

Silicon Complementary Unijunction Transistor



2N6114

2N6115

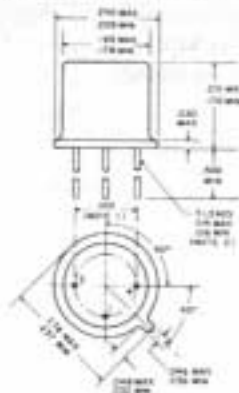
2N6218-24 SEE GES6218-24

COMPLEMENTARY UNIUNCTION

The General Electric Complementary Unijunction Transistor is a silicon planar, monolithic integrated circuit. It has unijunction characteristics with superior stability, a much tighter intrinsic-standoff ratio distribution and lower saturation voltage.

absolute maximum ratings: (25° C free air)

Voltage		
Interbase Voltage	30	V
Emitter - Base 2 Voltage	8.0	V
Current (Note 2)		
Average Emitter (Forward)	150	mA
Peak Emitter (Forward) (Note 1)	2	A
Peak Reverse Emitter	15	mA
Power		
Average Total (Note 2)	300	mW
Temperature		
Operating	-55 to +150	°C
Storage	-55 to +200	°C



PHYSICAL DIMENSIONS
ALL DIMENSIONS IN INCHES
EXCEPT FOR
LEAD CONFIGURATION

1. SEE DIMENSIONS OF CASE AT A MINIMUM 1.0mm (0.039") FROM THE LEAD WELD POINTS TO THE LEAD WELD POINTS. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS.

2. LEAD CONFIGURATION IS DEFINED BY THE LEAD WELD POINTS. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS.

3. DIMENSIONS OF MEASUREMENTS TO BE TAKEN FROM THE LEAD WELD POINTS. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS.

4. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS. THE LEAD WELD POINTS SHALL BE LOCATED WITHIN THE LEAD WELD POINTS.

electrical characteristics: (25° C free air)

			Min.	Typ.	Max.	
Intrinsic Standoff Ratio (Note 3)	η		0.58	0.60	0.62	
Peak Point Voltage						
($V_{BB} = 5V$)	V_P		3.2	3.45	3.7	Volts
($V_{BB} = 10V$)	V_P		6.1	6.45	6.8	Volts
Interbase Resistance		2N6114	R_{BB10}	5.5	6.8	kohms
($I_{BB} = 0.1mA$)		2N6115	R_{BB10}	5.0	15	kohms
Emitter Breakdown Voltage			V_{EB10}	8.0	9.5	Volts
($I_{EB1} = 10\mu A$)						
Peak Point Current		2N6114	I_P		5	μA
($V_{BB} = 10V$)		2N6115	I_P		15	μA
Valley Point Current			I_V	1	2	mA
($V_{BB} = 10V$)						
Emitter Reverse Current		2N6114	I_{EB10}	0.1	10	nA
($V_{EB1} = 5V$)		2N6115	I_{EB10}		100	nA
Emitter Saturation Voltage			$V_{E(sat)}$	1.1	1.5	Volts
($I_E = 50mA, V_{BB} = 10V$)						
Modulated Interbase Current			$I_{B2(mod)}$	1.0	4	mA
($I_E = 50mA, V_{BB} = 10V$)						
Peak Pulse Voltage			V_{OUT}	3.5	4.5	Volts
(Note 4)						
Diode Voltage Drop			V_D	.30	.45	Volts
(Note 3)						
Minimum Charge to Trigger			Q_1	50		pC
($V_{BB} = 10V$)						
Turn-on Time (See Figure 7)			t_{on}		1	$\mu sec.$
Recovery Time (See Figure 7)			t_{rev}		10	$\mu sec.$
Relaxation Oscillator Frequency Shift from 25°C Value (See Figure 1)						
$C = 0.1\mu F, R_{B2} = 950\Omega, V_{BB} = 12.5V$						
-15°C to +65°C				0.2	0.6	%
-55°C to +150°C				0.4	1.0	%

*JEDEC registered data

Notes:

- For capacitor discharge, resistor current limiting is required for capacitors greater than 5 μF and recommended for all cases (A minimum of 15 ohms is required for good temperature stability.)
- Derate power and currents linearly to zero at maximum operating temperature.
- The intrinsic-standoff ratio (η) is essentially constant with temperature and interbase voltage. It and the associated diode drop of peak point voltage are defined by the equations:

$$\eta = \frac{V_{P1} - V_{P2}}{V_{BB1} - V_{BB2}} \quad V_D = V_{P2} - \eta V_{BB}$$

Where: $V_{BB1} = 10V \pm .001V$
 $V_{BB2} = 5V \pm .001V$

- The Base-One Peak Pulse Voltage is measured in the circuit shown in Figure 1. This specification is used to insure a minimum pulse amplitude for applications in SCR firing circuits and other types of firing circuits.

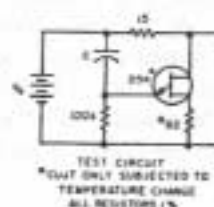


FIGURE 1

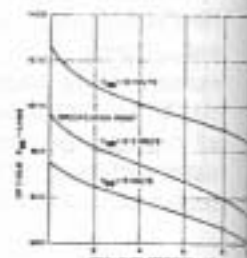
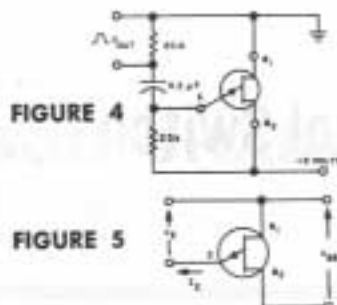
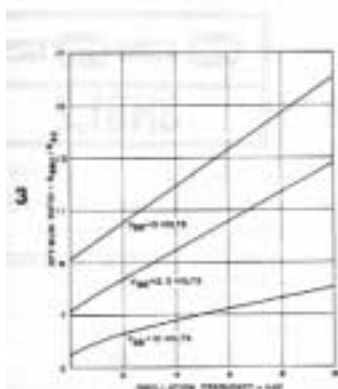
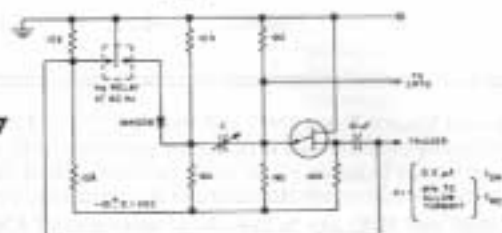
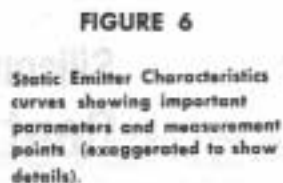


FIGURE 2



Complementary Unijunction Transistor symbol with nomenclature used for voltage and currents.



TYPICAL CHARACTERISTICS

