



## 2N6116

Preliminary

SCR

## PROGRAMMABLE UNIJUNCTION TRANSISTOR

### DESCRIPTION

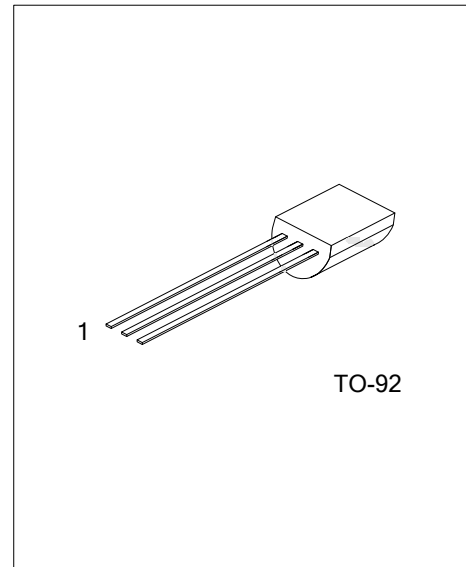
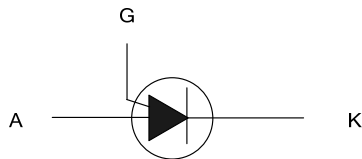
The UTC **2N6116** is a programmable unijunction transistor, it uses UTC's advanced technology to provide customers with low on-state voltage and high peak output voltage, etc.

The UTC **2N6116** is suitable for thyristor-trigger, pulse, oscillator and timing circuits, etc.

### FEATURES

- \* High peak output voltage
- \* Low on-state voltage
- \* Low offset voltage
- \* Low gate to anode leakage current

### SYMBOL



### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2N6116L-T92-B	2N6116G-T92-B	TO-92	A	G	K	Tape Box
2N6116L-T92-K	2N6116G-T92-K	TO-92	A	G	K	Bulk

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

<p>2N6116L-T92-B</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</p>	<p>(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) L: Lead Free, G: Halogen Free</p>
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### MARKING INFORMATION

PACKAGE	MARKING
TO-92	<p>UTC 2N6116 L: Lead Free P: Halogen Free Data Code 1</p>

# ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Forward Current	100μs Pulse Width, 1% Duty Cycle	$I_{TRM}$	1	A
	20μs Pulse Width, 1% Duty Cycle		2	A
Non-Repetitive Peak Forward Current	10μs Pulse Width	$I_{TSM}$	5	A
DC Forward Anode Current		$I_T$	200	mA
Derate Above 25°C			2	mA/°C
DC Gate Current		$I_G$	±20	mA
Gate to Cathode Forward Voltage		$V_{GKF}$	40	V
Gate to Cathode Reverse Voltage		$V_{GKR}$	5	V
Gate to Anode Reverse Voltage		$V_{GAR}$	40	V
Anode to Cathode Voltage		$V_{AK}$	±40	V
Forward Power Dissipation	$T_A=25^{\circ}\text{C}$	$P_F$	250	mW
Derate Above 25°C		$1/\theta_{JA}$	2.5	mW/°C
Operating Junction Temperature		$T_J$	-65~+125	°C
Storage Junction Temperature		$T_{STG}$	-65~+200	°C

Notes: 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.

# ■ ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise noted.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Offset Voltage	$V_T$	$V_S=10\text{V}$ , $R_G=1\text{M}\Omega$	0.2	0.70	1.6	V
		$V_S=10\text{V}$ , $R_G=10\text{k}\Omega$	0.2	0.35	0.6	V
Gate to Anode Leakage Current	$I_{GAO}$	$V_S=40\text{V}$ , $T_A=25^{\circ}\text{C}$ , Cathode Open		1	5	nA
		$V_S=40\text{V}$ , $T_A=75^{\circ}\text{C}$ , Cathode Open		30	75	nA
Gate to Cathode Leakage Current	$I_{GKS}$	$V_S=40\text{V}$ , Anode to Cathode Shorted		5	50	nA
Peak Current	$I_P$	$V_S=10\text{V}$ , $R_G=1\text{M}\Omega$		1.25	2	μA
		$V_S=10\text{V}$ , $R_G=10\text{k}\Omega$		4	5	μA
Valley Current	$I_V$	$V_S=10\text{V}$ , $R_G=1\text{M}\Omega$		18	50	μA
		$V_S=10\text{V}$ , $R_G=10\text{k}\Omega$	70	270		μA
Forward Voltage	$V_F$	$I_F=50\text{mA}$ Peak		0.8	1.5	V
Peak Output Voltage	$V_O$	$V_B=20\text{V}$ , $C_C=0.2\mu\text{F}$	6	16		V
Pulse Voltage Rise Time	$t_R$	$V_B=20\text{V}$ , $C_C=0.2\mu\text{F}$		40	80	ns

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