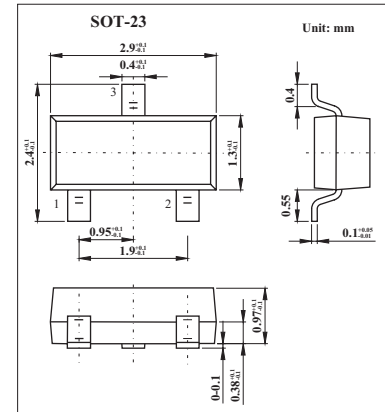
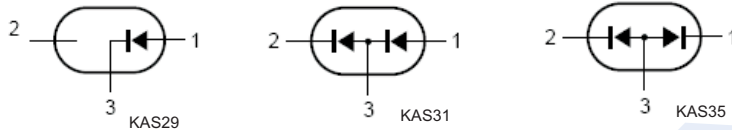


## General Purpose Controlled Avalanche Diodes

KAS29/KAS31/KAS35  
(BAS29/BAS31/BAS35)

## ■ Features

- Small plastic SMD package
- General application

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Rating	Unit
Repetitive peak reverse voltage	$V_{RRM}$	110	V
Continuous reverse voltage	$V_R$	90	V
Continuous forward current* 1	$I_F$	250	mA
single diode loaded; double diode loaded;		150	
Repetitive peak forward current	$I_{FRM}$	600	mA
Non-repetitive peak forward current square wave; $T_j = 25^\circ\text{C}$ prior to surge;	$I_{FSM}$	$t = 1 \mu\text{s}$	10
		$t = 100 \mu\text{s}$	4
		$t = 1 \text{s}$	0.75
Total power dissipation $T_a = 25^\circ\text{C}$ *1	$P_{tot}$	250	mW
Repetitive peak reverse current	$I_{RRM}$	600	mA
Repetitive peak reverse energy *2	$E_{RRM}$	5	mJ
Thermal resistance from junction to tie-point	$R_{th\ j-tp}$	360	K/W
Thermal resistance from junction to ambient * 1	$R_{th\ j-a}$	500	K/W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$

\*1 Device mounted on an FR4 printed-circuit board.

\*2  $t_p \geq 50 \mu\text{s}$ ;  $f \leq 20 \text{ Hz}$ ;  $T_j = 25^\circ\text{C}$

## KAS29/KAS31/KAS35 (BAS29/BAS31/BAS35)

### ■ Electrical Characteristics Ta = 25°C

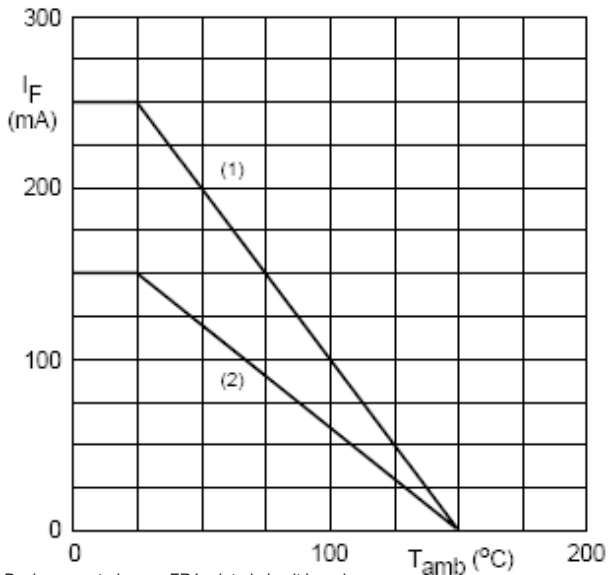
Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 10 mA			750	mV
		I <sub>F</sub> = 50 mA			840	mV
		I <sub>F</sub> = 100 mA			900	mV
		I <sub>F</sub> = 200 mA			1	V
		I <sub>F</sub> = 400 mA			1.25	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> = 90 V			100	nA
		V <sub>R</sub> = 90 V; T <sub>j</sub> = 150 °C			100	μA
Reverse avalanche breakdown voltage	V <sub>(BR)R</sub>	I <sub>R</sub> = 1 mA	120		170	V
Diode capacitance	C <sub>d</sub>	f = 1 MHz; V <sub>R</sub> = 0			35	pF
Reverse recovery time	t <sub>rr</sub>	when switched from I <sub>F</sub> = 30 mA to I <sub>R</sub> = 30 mA; R <sub>L</sub> = 100 Ω; measured at I <sub>R</sub> = 3 mA			50	ns

### ■ Marking

NO.	KAS29	KAS31	KAS35
Marking	L20	L21	L22

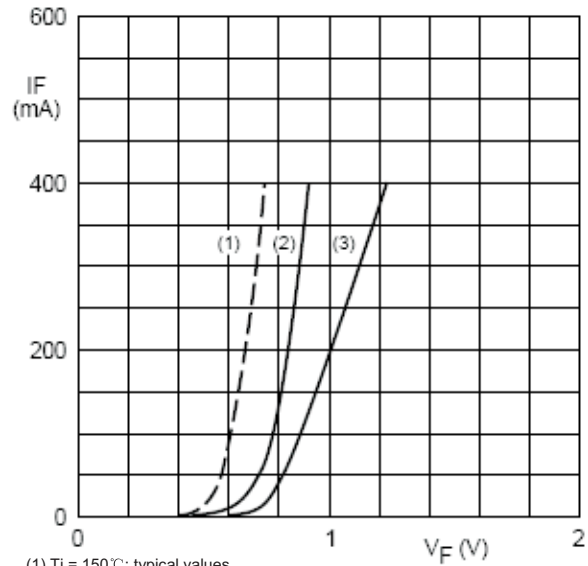
### KAS29/KAS31/KAS35 (BAS29/BAS31/BAS35)

