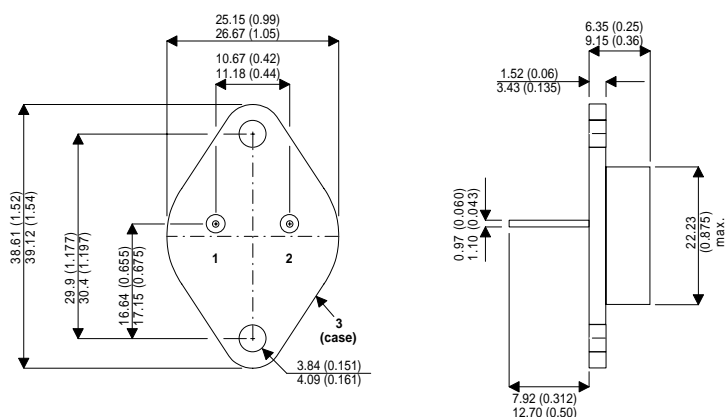


## SILICON PLANAR EPITAXIAL NPN POWER SWITCHING TRANSISTOR

### MECHANICAL DATA

Dimensions in mm (inches)



### FEATURES

- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- JAN LEVEL SCREENING OPTIONS

### APPLICATIONS:

The BUY24 is a silicon planar epitaxial NPN transistor in a TO-3 (TO-204AA) metal case. It is suitable for switching applications up to 5A.

### TO-3 PACKAGE (TO-204AA)

#### Underside View

PAD 1 – Base      PAD 2 – Emitter      PAD 3 – Collector

### ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ unless otherwise stated)

$V_{CBO}$	Collector - Base Voltage ( $I_E = 0$ )	120V
$V_{CEO}$	Collector - Emitter Voltage ( $I_B = 0$ )	60V
$V_{EBO}$	Emitter - Base Voltage ( $I_C = 0$ )	6V
$I_C$	Collector Current	5A
$P_{tot}$	Total Power Dissipation at $T_{case} < 75^{\circ}C$	15W
$R_{JC}$	Thermal Resistance Junction To Case	$5^{\circ}C/W$
$T_{STG}$	Storage Temperature	$-55$ to $+150^{\circ}C$
$T_J$	Junction Temperature	$150^{\circ}C$

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

## ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub> Collector-Cutoff Current	V <sub>CB</sub> =60V I <sub>E</sub> =0			10	μA
	T <sub>C</sub> =125°C			1	mA
V <sub>(BR)CEO</sub> * Collector-Emitter Breakdown Voltage	I <sub>C</sub> =50mA I <sub>B</sub> =0	60			V
V <sub>(BR)CBO</sub> * Collector-Base Breakdown Voltage	I <sub>C</sub> =1mA I <sub>E</sub> =0	120			
V <sub>(BR)EBO</sub> * Emitter-Base Breakdown Voltage	I <sub>E</sub> =1mA I <sub>C</sub> =0	6			
V <sub>CE(sat)</sub> * Collector-Emitter Saturation Voltage	I <sub>C</sub> =2A I <sub>B</sub> =0.2A		0.15	0.6	
	I <sub>C</sub> =5A I <sub>B</sub> =0.5A		0.4	1.0	
V <sub>BE(sat)</sub> * Base-Emitter Saturation Voltage	I <sub>C</sub> =2A I <sub>B</sub> =0.2A		0.9	1.2	
	I <sub>C</sub> =5A I <sub>B</sub> =0.5A		1.1	1.3	
h <sub>FE</sub> * DC Current Gain	I <sub>C</sub> =0.5A V <sub>CE</sub> =2V	45	100		
	I <sub>C</sub> =2A V <sub>CE</sub> =2V	40	85		
	I <sub>C</sub> =5A V <sub>CE</sub> =2V		40		
f <sub>T</sub> Transition Frequency	I <sub>C</sub> =0.5A V <sub>CE</sub> =5V		100		MHz
C <sub>CBO</sub> Collector-Base Capacitance	I <sub>E</sub> =0 V <sub>CB</sub> =10V		35	80	pF
t <sub>on</sub> Turn-on Time	I <sub>C</sub> =5A I <sub>B1</sub> =0.5A		150	350	ns
t <sub>off</sub> Turn-off Time	I <sub>C</sub> =5A I <sub>B1</sub> =I <sub>B2</sub> =0.5A		350	650	
h <sub>fe</sub> Small Signal Current Gain	I <sub>C</sub> =0.5A V <sub>CE</sub> =5V f=20MHz	2.5	5		

\* Pulsed: Pulse Duration = 300μs, duty cycle = 1.0%