

**BU522**  
**BU522A**  
**BU522B**

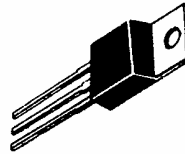
**HIGH VOLTAGE SILICON POWER DARLINGTONS**

Power Transistor mainly intended for use as ignition circuit output transistor.

- Specified minimum sustaining voltage:  
 $V_{CE(sus)} = 350\text{ V (BU522)}$   
 $400\text{ V (BU522A)}$   
 $425\text{ V (BU522B)}$
- High S.O.A. capability:  
 $V_{CE} = 350\text{ V (BU522) at } I_C = 5\text{ A}$   
 $400\text{ V (BU522A, BU522B)}$
- Low  $V_{CE(sat)} = 2.0\text{ V max. at } I_C = 4\text{ A (BU522A, BU522B)}$

**7 AMPERES**  
**DARLINGTON**  
**TRIPLE DIFFUSED**  
**POWER TRANSISTORS**  
**NPN SILICON**

**375, 425, 450 VOLTS**  
**75 WATTS**



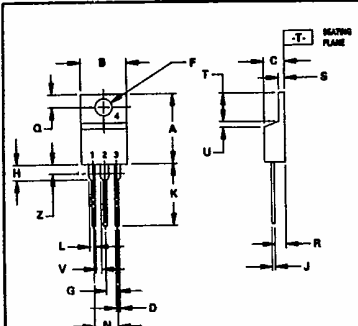
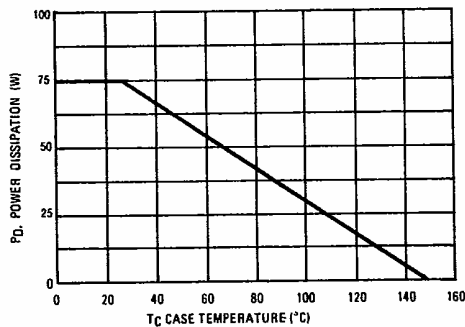
**MAXIMUM RATINGS**

Rating	Symbol	BU522	BU522A	BU522B	Unit
Collector-Emitter Voltage Sust.	$V_{CE(sus)}$	350	400	425	Vdc
Collector-Emitter Voltage	$V_{CE}$	375	425	450	Vdc
Collector-Base Voltage	$V_{CBO}$	400	450	475	Vdc
Emitter-Base Voltage	$V_{EBO}$	5.0			Vdc
Collector Current - Continuous	$I_C$	7.0			Adc
Base Current	$I_B$	2.0			Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	75 0.60			Watts W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to 150			$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max.	Unit
Thermal Resistance, Junction to Case	$\theta_{JC}$	1.67	$^\circ\text{C/W}$

**FIGURE 1 - POWER DERATING**



NOTES:  
1. DIMENSIONS AND TOLERANCING PER ANSI Y14.5M, 1982.  
2. CONTROLLING DIMENSION INCH.  
3. DIM Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	14.48	15.75	0.570	0.620
B	9.50	10.76	0.380	0.425
C	4.97	4.82	0.190	0.190
D	0.64	0.98	0.025	0.035
F	3.61	3.73	0.142	0.147
G	2.42	2.66	0.095	0.105
H	2.90	3.83	0.110	0.155
J	0.48	0.71	0.018	0.028
K	12.70	14.27	0.500	0.562
L	1.15	1.38	0.045	0.055
N	4.83	5.33	0.190	0.210
Q	2.54	3.04	0.100	0.120
R	2.54	2.79	0.090	0.110
S	1.15	1.30	0.045	0.055
T	5.97	6.47	0.235	0.255
U	0.00	1.27	0.000	0.050
V	1.15	—	0.045	—
Z	—	2.04	—	0.080

STYLE 1  
PIN 1 BASE  
2 COLLECTOR  
3 EMITTER  
4 COLLECTOR

CASE 221A-04  
TO-220AB

**ELECTRICAL CHARACTERISTICS** ( $T_C = 25^\circ\text{C}$  unless otherwise noted)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Sustaining Voltage (See Figure 2) ( $I_C = 1.0\text{ A}$ ) See Figure 2	$V_{CE(sus)}$				Vdc
	BU522	350			
	BU522A	400			
	BU522B	425			
Collector Cutoff Current (Rated $V_{CE}$ , $R_{BE} = 270\ \Omega$ )	$I_{CER}$			1.0	mAdc
Collector Cutoff Current (Rated $V_{CB0}$ , $I_E = 0$ )	$I_{CBO}$			1.0	mAdc
Emitter Cutoff Current ( $V_{EB} = 5.0\text{ Vdc}$ , $I_C = 0$ )	$I_{EBO}$			40	mAdc

**ON CHARACTERISTICS**

DC Current Gain ( $I_C = 2.5\text{ Adc}$ , $V_{CE} = 5\text{ Vdc}$ )	$h_{FE}$	250			
Collector-Emitter Saturation Voltage ( $I_C = 4\text{ Adc}$ , $I_B = 80\text{ mAdc}$ )	$V_{CE(sat)}$			2.5 2	Vdc
Base-Emitter Saturation Voltage ( $I_C = 4\text{ Adc}$ , $I_B = 80\text{ mAdc}$ )	$V_{BE(sat)}$			2.5	Vdc

**DYNAMIC CHARACTERISTICS**

Current Gain – Bandwidth Product ( $I_C = 0.3\text{ mAdc}$ , $V_{CE} = 5.0\text{ Vdc}$ , $f_{test} = 1.0\text{ MHz}$ )	$f_T$		7.5		MHz
Output Capacitance ( $V_{CB} = 10\text{ Vdc}$ , $I_E = 0$ , $f = 0.1\text{ MHz}$ )	$C_{ob}$		150		pF



This datasheet has been downloaded from:

[www.DatasheetCatalog.com](http://www.DatasheetCatalog.com)

Datasheets for electronic components.