



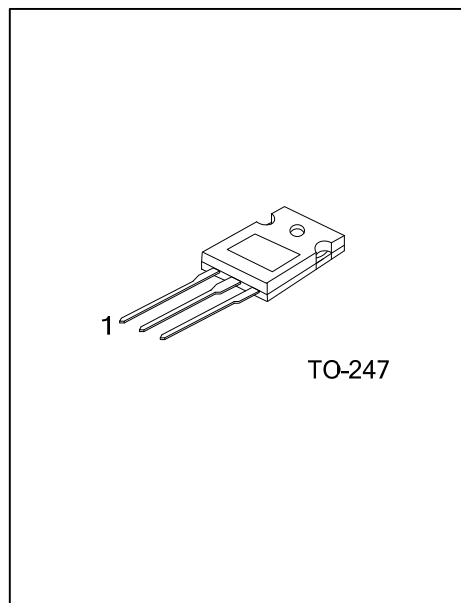
## 2N3055

## NPN SILICON TRANSISTOR

### SILICON NPN TRANSISTORS

#### DESCRIPTION

The UTC **2N3055** is a silicon NPN transistor in TO-247 metal case. It is intended for power switching circuits, series and shunt regulators, output stages and high fidelity amplifiers.



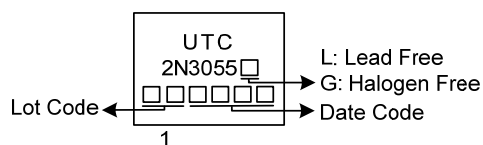
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2N3055L-T47-T	2N3055G-T47-T	TO-247	B	C	E	Tube

Note: Pin Assignment: B: Base E: Emitter C: Case

<p>2N3055G-T47-T</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) T: Tube</li> <li>(2) T47: TO-247</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
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#### MARKING



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

PARAMETERS	SYMBOL	VALUE	UNITS
Collector-Base Voltage	$V_{CBO}$	100	V
Collector-Emitter Voltage	$V_{CEO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector-Emitter Voltage	$V_{CEV}$	70	V
Collector Current	$I_C$	15	A
Collector Peak Current (Note)	$I_{CM}$	15	A
Base Current	$I_B$	7	A
Base Peak Current (Note)	$I_{BM}$	15	A
Total Dissipation at $T_A=25^\circ\text{C}$	$P_D$	90	W
Max. Operating Junction Temperature	$T_J$	200	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-65 ~ 200	$^\circ\text{C}$

Note: 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 specified )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C=200\text{mA}$ , $I_B=0\text{V}$	60			V
Collector-Emitter Sustaining Voltage	$V_{CER(sus)}$	$I_C=0.2\text{A}$ , $R_{BE}=100\text{ Ohms}$	70			V
Collector Cut-off Current	$I_{CEO}$	$V_{CE}=30\text{V}$ , $I_B=0$			0.7	mA
Collector Cut-off Current ( $T_A=150^\circ\text{C}$ )	$I_{CEX}$	$V_{CE}=100\text{V}$ , $V_{BE(off)}=1.5\text{V}$			1.0	mA
		$V_{CE}=100\text{V}$ , $V_{BE(off)}=1.5\text{V}$			5.0	mA
Emitter Cut-off Current	$I_{EBO}$	$V_{BE}=7\text{V}$ , $I_C=0$			5.0	mA
<b>ON CHARACTERISTICS</b>						
DC Current Gain(note)	$h_{FE}$	$I_C=4\text{A}$ , $V_{CE}=4\text{V}$	20		70	
		$I_C=10\text{A}$ , $V_{CE}=4\text{V}$	5			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=4\text{A}$ , $I_B=400\text{mA}$			1.1	V
		$I_C=10\text{A}$ , $I_B=3.3\text{A}$			3.0	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C=4\text{A}$ , $V_{CE}=4\text{V}$			1.5	V
<b>SECOND BREAKDOWN</b>						
Second Breakdown Collector with Base Forward Biased	$I_{s/b}$	$V_{CE}=60\text{V}$ , $T=1.0\text{s}$ , Non-repetitive	2.87			A
<b>DYNAMIC CHARACTERISTICS</b>						
Current Gain-Bandwidth Product	$f_T$	$I_C=0.5\text{A}$ , $V_{CE}=10\text{V}$ , $f=1\text{MHz}$	2.5			MHz
Small-Signal Current Gain	$h_{FE}$	$I_C=1\text{A}$ , $V_{CE}=4\text{V}$ , $f=1\text{kHz}$	15		120	
Small-Signal Current Gain Cut-off Frequency	$f_{HFE}$	$I_C=1\text{A}$ , $V_{CE}=4\text{V}$ , $f=1.0\text{kHz}$	10			kHz

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

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