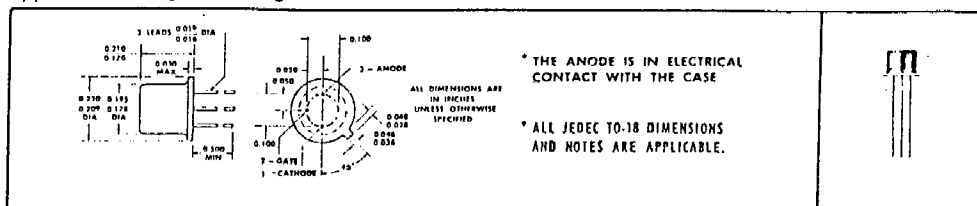


2N3002
SILICON CONTROLLED SWITCH

mechanical data

The devices are in a hermetically sealed welded case with a glass-to-metal seal between case and leads. Approximate weight is 0.35 grams.



absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

		UNIT
*Continuous Forward Blocking Voltage, V_{FB} (See Note 1)	60	v
*Continuous Reverse Blocking Voltage, V_R	60	v
*Peak Forward Blocking Voltage (See Note 1)	60	v
*Peak Reverse Blocking Voltage	60	v
Peak Gate Reverse Voltage	8	v
*Continuous Anode Forward Current at (or below) 55°C Free-Air Temperature (See Note 2)	350	ma
*Continuous Anode Forward Current at 130°C Free-Air Temperature (See Note 2)	75	ma
*Average Anode Forward Current (180° Conduction Angle) at (or below) 55°C Free-Air Temperature (See Note 2)	250	ma
*Anode Surge Current (See Note 3)	6	a
*Peak Gate Forward Current (Pulse width ≤ 8 msec)	250	ma
*Average Gate Power Dissipation	100	mW
*Operating Free-Air Temperature Range	-65 to +150	°C
*Storage Temperature Range	-65 to +200	°C

*electrical characteristics at 25°C free-air temperature (unless otherwise noted)

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
I_F Anode Forward Blocking Current†	$V_{AK} = \text{Rated } V_{FB}, R_{GK} = 1 \text{ k}\Omega$			20	ma
	$V_{AK} = \text{Rated } V_{FB}, R_{GK} = 1 \text{ k}\Omega, T_A = 150^\circ\text{C}$			20	μa
I_R Anode Reverse Blocking Current†	$V_{KA} = \text{Rated } V_R, R_{GK} = \infty$			0.1	μa
	$V_{KA} = \text{Rated } V_R, R_{GK} = \infty, T_A = 150^\circ\text{C}$			100	μa
I_{GR} Gate Reverse Current	$V_{KG} = 5 \text{ v}, R_L = \infty$			0.1	μa
$I_{GT(on)}$ Gate Trigger Current†	$V_{AA} = 5 \text{ v}, R_L = 12 \Omega$		5.0	20	μa
$V_{GT(on)}$ Gate Trigger Voltage†	$V_{AA} = 5 \text{ v}, R_L = 12 \Omega, T_A = -65^\circ\text{C}$			0.9	v
	$V_{AA} = 5 \text{ v}, R_L = 12 \Omega$		0.55	0.7	v
	$V_{AA} = 5 \text{ v}, R_L = 12 \Omega, T_A = 150^\circ\text{C}$	0.2			v
I_H Holding Current	$R_{GK} = 1 \text{ k}\Omega$		1.2	3.0	ma
	$R_{GK} = 1 \text{ k}\Omega, T_A = -65^\circ\text{C}$			4.0	ma
V_F Peak Instantaneous Fwd. Voltage	$I_F = 350 \text{ ma}$, (See Note 4)			1.1	v
dV/dt Critical Rate of Anode Voltage Rise	$V_{KG} = 1.0 \text{ v}$		400		v/ μsec

NOTES: 1. This value applies when the Gate-Cathode Resistance, $R_{GK} \leq 1 \text{ k}\Omega$
 2. For operation above 55°C free-air temperature, refer to Anode Forward Current Derating Curve, Figure 1.
 3. This rating applies for one half-cycle sine wave, 60 cps, when the device is conducting maximum rated current immediately before and after the surge. Surge may be repeated after the device has returned to original thermal equilibrium conditions.

†Indicates JEDEC registered data.