



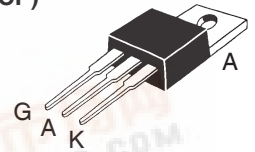
Switchable Current Regulators

IXCP 10M45S
IXCY 10M45S

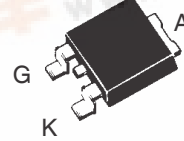
$V_{AK} = 450 \text{ V}$
 $I_{A(P)} = 2 - 100 \text{ mA}$
 $R_{DYN} = 9 - 900 \text{ k}\Omega$

| Symbol | Test Condition | | Maximum Ratings | |
|-----------|--|--------|------------------|------------------------|
| V_{AKR} | $T_J = 25^\circ\text{C to } 150^\circ\text{C}$ | 10M35S | 450 | V |
| V_{AGR} | $T_J = 25^\circ\text{C to } 150^\circ\text{C}$ | 10M35S | 450 | V |
| V_{GK} | | | ± 20 | V |
| I_D | $T_C = 25^\circ\text{C}$ | | -0.3 | A |
| P_D | $T_C = 25^\circ\text{C}$ | | 40 | W |
| T_J | | | -55 ... +150 | $^\circ\text{C}$ |
| T_{stg} | | | -55 ... +150 | $^\circ\text{C}$ |
| T_L | Temperature for Soldering (max. 10 s) | | 260 | $^\circ\text{C}$ |
| M_D | Mounting torque with screw M3 (TO-220) with screw M3.5 (TO-220) | | 0.45/4 0.55/5 | Nm/lb.in. Nm/lb.in. |

TO-220 AB (IXCP)



TO-252 AA (IXCY)



Pin connections

- 1 = G, Control terminal;
- 2 and 4 = A (+) Positive terminal
- 3 = K (-), Negative terminal

Features

- Minimum of 350/450 V breakdown
- Resistor programmable current source
- 40 W continuous dissipation
- International standard packages JEDEC TO-220 and TO-252
- On/Off switchable current source

Applications

- Start-up circuits for SMPS
- Highly stable voltage sources
- Surge limiters and voltage protection
- Instantaneously reacting resettable fuses
- Soft start-up circuits

| Symbol | Test Condition | | Characteristic Values ($T_J = 25^\circ\text{C}$ unless otherwise specified) | | |
|-----------------------------------|---|--------|---|------|------------------|
| | | | min. | typ. | max. |
| V_{AKR} | $R_K = 300 \Omega$, (Fig. 4) | 10M35S | 450 | | V |
| $I_{A(P)}$ | $V_D = 10 \text{ V}$; $R_K = 300 \Omega$; (Fig. 5) | | 7 | 10 | 15 mA |
| $V_{G(off)}$ | $I_D = 100 \mu\text{A}$; $V_D = 400 \text{ V}$ Fig. 4 | 10M45S | -5 | | V |
| I_{AV} | $V_D = 400 \text{ V}$; $V_{GK} = -10 \text{ V}$ Fig. 4 | 10M45S | | | 25 μA |
| $\Delta V_{AK} / \Delta I_{A(p)}$ | Dynamic resistance; $V_D = 10 \text{ V}$ $R_K = 300 \Omega$; (Fig. 4) | | 160 | | $\text{k}\Omega$ |
| R_{thJC} | Thermal Resistance junction-to-case | | | | 3.1 K/W |
| R_{thJA} | Thermal Resistance junction-to-ambient | TO-220 | | | 80 K/W |
| | | TO-252 | | | 100 K/W |

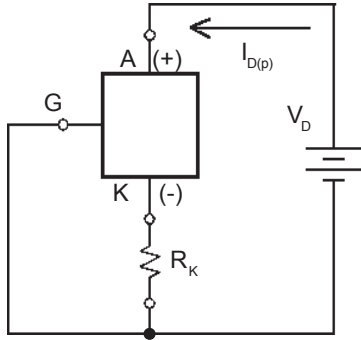


Fig. 1 Resistor R_k in series with negative pin to achieve different current levels

