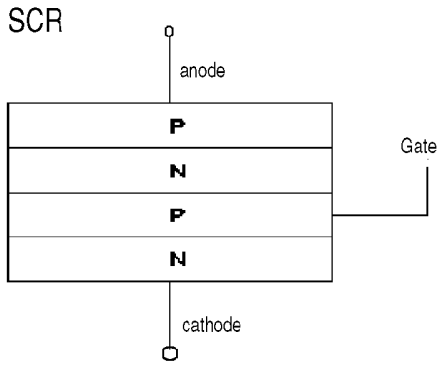
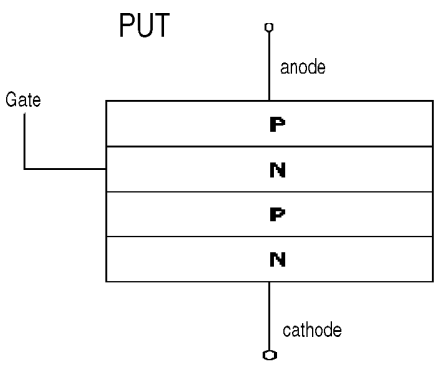
NEW ENGLAND SEMICONDUCTOR

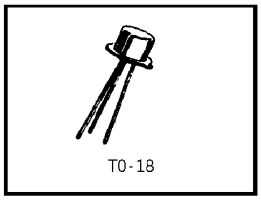
2N6027
2N6028
2N6116
2N6117
2N6118
2N6137

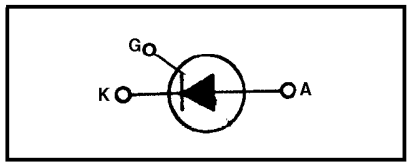
Programmable Unijunction Transistors

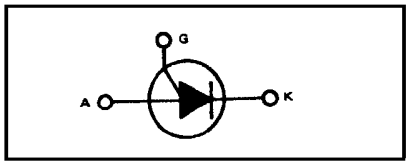
Programmable Unijunction Transistors (PUTs) are complementary Silicon Controlled Rectifiers (SCRs) with a PNPN structure.

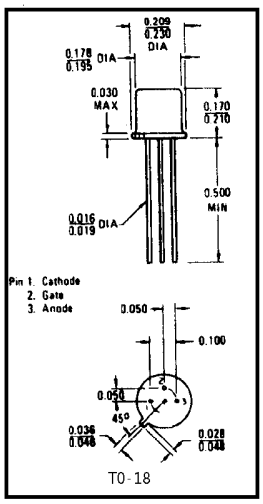












Programmable Unijunction Transistors

Silicon Programmable Unijunction Transistors

...designed to enable the engineer to "program" unijunction characteristics such as R_{BB}, η, 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 TO-18 package or in chip form.

- Programmable -- R_{BB}, η, 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)

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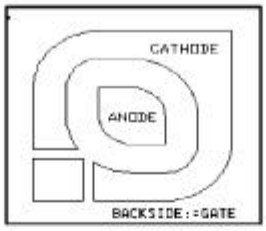
CHIP SPECIFICATION



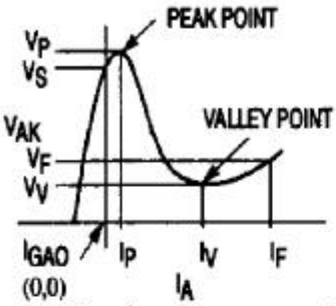
GEOMETRY

DIE SIZE	20X20MILS
ANODE	4X4 MILS
CATHODE	3X3 MILS

METALLIZATION

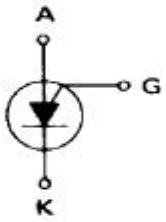
TOP	Al
BACK	Au

Programmable Unijunction Transistors — PUT

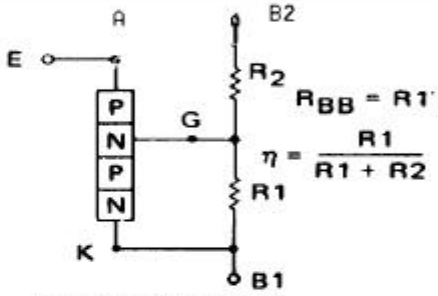


Similar to UJTs, except that I_V, I_P and intrinsic standoff voltage are programmable (adjustable) by means of external voltage divider. This stabilizes circuit performance for variations in device parameters. General operating frequency range is from 0.01 Hz to 10 kHz, making them suitable for long-duration timer circuits.

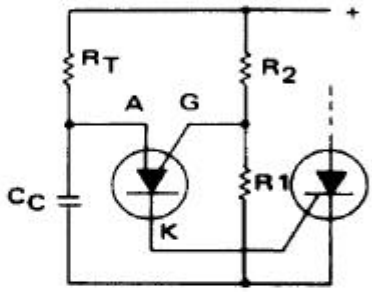
PROGRAMMABLE UNIJUNCTION TRANSISTORS



Circuit Symbol



Equivalent Circuit with External "Program" Resistors R1 and R2



Typical Application

Maximum Ratings

Device types	P_T T_A = +25°C 1/	I_T	I_{TSM} Peak 2/	V_{GKS} 3/	V_{GKR}	V_{GAR}	V_{AKR}	V_{AKF}	T_{STG}	T_{OP}
	W	mA(rms)	A dc	V dc	V dc	V dc	V dc	V dc	°C	°C
2N6116	.300	300	5	40	5	40	40	40	-65	-55
2N6117	.300	300	5	40	5	40	40	40	to	to
2N6118	.300	300	5	40	5	40	40	40	+150	+125
2N6137	.300	300	5	40	5	40	40	40		
2N6027	.300	150	5	40	5	40	40	40		
2N6028	.300	150	5	40	5	40	40	40		

1/ Derate linearly 2.5 mW/°C for T_A above +25°C
2/ 10 µs, square wave, 1 percent duty cycle
3/ Anode shorted to gate

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