

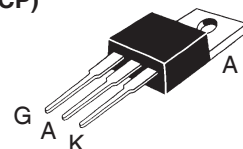
Switchable Current Regulators

IXCP 10M45S
IXCY 10M45S

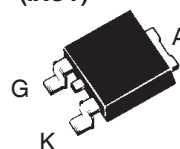
$V_{AK} = 450 \text{ V}$
 $I_{A(P)} = 2 - 100 \text{ mA}$
 $R_{DYN} = 9 - 900 \text{ k}\Omega$

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.

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		k Ω
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

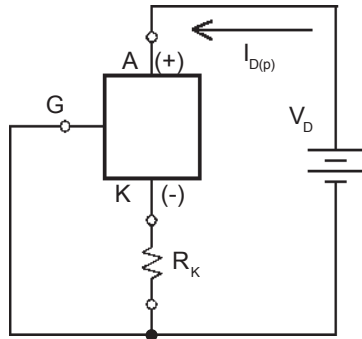


Fig. 1 Resistor R_K in series with negative pin to achieve different current levels

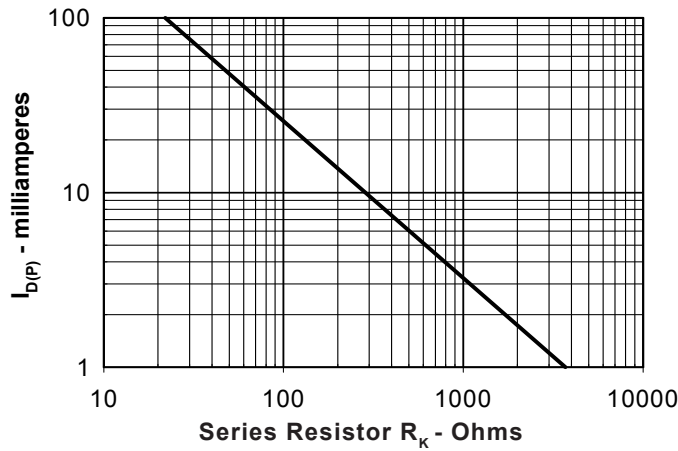


Fig. 2. Plateau current versus external resistance

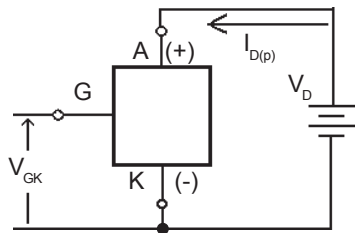


Fig. 3. Current regulator controlled by V_G

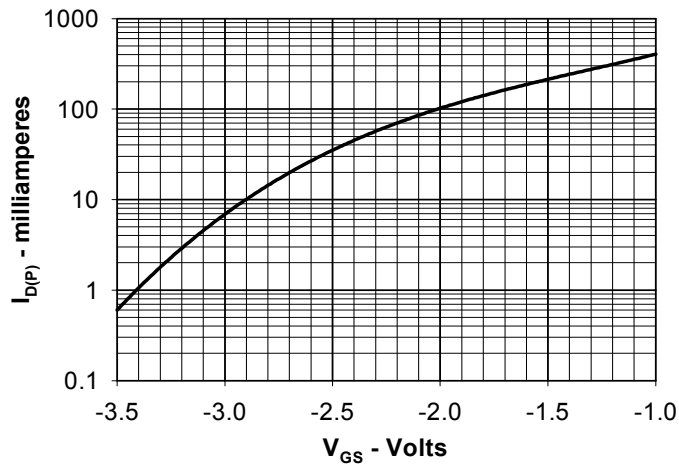
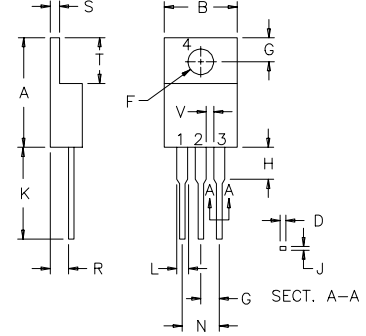


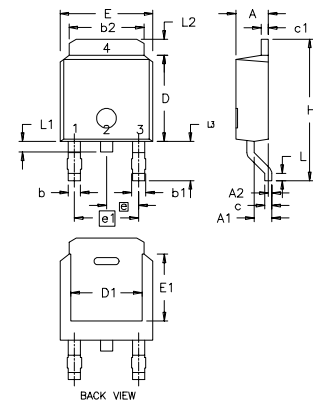
Fig. 4. Plateau current versus applied input voltage

TO-220 AB Outline



Dim.	Millimeter	Min.	Max.	Inches	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	Min.	Max.	Inches	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		

IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:

4,835,592	4,931,844	5,049,961	5,237,481	6,162,665	6,404,065 B1	6,683,344	6,727,585
4,850,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343	6,710,405 B2	
4,881,106	5,034,796	5,187,117	5,486,715	6,306,728 B1	6,583,505	6,710,463	