

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

Rating	Symbol	2N5838	2N5839	2N5840	Units
Collector-base voltage	V_{CBO}	275	300	375	V
Collector-emitter sustaining voltage	$V_{CEO(SUS)}$	250	275	350	V
Emitter base voltage	V_{EBO}	6			V
Collector current – continuous	I_C	3			A
Collector current – peak	I_C	5			A
Base current – continuous	I_B	1.5			A
Total power dissipation $T_C = 25^\circ\text{C}$, $V_{CE} \leq 40\text{V}$	P_D	100			W
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +200			$^\circ\text{C}$
Thermal resistance, junction to case	R_{thj-c}	1.75			$^\circ\text{C}/\text{W}$

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

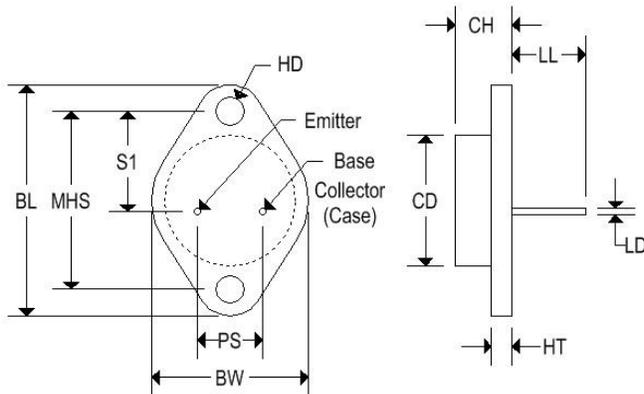
Characteristic	Symbol	2N5838		2N5839		2N5840		Unit		
		Min	Max	Min	Max	Min	Max			
Collector sustaining voltage $I_C = 0.1\text{A}$, $I_B = 0$	$V_{CEO(SUS)}$	250	-	275	-	-	-	V		
Collector emitter saturation voltage ($I_C = 2\text{A}$, $I_B = 0.4\text{A}$)	$V_{CE(sat)}$	-	0.8	-	0.8	-	0.8	V		
Base emitter saturation voltage ($I_C = 2\text{A}$, $I_B = 0.4\text{A}$)	$V_{BE(sat)}$	-	1.5	-	1.5	-	1.5	V		
Collector cutoff current ($V_{CE} = \text{Rated } V_{CBO}$, $I_E = 0$)	I_{CBO}	-	1.0	-	1.0	-	1.0	mA		
Collector cutoff current ($V_{CE} = \text{Rated } V_{CEO}$, $V_{BE(off)} = 1.5\text{V}$)	I_{CEV}	-	1.0	-	1.0	-	1.0	mA		
Emitter cutoff current ($I_C = 0$, $V_{EB} = 5.0\text{V}$)	I_{EBO}	-	1.0	-	1.0	-	1.0	mA		
DC current gain ($I_C = 3.0\text{A}$, $V_{CE} = 3.0\text{V}$) ($I_C = 2\text{A}$, $V_{CE} = 3.0\text{V}$)	h_{FE}	2N5838 2N5839, 2N5840		8	40	10	50	10	50	-
Transition frequency ($I_C = 1.0\text{A}$, $V_{CE} = 10\text{V}$, $f = 1.0\text{MHz}$)	f_T	5	-	5	-	5	-	MHz		

2N5838-2N5840

NPN SILICON POWER TRANSISTORS

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