■ Typical Characteristics



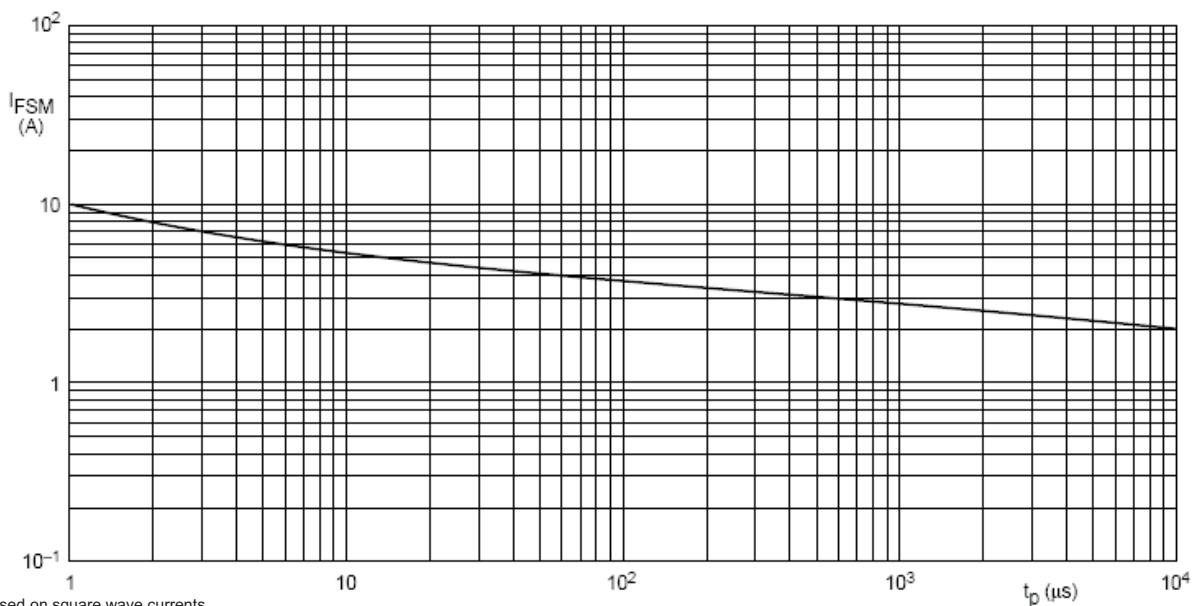
Device mounted on an FR4 printed-circuit board.  
(1) Single diode loaded.  
(2) Double diode loaded.

Fig.1 Maximum Permissible Continuous Forward Current as a Function Of Ambient Temperature.



(1)  $T_j = 150^\circ\text{C}$ ; typical values.  
(2)  $T_j = 25^\circ\text{C}$ ; typical values.  
(3)  $T_j = 25^\circ\text{C}$ ; maximum values.

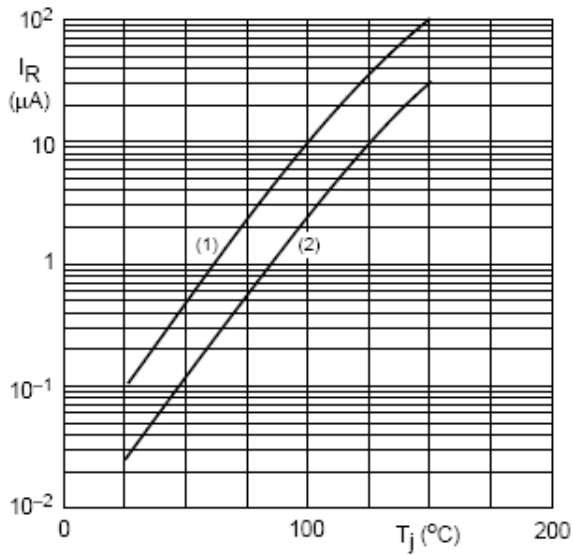
Fig.2 Forward Current as a Function of Forward Voltage.



Based on square wave currents.  
 $T_j = 25^\circ\text{C}$  prior to surge.

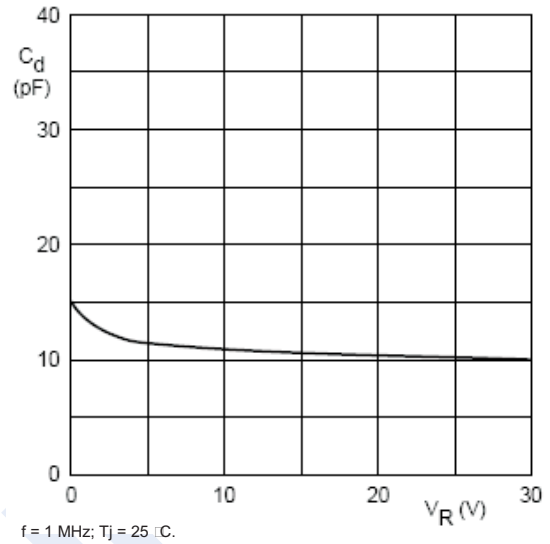
Fig.3 Maximum permissible non-repetitive peak forward current as a function of pulse duration.

**KAS29/KAS31/KAS35**  
(BAS29/BAS31/BAS35)



(1)  $V_R = 90\text{ V}$ ; maximum values.  
(2)  $V_R = 90\text{ V}$ ; typical values.

Fig.4 Reverse Current as a Function of Junction Temperature.



$f = 1\text{ MHz}$ ;  $T_j = 25\text{ }^\circ\text{C}$ .

Fig.5 Diode Capacitance as a Function Of Reverse Voltage; Typical Values.