

FEATURES:

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number
- Available Non-RoHS (standard) or RoHS compliant (add PBF suffix)

MAXIMUM RATINGS

Ratings	Symbol	2N6338	2N6339	2N6340	2N6341	Unit
Collector-Base Voltage	V_{CBO}	120	140	160	180	V
Collector-Emitter Voltage	V_{CEO}	100	120	1440	150	V
Emitter-Base Voltage	V_{EBO}	6				V
Collector Current	I_C	25				A
Base Current	I_B	10				A
Total Power Dissipation @ $T_c = 25^\circ\text{C}$ Derate above 25°C	P_D	200				W
		1.14				W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +200				$^\circ\text{C}$
Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.875				$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS @ 25°C unless otherwise noted

Characteristic	Symbol	Min	Max	Unit	
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage ⁽¹⁾ ($I_C = 50\text{ mA}, I_B = 0$)	2N6338 2N6339 2N6340 2N6341	$V_{CEO(sus)}$	100 120 140 150	- - - -	V
Collector Cutoff Current ($V_{CE} = 50\text{ V}, I_B = 0$)	2N6338	I_{CEO}	-	50	μA
($V_{CE} = 60\text{ V}, I_B = 0$)	2N6339		-	50	
($V_{CE} = 70\text{ V}, I_B = 0$)	2N6340		-	50	
($V_{CE} = 75\text{ V}, I_B = 0$)	2N6341		-	50	
Collector Cutoff Current ($V_{CB} = \text{Rated } V_{CB}, I_E = 0$)		I_{CBO}	-	10	μA
Emitter Cutoff Current ($V_{BE} = 6.0\text{ V}, I_C = 0$)		I_{EBO}	-	100	μA
ON CHARACTERISTICS⁽¹⁾					
DC Current Gain ($I_C = 0.5\text{ A}, V_{CE} = 2.0\text{ V}$) ($I_C = 10\text{ A}, V_{CE} = 2.0\text{ V}$) ($I_C = 25\text{ A}, V_{CE} = 2.0\text{ V}$)		h_{fe}	50 30 12	- 120 -	-
Collector-Emitter Saturation Voltage ($I_C = 10\text{ A}, I_B = 1.0\text{ A}$) ($I_C = 25\text{ A}, I_B = 2.5\text{ A}$)		$V_{CE(sat)}$	- -	1.0 1.8	V
Base-Emitter Saturation Voltage ($I_C = 10\text{ A}, I_B = 1.0\text{ A}$) ($I_C = 25\text{ A}, I_B = 2.5\text{ A}$)		$V_{BE(sat)}$	- -	1.8 2.5	V
Base-Emitter On Voltage ($I_C = 10\text{ A}, V_{CE} = 2.0\text{ V}$)		$V_{BE(on)}$	-	1.8	V

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NPN SILICON POWER TRANSISTORS

DYNAMIC CHARACTERISTICS				
Current Gain–Bandwidth Product⁽²⁾ ($I_C = 1.0A$, $V_{CE} = 10V$, $f_{test} = 10MHz$)	f_T	40	-	MHz
Output Capacitance ($V_{CB} = 10V$, $I_E = 0$, $f = 1.0MHz$)	C_{ob}	-	300	pF
SWITCHING CHARACTERISTICS				
Rise Time ($V_{CC} = 80V$, $I_C = 10A$, $I_{B1} = -I_{B2} = 1.0A$, $V_{BE(off)} = -6.0V$)	t_r	-	0.4	us
Storage Time ($V_{CC} \approx 80V$, $I_C = 10A$, $I_{B1} = I_{B2} = 1.0A$)	t_s	-	1.5	us
Fall Time ($V_{CC} \approx 80V$, $I_C = 10A$, $I_{B1} = I_{B2} = 1.0A$)	t_f	-	0.6	us

Note 1: Pulse test = 300 μ s, Duty Cycle \leq 2%.

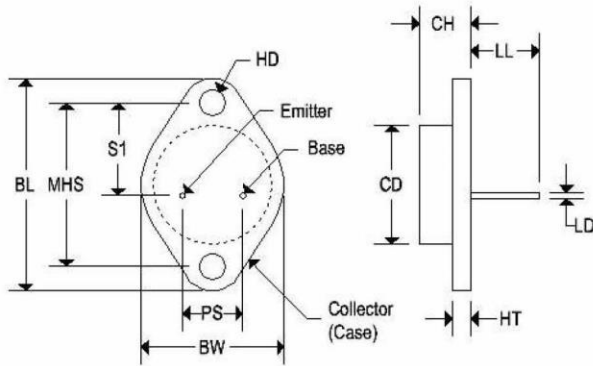
Note 2: $f_T = |h_{fe}| * f_{test}$.

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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

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FIGURE -1 POWER DERATING

