DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

BUX10

NPN POWER TRANSISTOR

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	BUX10	Unit
Collector-Base Voltage (I_E = 0)	V_{CBO}	160	V
Collector-Emitter Voltage (V_{BE} = -1.5V)	V_{CEX}	160	V
Collector-Emitter Voltage (I_B = 0)	V_{CEO}	125	V
Emitter-Base Voltage (I_C = 0)	V_{EBO}	7.0	V
Collector Current – continuous **Peak**	I_C	25 30	A
Base Current -continuous	I_B	5.0	A
Total Power Dissipation @ T_C = 25°C	P_D	150	W
Junction and Storage Temperature Range	T_J, T_{stg}	-65 to +200	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.17	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise specified)

Characteristic		Symbol	Min	Typ	Max	Unit
Collector Cutoff Current (V_{CE} = 100V, I_B = 0)		I_{CEO}	-	-	1.5	mA
Collector Cutoff Current (V_{CE} = 160V, V_{BE} = -1.5V) (V_{CE} = 160V, V_{BE} = -1.5V, T_C = 125°C)		I_{CEX}	- -	- -	1.5 6.0	mA
Emitter Cutoff Current (V_{EB} = 5.0V, I_C = 0)		I_{EBO}	-	-	1	mA
Collector-Emitter Sustaining Voltage(1) (I_C = 0.2A, I_B = 0)		$V_{CEO(sus)}$	125	-	-	V
Emitter-Base Voltage (I_C = 0, I_E = 50mA)		V_{EBO}	7	-	-	V
Collector-Emitter Saturation Voltage(1) (I_C = 10A, I_B = 1A) (I_C = 20A, I_B = 2A)		$V_{CE(sat)}$	- -	0.3 0.7	0.6 1.2	V
Base-Emitter Saturation Voltage (I_C = 20A, I_B = 2A)		$V_{BE(sat)}$	-	1.6	2.0	V
DC Current Gain (I_C = 10A, V_{CE} = 2.0V) (I_C = 20A, V_{CE} = 4.0V)		h_{FE}	20 10	- -	60 -	-
Second Breakdown Collector Current (V_{CE} = 30V, t = 1s) (V_{CE} = 48V, t = 1s)		$I_{S/b}$	5 1	- -	- -	A
Transition Frequency (I_C = 1A, V_{CE} = 15V, f = 10MHz)		f_T	8	-	-	MHz
Turn-On Time	I_C = 20A, V_{CC} = 30V, I_{B1} = -I_{B2} = 2A	t_{on}	-	0.5	1.5	µs
Storage Time		t_s	-	0.6	1.2	µs
Fall Time		t_f	-	0.15	0.3	µs
Clamped $E_{S/b}$ Collector Current V_{clamp} = 125V, L = 500µh			20	-	-	A

Note 1: Pulse test: Pulse width ≤ 300µs. Duty cycle ≤ 2%.

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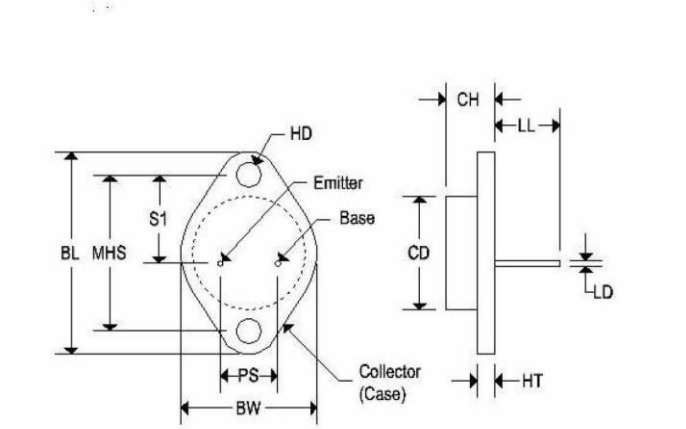
MECHANICAL CHARACTERISTICS

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