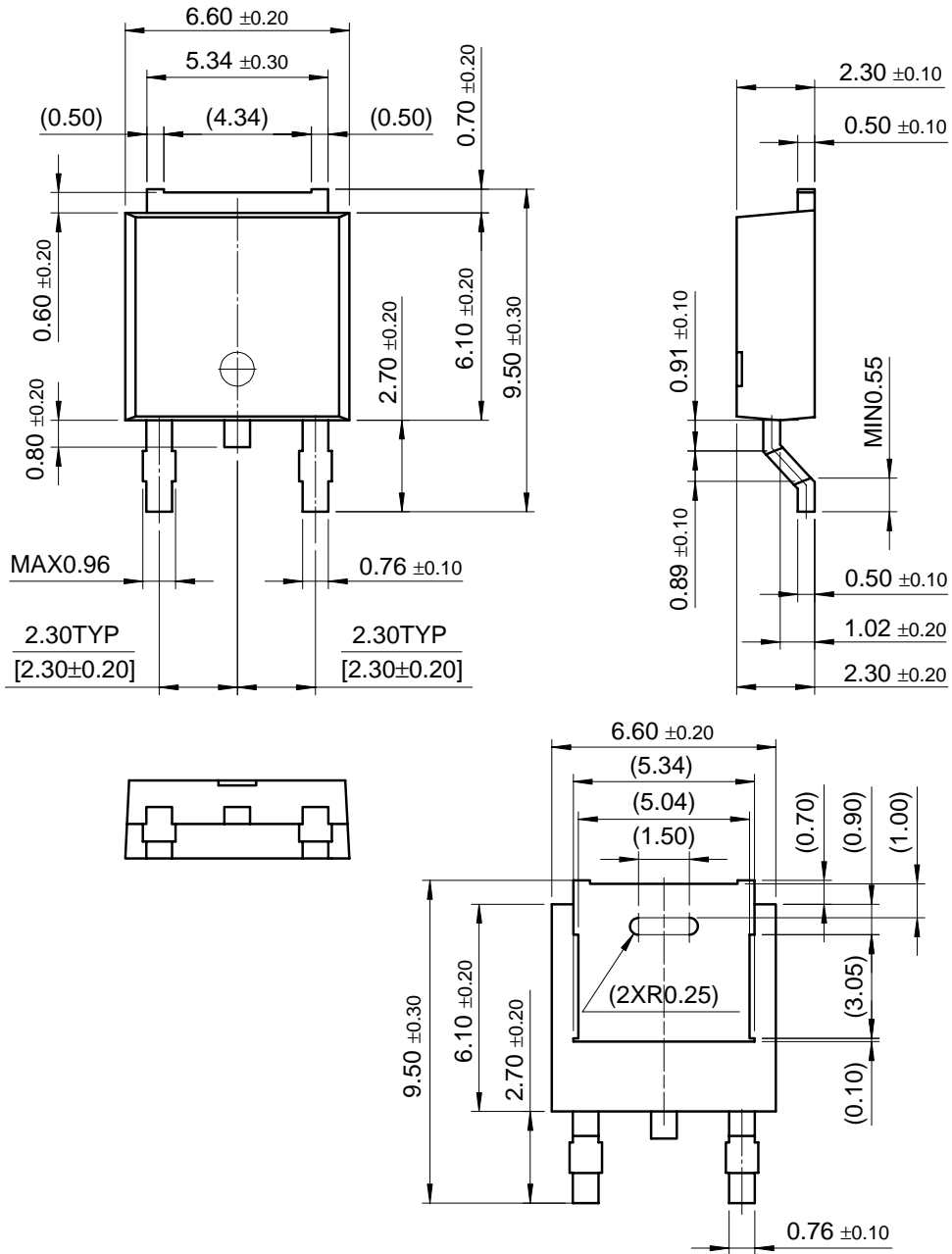


Mechanical Dimensions (Continued)

Package

Dimensions in millimeters

D-PAK



Ordering Information

| Product Number | Package | Operating Temperature |
|----------------|---------|-----------------------|
| KA78RM33D | D-PAK | -25 ~ + 125°C |
| KA78RM33 | TO-220 | |

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