IXYS

Switchable Current Regulators

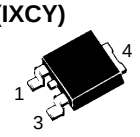
IXCP 10M35S
IXCY 10M35S
IXCP 10M45S
IXCY 10M45S

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

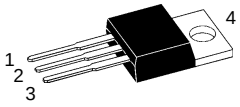
Symbol	Test Condition		Maximum Ratings	
V_{AKR}	T_J = 25°C to 150°C	10M35S	350	V
		10M45S	450	V
V_{AGR}	T_J = 25°C to 150°C	10M35S	350	V
V_{AGR}		10M45S	450	V
V_{GK}			±20	V
I_D	T_C = 25°C		-0.3	A
P_D	T_C = 25°C		40	W
T_J			-55 ... +150	°C
T_{stg}			-55 ... +150	°C
T_L	Temperature for Soldering (max. 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.

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

TO-252 AA (IXCY)



TO-220 AB (IXCP)



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 resetable fuses
- Soft start-up circuits

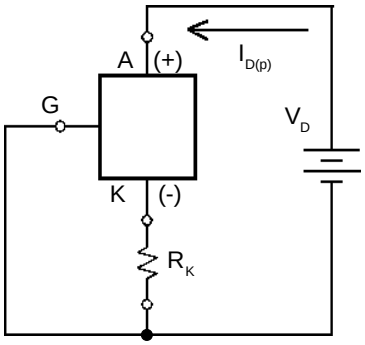


Fig. 1 Resistor R_K in series with negative pin to achieve different current levels

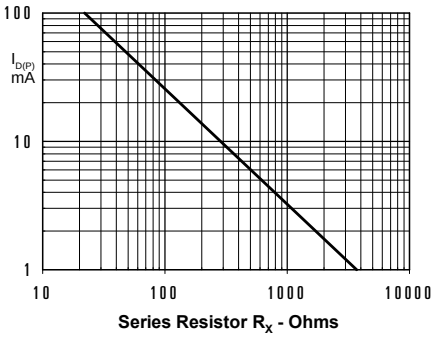


Fig. 2. Plateau current versus external resistance

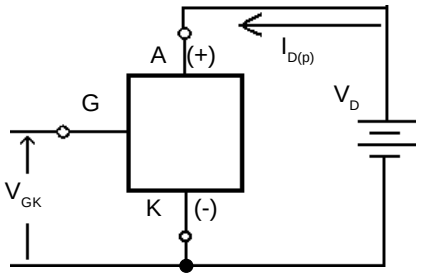


Fig. 3. Current regulator controlled by V_G

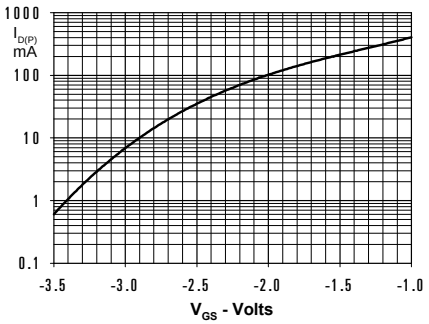
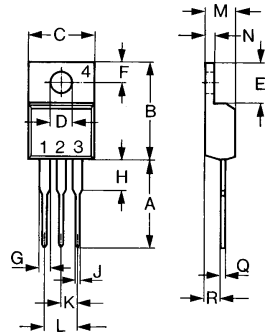


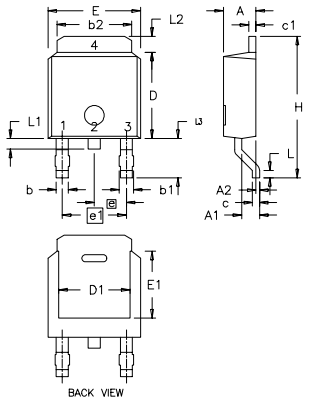
Fig. 4. Plateau current versus applied input voltage

TO-220 AB Outline



Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.35	0.56	0.014	0.022
R	2.29	2.79	0.090	0.110

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