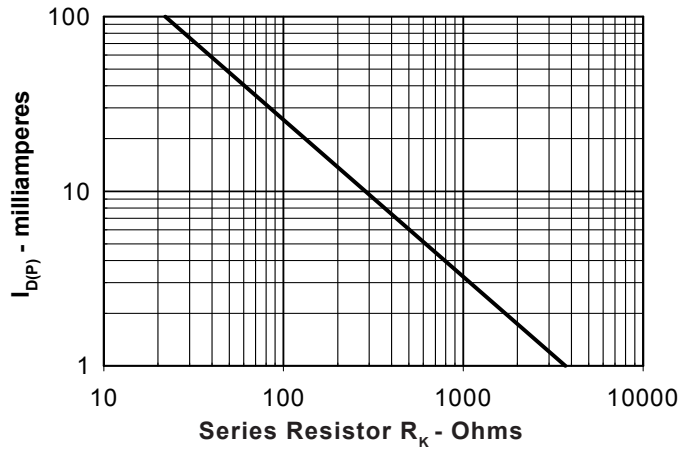


Fig. 2. Plateau current versus external resistance

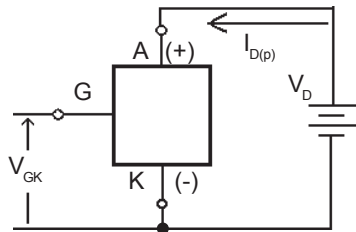


Fig. 3. Current regulator controlled by V_G

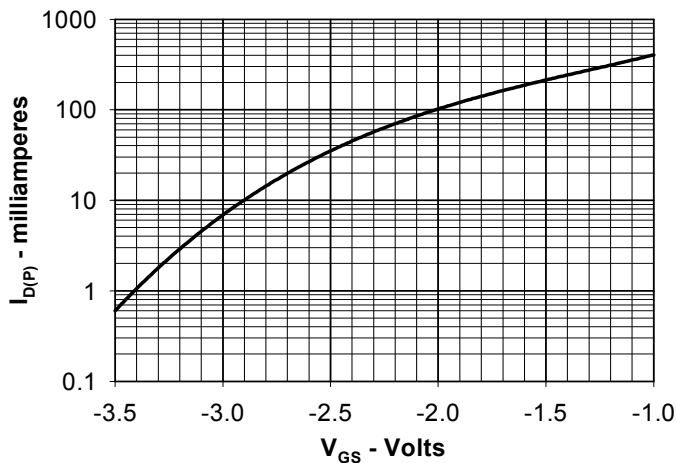
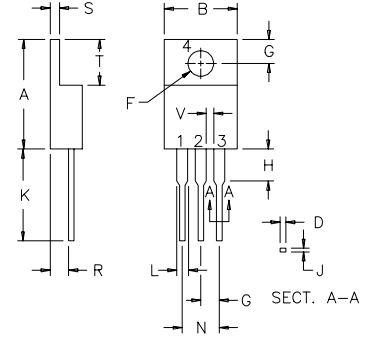


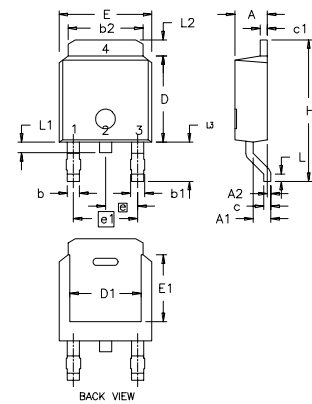
Fig. 4. Plateau current versus applied input voltage

TO-220 AB Outline



| Dim. | Millimeter | | Inches | |
|------|------------|-------|--------|------|
| | Min. | Max. | Min. | Max. |
| A | 14.23 | 16.51 | .560 | .650 |
| B | 9.66 | 10.66 | .380 | .420 |
| C | 3.56 | 4.82 | .140 | .190 |
| D | 0.64 | 0.89 | .025 | .035 |
| F | 3.54 | 4.06 | .139 | .161 |
| G | 2.29 | 2.79 | .090 | .110 |
| H | - | 6.35 | - | .250 |
| J | 0.51 | 0.76 | .020 | .030 |
| K | 12.70 | 14.73 | .500 | .580 |
| L | 1.15 | 1.77 | .045 | .070 |
| N | 4.83 | 5.33 | .190 | .210 |
| Q | 2.54 | 3.42 | .100 | .135 |
| R | 2.04 | 2.49 | .080 | .115 |
| S | 0.64 | 1.39 | .025 | .055 |
| T | 5.85 | 6.85 | 2.30 | 2.70 |
| V | 1.15 | - | .045 | - |

TO-252 AA Outline



| Dim. | Millimeter | | Inches | |
|------|------------|-------|-----------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.19 | 2.38 | 0.086 | 0.094 |
| A1 | 0.89 | 1.14 | 0.035 | 0.045 |
| A2 | 0 | 0.13 | 0 | 0.005 |
| b | 0.64 | 0.89 | 0.025 | 0.035 |
| b1 | 0.76 | 1.14 | 0.030 | 0.045 |
| b2 | 5.21 | 5.46 | 0.205 | 0.215 |
| c | 0.46 | 0.58 | 0.018 | 0.023 |
| c1 | 0.46 | 0.58 | 0.018 | 0.023 |
| D | 5.97 | 6.22 | 0.235 | 0.245 |
| D1 | 4.32 | 5.21 | 0.170 | 0.205 |
| E | 6.35 | 6.73 | 0.250 | 0.265 |
| E1 | 4.32 | 5.21 | 0.170 | 0.205 |
| e | 2.28 BSC | | 0.090 BSC | |
| e1 | 4.57 BSC | | 0.180 BSC | |
| H | 9.40 | 10.42 | 0.370 | 0.410 |
| L | 0.51 | 1.02 | 0.020 | 0.040 |
| L1 | 0.64 | 1.02 | 0.025 | 0.040 |
| L2 | 0.89 | 1.27 | 0.035 | 0.050 |
| L3 | 2.54 | 2.92 | 0.100 | 0.115 |