



**PRODUCT NAME** : 2N6027 Programmable  
Unijunction Transistor (Pack of  
5)

**PRICE** : Rs 20.00

**SKU** : RM2099



SEE THE PRODUCT PAGE FOR COMPLETE DATA SHEET. Copyrights by Robomart.com

## DESCRIPTION

## Features

- Anode-Cathode Volt ( $V_{AK}$ ):  $\pm 40V$
- Gate-Cathode Forward Volt ( $V_{GKF}$ ): 40V
- DC Forward Anode Current ( $I_t$ ): 0.15A
- DC Gate Current ( $I_g$ ):  $\pm 50mA$
- Power Dissipation ( $P_{tot}$ ): 300mW
- Type: Unijunction

## 2N6027, 2N6028

Preferred Device

# Programmable Unijunction Transistor

## Programmable Unijunction Transistor Triggers

Designed to enable the engineer to “program” unijunction characteristics such as  $R_{BB}$ ,  $\eta$ ,  $I_V$ , and  $I_P$  by merely selecting two resistor values. Application includes thyristor–trigger, oscillator, pulse and timing circuits. These devices may also be used in special thyristor applications due to the availability of an anode gate. Supplied in an inexpensive TO–92 plastic package for high–volume requirements, this package is readily adaptable for use in automatic insertion equipment.

- Programmable —  $R_{BB}$ ,  $\eta$ ,  $I_V$  and  $I_P$
- Low On–State Voltage — 1.5 Volts Maximum @  $I_F = 50$  mA
- Low Gate to Anode Leakage Current — 10 nA Maximum
- High Peak Output Voltage — 11 Volts Typical
- Low Offset Voltage — 0.35 Volt Typical ( $R_G = 10$  k ohms)
- Device Marking: Logo, Device Type, e.g., 2N6027, Date Code

### MAXIMUM RATINGS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
*Power Dissipation Derate Above $25^\circ\text{C}$	$P_F$ $1/\theta_{JA}$	300 4.0	mW mW/ $^\circ\text{C}$
*DC Forward Anode Current Derate Above $25^\circ\text{C}$	$I_T$	150 2.67	mA mA/ $^\circ\text{C}$
*DC Gate Current	$I_G$	$\pm 50$	mA
Repetitive Peak Forward Current 100 $\mu\text{s}$ Pulse Width, 1% Duty Cycle *20 $\mu\text{s}$ Pulse Width, 1% Duty Cycle	$I_{TRM}$	1.0 2.0	Amps
Non–Repetitive Peak Forward Current 10 $\mu\text{s}$ Pulse Width	$I_{TSM}$	5.0	Amps
*Gate to Cathode Forward Voltage	$V_{GKF}$	40	Volts
*Gate to Cathode Reverse Voltage	$V_{GKR}$	–5.0	Volts
*Gate to Anode Reverse Voltage	$V_{GAR}$	40	Volts
*Anode to Cathode Voltage <sup>(1)</sup>	$V_{AK}$	$\pm 40$	Volts
Operating Junction Temperature Range	$T_J$	–50 to +100	$^\circ\text{C}$
*Storage Temperature Range	$T_{stg}$	–55 to +150	$^\circ\text{C}$

\*Indicates JEDEC Registered Data

(1) Anode positive,  $R_{GA} = 1000$  ohms  
 Anode negative,  $R_{GA} = \text{open}$



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**PUTs**  
**40 VOLTS**  
**300 mW**



**TO–92 (TO–226AA)**  
**CASE 029**  
**STYLE 16**

PIN ASSIGNMENT	
1	Anode
2	Gate
3	Cathode

### ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 7 of this data sheet.

**Preferred** devices are recommended choices for future use and best overall value.

**2N6027, 2N6028**

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	75	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	°C/W
Maximum Lead Temperature for Soldering Purposes ( $< 1/16''$ from case, 10 secs max)	$T_L$	260	°C

**ELECTRICAL CHARACTERISTICS** ( $T_C = 25^\circ\text{C}$  unless otherwise noted.)

Characteristic	Fig. No.	Symbol	Min	Typ	Max	Unit
*Peak Current ( $V_S = 10 \text{ Vdc}$ , $R_G = 1 \text{ M}\Omega$ )	2,9,11	$I_P$	—	1.25	2.0	$\mu\text{A}$
2N6028			—	0.08	0.15	
( $V_S = 10 \text{ Vdc}$ , $R_G = 10 \text{ k ohms}$ )	2N6027 2N6028		—	4.0	5.0	
2N6028			—	0.70	1.0	
*Offset Voltage ( $V_S = 10 \text{ Vdc}$ , $R_G = 1 \text{ M}\Omega$ )	1	$V_T$	0.2	0.70	1.6	Volts
2N6028			0.2	0.50	0.6	
( $V_S = 10 \text{ Vdc}$ , $R_G = 10 \text{ k ohms}$ ) (Both Types)			0.2	0.35	0.6	
*Valley Current ( $V_S = 10 \text{ Vdc}$ , $R_G = 1 \text{ M}\Omega$ )	1,4,5	$I_V$	—	18	50	$\mu\text{A}$
2N6028			—	18	25	
( $V_S = 10 \text{ Vdc}$ , $R_G = 10 \text{ k ohms}$ )			2N6027	70	150	—
2N6028			25	150	—	
( $V_S = 10 \text{ Vdc}$ , $R_G = 200 \text{ ohms}$ )	2N6027	1.5	—	—	mA	
2N6028	1.0	—	—			
*Gate to Anode Leakage Current ( $V_S = 40 \text{ Vdc}$ , $T_A = 25^\circ\text{C}$ , Cathode Open) ( $V_S = 40 \text{ Vdc}$ , $T_A = 75^\circ\text{C}$ , Cathode Open)	—	$I_{GAO}$	—	1.0 3.0	10 —	nAdc
Gate to Cathode Leakage Current ( $V_S = 40 \text{ Vdc}$ , Anode to Cathode Shorted)	—	$I_{GKS}$	—	5.0	50	nAdc
*Forward Voltage ( $I_F = 50 \text{ mA Peak}$ )(1)	1,6	$V_F$	—	0.8	1.5	Volts
*Peak Output Voltage ( $V_G = 20 \text{ Vdc}$ , $C_C = 0.2 \mu\text{F}$ )	3,7	$V_O$	6.0	11	—	Volt
Pulse Voltage Rise Time ( $V_B = 20 \text{ Vdc}$ , $C_C = 0.2 \mu\text{F}$ )	3	$t_r$	—	40	80	ns

\*Indicates JEDEC Registered Data

(1) Pulse Test: Pulse Width  $\leq 300 \mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .

