

# BU204-BU205

## NPN POWER TRANSISTORS

### FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

### MAXIMUM RATINGS

Characteristic	Symbol	BU204	BU205	Unit
Collector-Emitter Voltage	$V_{CE0}$	600	700	V
Collector-Emitter Voltage	$V_{CEX}$	1300	1500	V
Emitter-Base Voltage	$V_{EBO}$	5.0		V
Collector Current – continuous	$I_C$	2.5		A
Peak		3.0		
Base Current -continuous	$I_B$	1.0		A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	$P_D$	36		W
Derate Above $25^\circ\text{C}$		0.4		W/ $^\circ\text{C}$
Operating and Storage Temperature Range	$T_J, T_{stg}$	-65 to +115		$^\circ\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5		$^\circ\text{C}/\text{W}$

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

Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Sustaining Voltage <sup>(1)</sup> ( $I_C = 100\text{mA}, I_B = 0$ )	$V_{CE0(sus)}$	600	-	V
		700	-	
Collector Cutoff Current ( $V_{CE} = 1300\text{V}, V_{BE} = 0$ ) ( $V_{CE} = 1500\text{V}, V_{BE} = 0$ )	$I_{CES}$	-	1.0	mA
		-	1.0	
Emitter Cutoff Current ( $V_{EB} = 5.0\text{V}, I_C = 0$ )	$I_{EBO}$	-	10	mA
DC Current Gain <sup>(1)</sup> ( $I_C = 2.0\text{A}, V_{CE} = 5.0\text{V}$ )	$h_{FE}$	15	60	-
Collector-Emitter Saturation Voltage <sup>(1)</sup> ( $I_C = 2.0\text{A}, I_B = 1.0\text{A}$ )	$V_{CE(sat)}$	-	5.0	V
Base-Emitter Saturation Voltage <sup>(1)</sup> ( $I_C = 2.0\text{A}, I_B = 1.0\text{A}$ )	$V_{BE(sat)}$	-	1.5	V
Current Gain – Bandwidth Product ( $I_C = 100\text{mA}, V_{CE} = 5\text{V}, f = 1\text{MHz}$ )	$f_T$	4.0 (typ)		MHz
Output Capacitance ( $V_{CE} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$ )	$C_{ob}$	50 (typ)		pF
Fall Time $I_C = 2.0\text{A}, I_{B1} = 1.0\text{A}, L_B = 25\mu\text{H}$	$t_f$	0.65 (typ)		$\mu\text{s}$

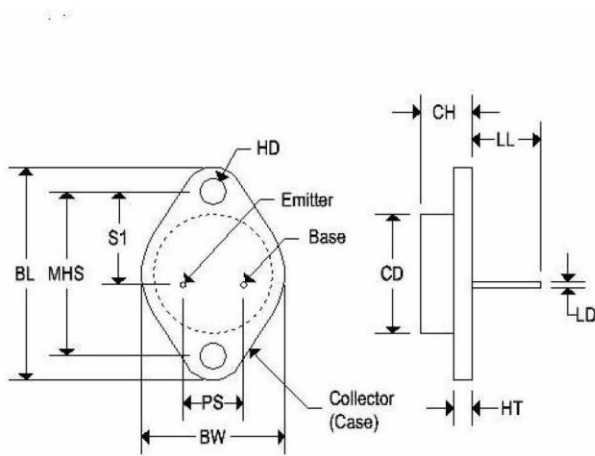
Note 1: Pulse test: Pulse width  $\leq 300\mu\text{s}$ . Duty cycle  $\leq 2\%$ .

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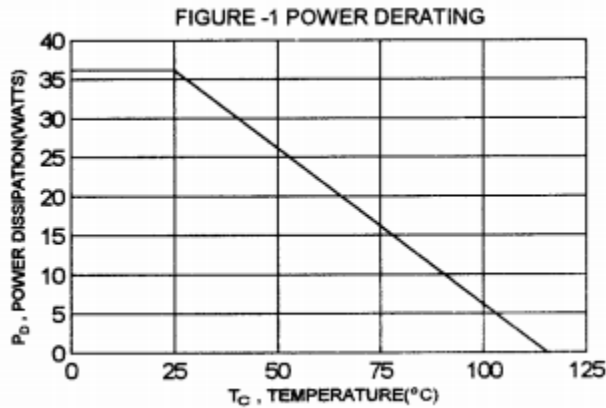
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### MECHANICAL CHARACTERISTICS

Case:	TO-3
Marking:	Alpha-Numeric
Polarity:	See below



	TO-3			
	Inches		Millimeters	
	Min	Max	Min	Max
CD	-	0.875	-	22.220
CH	0.250	0.380	6.860	9.650
HT	0.060	0.135	1.520	3.430
BW	-	1.050	-	26.670
HD	0.131	0.188	3.330	4.780
LD	0.038	0.043	0.970	1.090
LL	0.312	0.500	7.920	12.700
BL	1.550 REF		39.370 REF	
MHS	1.177	1.197	29.900	30.400
PS	0.420	0.440	10.670	11.180
S1	0.655	0.675	16.640	17.150



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