IXYS

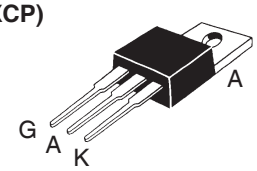
Switchable Current Regulators

IXCP 10M45S
IXCY 10M45S

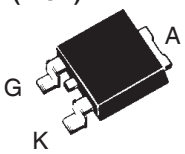
V_{AK} = 450 V
$I_{A(P)}$ = 2 - 100 mA
R_{DYN} = 9 - 900 kΩ

Symbol	Test Condition		Maximum Ratings	
V_{AKR}	T_J = 25°C to 150°C	10M35S	450	V
V_{AGR}	T_J = 25°C to 150°C	10M35S	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	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 = 400 V Fig. 4	10M45S	-5			V
I_{AV}	V_D = 400 V; V_{GK} = -10 V Fig. 4	10M45S			25	µA
$\Delta V_{AK}/\Delta I_{A(p}$	Dynamic resistance; V_D = 10 V R_K = 300 Ω; (Fig. 4)		160			kΩ
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

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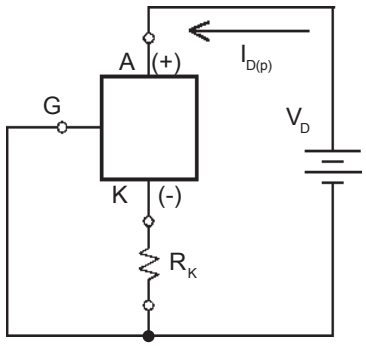


Fig. 1 Resistor R_K in series with negative pin to achieve different current levels

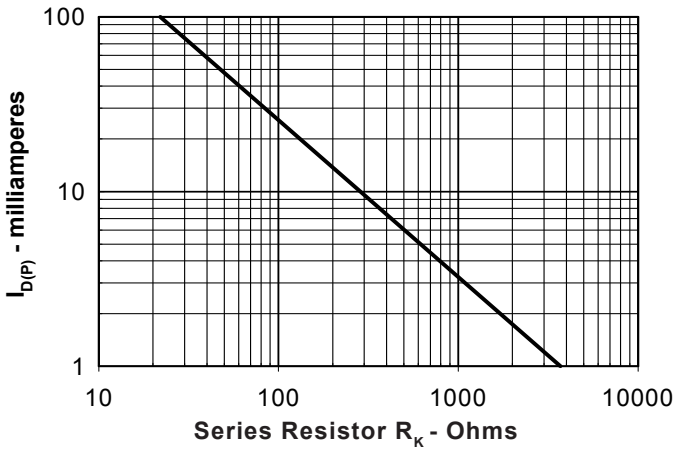


Fig. 2. Plateau current versus external resistance

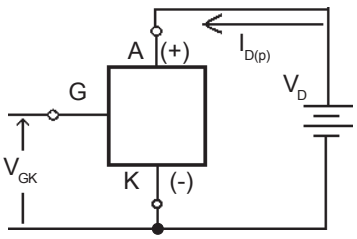


Fig. 3. Current regulator controlled by V_G

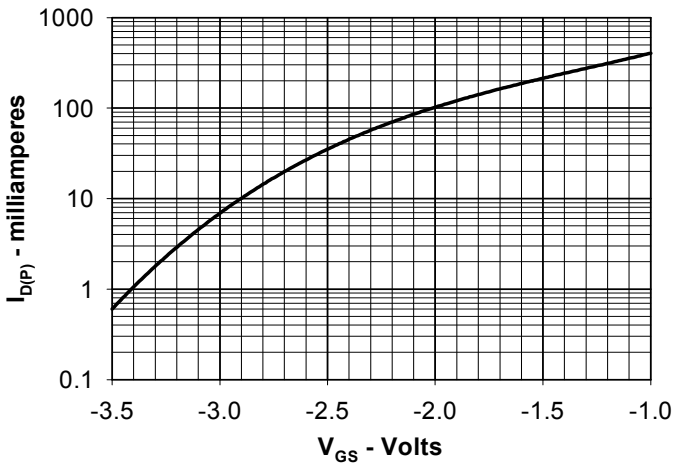
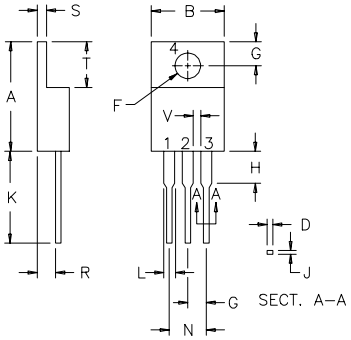


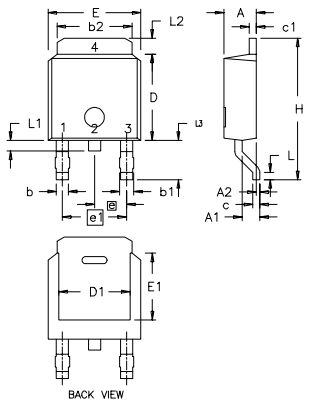
Fig. 4. Plateau current versus applied input voltage

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 6,710,405B2 4,881,106 5,034,796 5,187,117 5,486,715 6,306,728 B1 6,583,505 6,710,463