DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

BUV20

SILICON NPN HIGH CURRENT 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

Parameter	Symbol	Value	Unit
Collector-base voltage (I_E = 0)	V_{CBO}	160	V
Collector-emitter voltage (R_{BE} = 100Ω)	V_{CER}	150	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	I_C	50	A
Collector peak current	I_{CM}	60	A
Base current	I_B	10	A
Total dissipation @ T_C < 25°C	P_D	250	W
Maximum operating and storage temperature range	$T_{J, Tstg}$	-65 to +200	°C
Maximum thermal resistance junction to case	$R_{thj\text{-}case}$	0.7	°C/W

ELECTRICAL CHARACTERISTICS T_C = 25°C unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector cutoff current at reverse bias (V_{BE} = -1.5)	I_{CEX}	V_{CE} = 160V V_{CE} = 160V, T_C = 125°C	- -	- -	3 12	mA
Collector emitter cutoff current (I_B = 0)	I_{CEO}	V_{CE} = 100V	-	-	3.0	mA
Emitter cutoff current (I_C = 0)	I_{EBO}	V_{EB} = 5V	-	-	1.0	mA
Collector emitter sustaining voltage (I_B = 0) (1)	$V_{CEO(sus)}$	I_C = 200mA, L = 25mH	125	-	-	V
Emitter base breakdown voltage (I_C = 0) (1)	$V_{BR(CEO)}$	I_E = 50mA	7	-	-	V
Collector emitter saturation voltage(1)	$V_{CE(sat)}$	I_C = 25A, I_B = 2.5A I_C = 50A, I_B = 5.0A	- -	0.3 0.7	0.6 1.2	V
Base emitter saturation voltage(1)	$V_{BE(sat)}$	I_C = 50A, I_B = 5.0A	-	1.4	2.0	V
DC current gain(1)	h_{FE}	I_C = 25A, V_{CE} = 2V I_C = 50A, V_{CE} = 4V	20 10	- -	60 -	-
Transition frequency	f_T	V_{CE} = 15V, I_C = 2A, f = 4MHz	8.0	-	-	MHz
Turn-on time	t_{on}	I_C = 50A, I_{B1} = I_{B2} = 5.0	-	-	1.5	µs
Turn-off time	t_{off}		-	-	0.3	
Fall time	t_f		-	-	1.2	

Note 1: Pulsed: Pulse duration = 300µs, duty cycle ≤ 2%.

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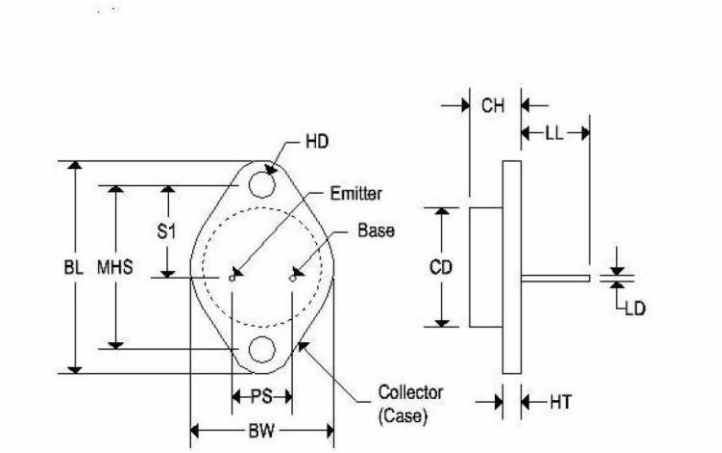
MECHANICAL CHARACTERISTICS

Case:	TO-3
Marking:	Alpha-numeric
Pin out:	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