



**2N6099**

Preliminary

**POWER TRANSISTOR**

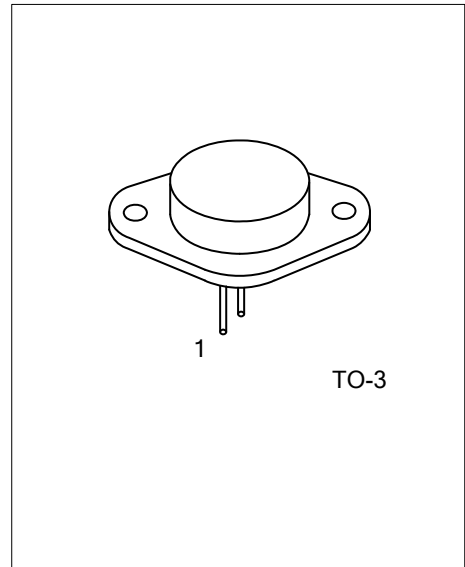
**COMPLEMENTARY SILICON TRANSISTORS**

■ DESCRIPTION

The UTC **2N6099** are complement silicon power transistors designed for high power audio, disk head positions and other linear applications. These device can be used in power switching circuits such as relay or solenoid drivers, DC to DC converters or inverts.

■ FEATURES

- \* Complement Characterized for linear operation
- \* High DC Current Gain and low saturation voltage  
 $\eta_{FE} > 15(-8A, -4V)$   
 $V_{CE(SAT)} < -1.4V(I_C = -8A, I_B = -0.8A)$
- \* For Low Distortion Complementary Designs

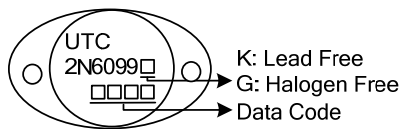


■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2N6099L-T30-Y	2N6099G-T30-Y	TO-3	B	E	C	Tray

<p>2N6099L-T30-Y</p> <p>(1)Packing Type (2)Package Type (3)Lead Free</p>	<p>(1) Y: Tray (2) T30: TO-3 (3) L: Lead Free, G: Halogen Free</p>
--	--

■ MARKING INFORMATION



■ ABSOLUTE MAXIMUM RATING ( $T_A=25^\circ\text{C}$ , unless otherwise specified )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CB0}$	-160	V
Collector-Emitter Voltage	$V_{CEO}$	-140	V
Emitter-Base Voltage	$V_{EBO}$	-7	V
Collector-Emitter Voltage	$V_{CEX}$	-160	V
Power Dissipation	$P_D$	$T_C=25^\circ\text{C}$	150
		Dertate Above $25^\circ\text{C}$	0.855
Collector Current	$I_C$	Continuous	-16
		Peak	-30
Base Current	$I_B$	Continuous	-4
		Peak	-15
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Notes: 1. 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.

2. Pulse Test:  $P_W \leq 5\text{ms}$ , Duty Cycle  $\leq 10\%$

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	$\theta_{JC}$	1.17	$^\circ\text{C/W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Collector-Base Breakdown Voltage	$BV_{CB0}$	$I_C=-0.2\text{A}, I_B=0$	-160			V
Collector-Emitter Sustaining Voltage	$BV_{CEX}$	$I_C=-0.1\text{A}, V_{BE(OFF)}=-1.5\text{V}, R_{BE}=-100\Omega$	-160			V
Collector-Emitter Sustaining Voltage	$BV_{CER}$	$I_C=-0.1\text{A}, R_{BE}=-100\Omega$	-150			V
Collector Cut-off Current	$I_{CB0}$	$V_{CB}=-140\text{V}, I_E=0$			-2	mA
Emitter Cut-off Current	$I_{EBO}$	$V_{BE}=-7\text{V}, I_C=0$			-5	mA
Collector Cut-off Current	$I_{CEX}$	$V_{CE}=-140\text{V}, V_{BE(OFF)}=-1.5\text{V}$		-2		mA
		$V_{CE}=-140\text{V}, V_{BE(OFF)}=-1.5\text{V}, T_C=150^\circ\text{C}$		-10		mA
<b>ON CHARACTERISTICS</b>						
DC Current Gain (Note)	$h_{FE1}$	$V_{CE}=-4\text{V}, I_C=-8\text{A}$	15		60	
	$h_{FE2}$	$V_{CE}=-4\text{V}, I_C=-16\text{A}$	5			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=-8\text{A}, I_B=-800\text{mA}$			-1.4	V
		$I_C=-16\text{A}, I_B=-3.2\text{A}$			-4	V
Base-Emitter Saturation Voltage	$V_{BE(ON)}$	$I_C=-8\text{A}, V_{CE}=-4\text{V}$			-2.2	V
<b>DYNAMIC CHARACTERISTICS</b>						
Small Signal Current Gain	$h_{FE}$	$I_C=-1\text{A}, V_{CE}=-4\text{V}, f=1\text{kHz}$	40			
Magnitade Of Commom-Emitter Small Signal, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$I_C=-1\text{A}, f=50\text{kHz}$	4			
Second Breakdown Collector With Base Forward Biased	$I_S/b$	$t=1\text{s}(\text{non-repetive}), V_{CE}=-100\text{V}$	-1.5			A

Note: Pulse Test:  $P_W \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.