DIGITRON Semiconductors

High-reliability discrete products
and engineering services since 1977

BUX82-BUX83

NPN HIGH VOLTAGE 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	BUX82	BUX83	Unit
Collector-Emitter Voltage	V_{CES}	800	1000	V
Collector-Emitter Voltage	V_{CEO}	400	450	V
Collector-Emitter Voltage (R_{BE} = 50Ω)	V_{CEX}	500	500	V
Emitter-Base Voltage	V_{EBO}	10		V
Collector Current – continuous **Peak**	I_C I_{CM}	6 8		A
Base Current - continuous **Peak**	I_B I_{BM}	2 3		A
Total Power Dissipation @ T_C = 25°C @ T_C = 25°C	P_D	75		W
Junction and Storage Temperature Range	T_J, T_{stg}	-65 to +150		°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.65		°C/W

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

Characteristic		Symbol	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage (I_B = 0, I_C = 100mA, L = 25mH)	BUX82 BUX83	$V_{(BR)CEO}$	400 450	- -	- -	V
Collector-Emitter Breakdown Voltage (I_C = 100mA, R_{BE} = 100Ω, L = 15mH)	BUX82 BUX83	$V_{(BR)CER}$	500 500	- -	- -	V
Collector-Emitter Saturation Voltage (I_C = 4A, I_B = 1.25A)	BUX82 BUX83	$V_{CE(sat)}$	- -	- -	3.0 1.6	V
Collector-Emitter Saturation Voltage (I_C = 2.5A, I_B = 0.5A)	BUX82 BUX83	$V_{CE(sat)}$	- -	- -	1.5 1.4	V
Collector-Base Saturation Voltage (I_C = 4.0A, I_B = 1.25A)		$V_{CE(sat)}$	-	-	1.6	V
Collector-Emitter Saturation Voltage (I_C =2.5A, I_B = 0.5A)		$V_{CE(sat)}$	-	-	1.4	V
Collector Cutoff Current (V_{CES} = 800V, $V_{BE(off)}$ = 1.5V) (V_{CES} = 800V, $V_{BE(off)}$ = 1.5V, T_C = 125°)	BUX82	I_{CES}	- -	- -	1.0 2.0	mA
Collector Cutoff Current (V_{CES} = 1000V, $V_{BE(off)}$ = 1.5V) (V_{CES} = 1000V, $V_{BE(off)}$ = 1.5V, T_C = 125°)	BUX83	I_{CES}	- -	- -	1.0 2.0	mA
Emitter Cutoff Current (V_{EB} = 10V, I_C = 0)		I_{EBO}	-	-	10	mA
DC Current Gain I_C = 1.2A, V_{CE} = 5V		h_{fe}	-	30	-	mA
Output Capacitance (V_{CB} = 10V, I_E = 0, f_{test} = 1MHz		C_{ob}	-	-	500	pF
Current Gain – Bandwidth Product (I_C = 0.2A, V_{CE} = 10V, f_{test} = 1MHz)		f_T	-	6.0	-	pF

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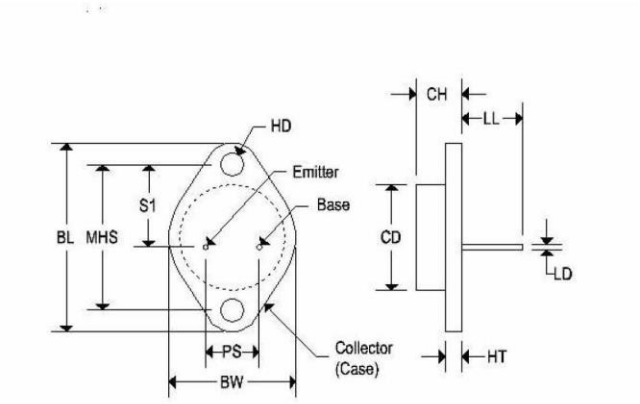
Characteristic		Symbol	Min	Typ	Max	Unit
SWITCHING TIMES						
Turn-On Time	I_C = 2.5A, I_{B1} = 0.5A, I_{B2} = -1A, V_{CC} = 250V	t_{on}	-	0.3	0.5	µs
Storage Time		t_s	-	2.0	3.5	
Fall Time		t_f	-	0.3	-	

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