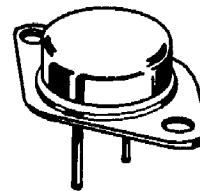


## BUV20



## NPN MULTI - EPITAXIAL POWER TRANSISTOR

### FEATURES

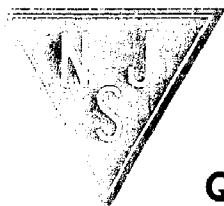
- HIGH CURRENT
- FAST SWITCHING
- HIGH RELIABILITY

### APPLICATIONS

- Industrial Equipment

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

$V_{CBO}$	Collector - Base Voltage ( $I_E = 0$ )	160V
$V_{CER}$	Collector - Emitter Voltage ( $R_{BE} = 100\Omega$ )	150V
$V_{CEX}$	Collector - Emitter Voltage ( $V_{BE} = -1.5V$ )	160V
$V_{CEO}$	Collector - Emitter Voltage ( $I_B = 0$ )	125V
$V_{EBO}$	Emitter - Base Voltage ( $I_C = 0$ )	7V
$I_C$	Collector Current	50A
$I_{CM}$	Peak Collector Current ( $t_p = 10$ ms)	60A
$I_B$	Base Current	10A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	250W
$T_{stg}$	Storage Temperature	-65 to 200°C
$T_j$	Junction Temperature	200°C



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

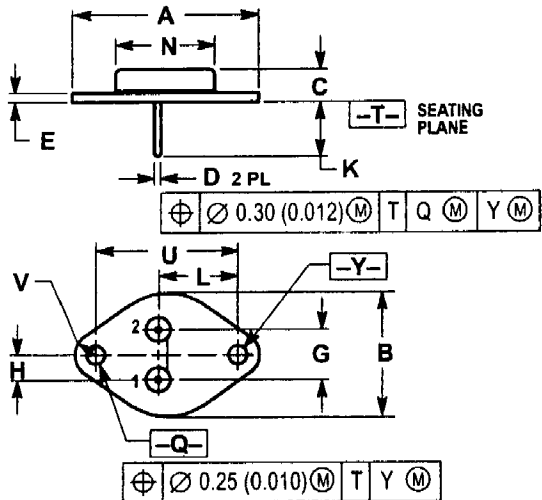
Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>CEO(sus)*</sub>	Collector - Emitter Sustaining Voltage I <sub>C</sub> = 250mA I <sub>B</sub> = 0 L = 25mH	125			V
V <sub>(BR)EBO</sub>	Emitter - Base Voltage I <sub>E</sub> = 50mA	7			
V <sub>CE(sat)*</sub>	Collector Emitter Saturation Voltage I <sub>C</sub> = 25A		0.3	0.6	
	I <sub>C</sub> = 50A		0.7	1.2	
V <sub>BE(sat)*</sub>	Base Emitter Saturation Voltage I <sub>C</sub> = 50A I <sub>B</sub> = 5A		1.4	2	
I <sub>CEO</sub>	Collector Cut-off Current V <sub>CE</sub> = 100V I <sub>B</sub> = 0			3	mA
I <sub>CEX</sub>	Collector Cut-off Current V <sub>CE</sub> = V <sub>CEX</sub> V <sub>BE</sub> = -1.5V T <sub>C</sub> = 125°C			3	
				12	
I <sub>EBO</sub>	Emitter Cut-off Current I <sub>C</sub> = 0 V <sub>EB</sub> = 5V			1	
h <sub>FE*</sub>	DC Current Gain V <sub>CE</sub> = 2V I <sub>C</sub> = 25A	20		60	—
	V <sub>CE</sub> = 4V I <sub>C</sub> = 50A	10			
f <sub>T</sub>	Transition Frequency I <sub>C</sub> = 2A V <sub>CE</sub> = 15V f = 100MHz	8			MHz
t <sub>on</sub>	Turn-On Time I <sub>C</sub> = 50A I <sub>B</sub> = 5A			1.5	μs
t <sub>s</sub>	Storage Time I <sub>C</sub> = 50A I <sub>B1</sub> = -I <sub>B2</sub> = 5A			1.2	
t <sub>r</sub>	Fall Time I <sub>C</sub> = 50A I <sub>B1</sub> = -I <sub>B2</sub> = 5A			0.3	

## NOTES

\* Pulse Test: t<sub>p</sub> = 300μs, δ ≤ 2%

## MECHANICAL DATA

Dimensions in mm(inches)



- NOTES:  
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.530 REF		38.86 REF	
B	0.990	1.050	25.15	26.67
C	0.250	0.335	6.35	8.51
D	0.057	0.063	1.45	1.60
E	0.060	0.070	1.53	1.77
G	0.430 BSC		10.92 BSC	
H	0.215 BSC		5.46 BSC	
K	0.440	0.480	11.18	12.19
L	0.665 BSC		16.89 BSC	
N	0.760	0.830	19.31	21.08
Q	0.151	0.165	3.84	4.19
U	1.187 BSC		30.15 BSC	
V	0.131	0.188	3.33	4.77

## TO-3

PIN 1 — Base  
 PIN 2 — Emitter  
 Case is Collector.