IXYS

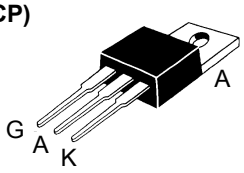
Switchable Current Regulators

IXCP 10M35S
IXCY 10M35S
IXCP 10M45S
IXCY 10M45S

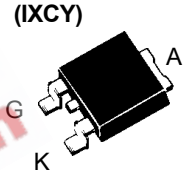
V_{AK} = 350/450 V
$I_{A(P)}$ = 2 - 100 mA
R_{DYN} = 9 - 900 kΩ

Symbol	Test Condition		Maximum Ratings	
V_{AKR}	T_J = 25°C to 150°C	10M35S	350	V
		10M45S	450	V
V_{AGR}	T_J = 25°C to 150°C	10M35S	350	V
V_{AGR}		10M45S	450	V
V_{GK}			±20	V
I_D	T_C = 25°C		-0.3	A
P_D	T_C = 25°C		40	W
T_J			-55 ... +150	°C
T_{stg}			-55 ... +150	°C
T_L	Temperature for Soldering (max. 10 s)		260	°C
M_D	Mounting torque with screw M3 (TO-220)		0.45/4	Nm/lb.in.
	with screw M3.5 (TO-220)		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

Symbol	Test Condition		Characteristic Values (T_J = 25°C unless otherwise specified) min.	typ.	max.	
V_{AKR}	R_K = 300 Ω, (Fig. 4)	10M35S	350			V
		10M45S	450			V
$I_{A(P)}$	V_D = 10 V; R_K = 300 Ω; (Fig. 5)		7	10	15	mA
$V_{G(off)}$	I_D = 100 µA; V_D = 300 V	10M35S	-5			V
	I_D = 100 µA; V_D = 400 V	10M45S	-5			V
	Fig. 4					
I_{AV}	V_D = 300 V; V_{GK} = -10 V	10M35S			25	µA
	V_D = 400 V; V_{GK} = -10 V	10M45S			25	µA
	Fig. 4					
$\Delta V_{AK}/\Delta I_{A(p}$	Dynamic resistance; V_D = 10 V		10			kΩ
	R_K = 300 Ω; (Fig. 4)					
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

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 resetable fuses
- Soft start-up circuits

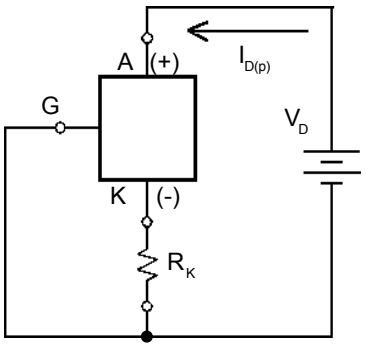


Fig. 1 Resistor R_K in series with negative pin to achieve different current levels

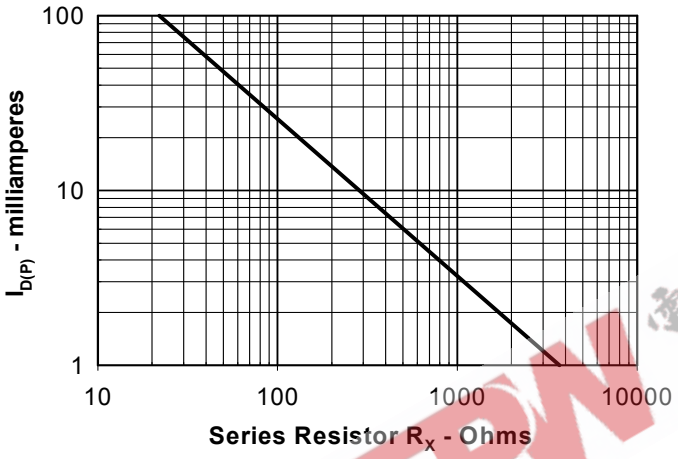


Fig. 2. Plateau current versus external resistance

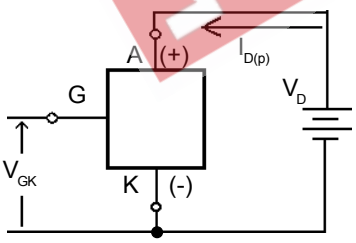


Fig. 3. Current regulator controlled by V_G

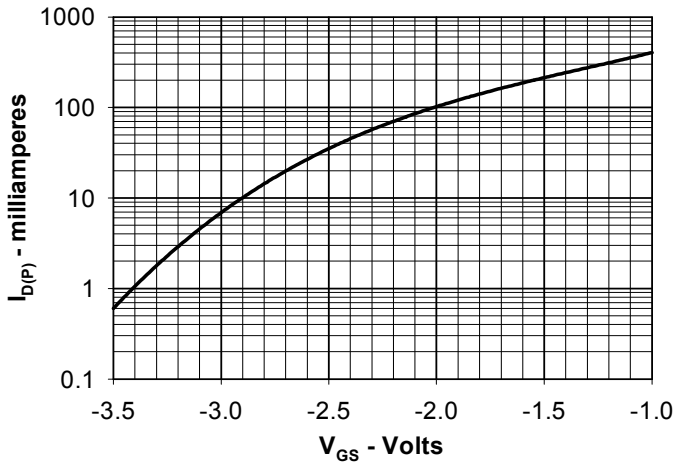
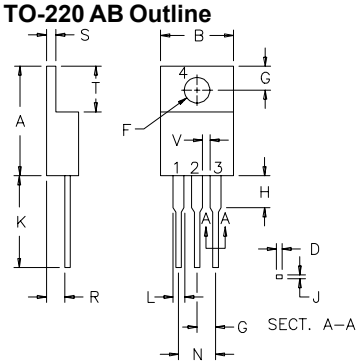


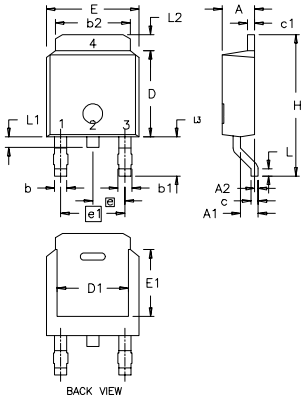
Fig. 4. Plateau current versus applied input voltage

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