



2N6027

Preliminary

SCR

PROGRAMMABLE UNIJUNCTION TRANSISTOR

DESCRIPTION

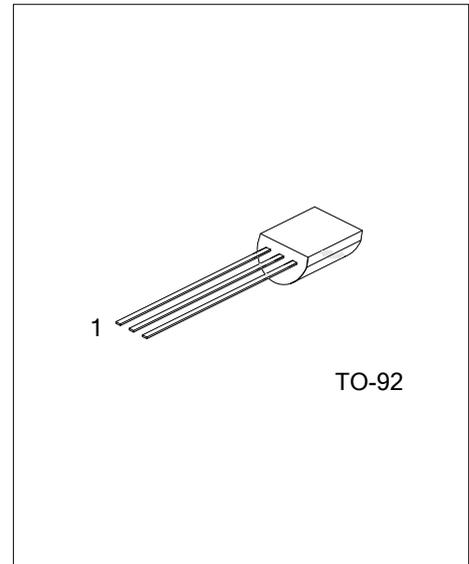
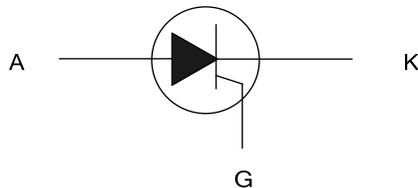
The UTC **2N6027** is a programmable unijunction transistor, it uses UTC's advanced technology to provide customers with low forward voltage, low gate to anode leakage current, low offset voltage and high peak output voltage, etc.

The UTC **2N6027** is suitable for timing, thyristor-trigger, oscillator and pulse circuits, etc.

FEATURES

- * Low Forward Voltage
- * Low Offset Voltage
- * Low Gate to Anode Leakage Current
- * High Peak Output Voltage

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2N6027L-T92-B	2N6027G-T92-B	TO-92	A	G	K	Tape Box

Note: Pin Assignment: A: Anode, G: Gate, K: Cathode

<p>2N6027L-T92-B</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) B: Tape Box, R: Tape Reel, K: Bulk</p> <p>(2) T92: TO-92</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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■ ABSOLUTE MAXIMUM RATINGS ($T_J=25^\circ\text{C}$, unless otherwise noted)

PARAMETER		SYMBOL	RATINGS	UNIT
* Power Dissipation		P_F	300	mW
	Derate Above 25°C	$1/\theta_{JA}$	4.0	mW/ $^\circ\text{C}$
* DC Forward Anode Current		I_T	150	mA
	Derate Above 25°C		2.67	mA/ $^\circ\text{C}$
* DC Gate Current		I_G	± 50	mA
Repetitive Peak Forward Current	100 μs Pulse Width, 1% Duty Cycle	I_{TRM}	1.0	Amps
	* 20 ms Pulse Width, 1% Duty Cycle		2.0	Amps
Non-Repetitive Peak Forward Current 10 ms 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 (Note 1)		V_{AK}	± 40	Volts
Operating Junction Temperature Range		T_J	-50 to +100	$^\circ\text{C}$
* Storage Temperature Range		T_{STG}	-55 to +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

* Indicates JEDEC Registered Data.

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

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	θ_{JC}	75	$^\circ\text{C}/\text{W}$
Junction to Ambient	θ_{JA}	200	$^\circ\text{C}/\text{W}$
Maximum Lead Temperature for Soldering Purposes ($<1/16''$ from case, 10 secs max)	T_L	260	$^\circ\text{C}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Peak Current (Note 2)	I_P	$V_S=10\text{Vdc}$, $R_G=1\text{M}\Omega$		1.25	2.0	μA
		$V_S=10\text{Vdc}$, $R_G=10\text{kohms}$		4.0	5.0	μA
Offset Voltage (Note 2)	V_T	$V_S=10\text{Vdc}$, $R_G=1\text{M}\Omega$	0.2	0.70	1.6	Volts
Valley Current (Note 2)	I_V	$V_S=10\text{Vdc}$, $R_G=1\text{M}\Omega$		18	50	μA
		$V_S=10\text{Vdc}$, $R_G=10\text{kohms}$	70	150		μA
		$V_S=10\text{Vdc}$, $R_G=200\text{ohms}$	1.5			mA
Gate to Anode Leakage Current (Note 2)	I_{GAO}	$V_S=40\text{Vdc}$, $T_A=25^\circ\text{C}$, Cathode Open		1.0	10	nAdc
		$V_S=40\text{Vdc}$, $T_A=75^\circ\text{C}$, Cathode Open)		3.0		nAdc
Gate to Cathode Leakage Current	I_{GKS}	$V_S=40\text{Vdc}$, Anode to Cathode Shorted		5.0	50	nAdc
Forward Voltage (Note 1, 2)	V_F	$I_F=50\text{mA}$ Peak		0.8	1.5	Volts
Peak Output Voltage (Note 2)	V_O	$V_G=20\text{Vdc}$, $C_C=0.2\mu\text{F}$	60	11		Volt
Pulse Voltage Rise Time	t_r	$V_B=20\text{Vdc}$, $C_C=0.2\mu\text{F}$		40	80	ns

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

2. Indicates JEDEC Registered Data.

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