

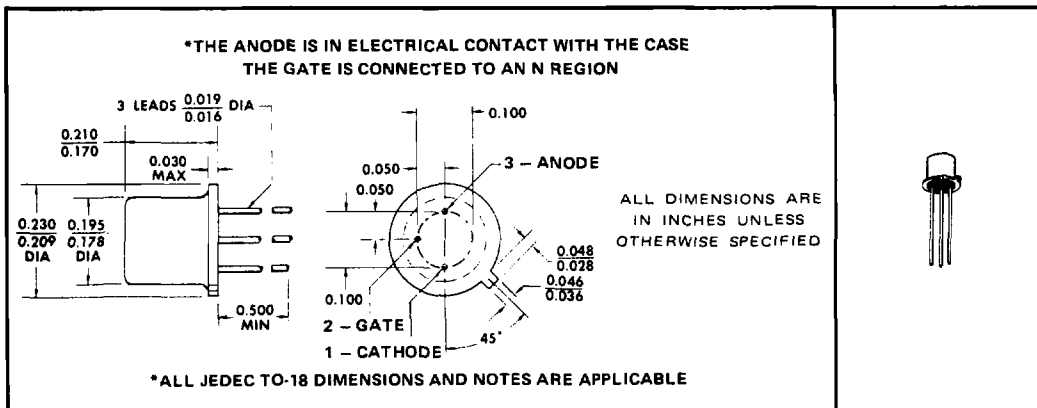
TYPES 2N6116, 2N6117, 2N6118

P-N-P-N SILICON PROGRAMMABLE UNIJUNCTION TRANSISTORS

BULLETIN NO. DL-S 7211776, DECEMBER 1972

- For Use in Pulse, Timing, Sweep, Trigger, and Oscillator Circuits
- Features Low Peak-Point Current and Low Forward Voltage
- Programmable η , r_{BB} , I_p , and I_V

mechanical data



4

*absolute maximum ratings at 25°C free-air temperature (unless otherwise noted)

Anode-Cathode Voltage	±40 V
Gate-Anode Voltage	40 V
Gate-Cathode Voltage: (Positive Limit)	40 V
(Negative Limit)	-5 V
Continuous Anode Current at (or below) 25°C Free-Air Temperature (See Note 1)	200 mA
Repetitive Peak Anode Current: ($t_w = 100 \mu s$, Duty Cycle $\leq 1\%$)	1 A
($t_w = 20 \mu s$, Duty Cycle $\leq 1\%$)	2 A
Nonrepetitive Peak Anode Current: ($t_w = 10 \mu s$, Duty Cycle = 0)	5 A
Continuous Gate Current	±20 mA
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 2)	250 mW
Storage Temperature Range	-65°C to 200°C
Lead Temperature 1/16 Inch from Case for 10 Seconds	260°C

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

PARAMETER	TEST CONDITIONS	2N6116		2N6117		2N6118		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
I_{GAO} Gate Reverse Current	$V_{GA} = 40 V, I_K = 0$	5		5		5		nA
	$V_{GA} = 40 V, I_K = 0, T_A = 75^\circ C$	75		75		75		
I_{GKS} Gate Reverse Current	$V_{GK} = 40 V, V_{AK} = 0$	50		50		50		nA
$V_P - V_S$ Offset Voltage	$V_S = 10 V, R_G = 10 k\Omega$	0.2	0.6	0.2	0.6	0.2	0.6	V
	$V_S = 10 V, R_G = 1 M\Omega$	0.2	1.6	0.2	0.6	0.2	0.6	
I_p Peak-Point Current	$V_S = 10 V, R_G = 10 k\Omega$	5		2		1		μA
	$V_S = 10 V, R_G = 1 M\Omega$	2		0.3		0.15		
I_V Valley-Point Current	$V_S = 10 V, R_G = 10 k\Omega$	70		50		50		μA
	$V_S = 10 V, R_G = 1 M\Omega$	50		50		25		
V_F Anode-Cathode On-State Voltage	$V_S = 10 V, R_G = 10 k\Omega, I_F = 50 mA$	1.5		1.5		1.5		V

NOTES: 1. Derate linearly to 125°C free-air temperature at the rate of 2 mA/°C.
2. Derate linearly to 125°C free-air temperature at the rate of 2.5 mW/°C.

*JEDEC registered data. This data sheet contains all applicable registered data in effect at the time of publication.

USES CHIP U41

TYPES 2N6116, 2N6117, 2N6118

P-N-P-N SILICON PROGRAMMABLE UNIJUNCTION TRANSISTORS

*operating characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	2N6116		2N6117		2N6118		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
V _{OM} Peak Output Voltage	V _{AA} = 20 V, C ₁ = 0.2 μF,	6		6		6		V
t _r Output Pulse Rise Time	See Figure 4	80		80		80		ns

*PARAMETER MEASUREMENT INFORMATION

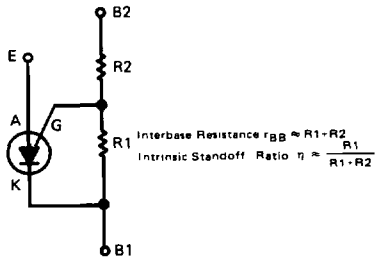


FIGURE 1—PROGRAMMABLE UNIJUNCTION CIRCUIT

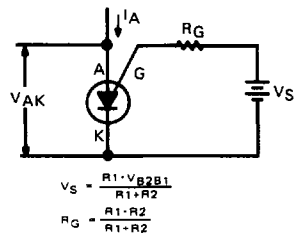


FIGURE 2—EQUIVALENT CIRCUIT USED FOR TESTING

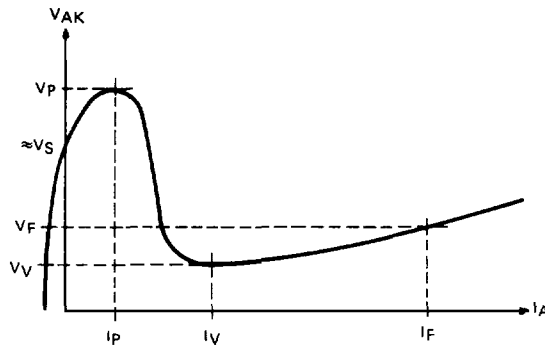
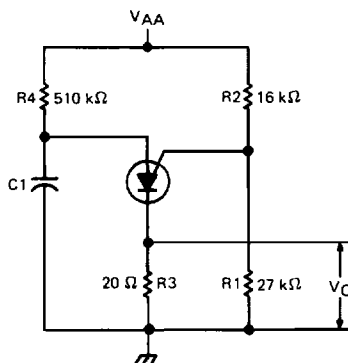
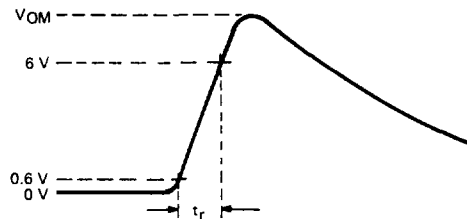


FIGURE 3—GENERAL ANODE CHARACTERISTICS



TEST CIRCUIT



OUTPUT VOLTAGE WAVEFORM

FIGURE 4—TESTING OPERATING CHARACTERISTICS

*JEDEC registered data