DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N6282-2N6284(NPN)
2N6285-2N6287 (PNP)

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

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	2N6282 2N6285	2N6283 2N6286	2N6284 2N6287	Units
Collector-emitter voltage	V_{CEO}	60	80	100	V
Collector-base voltage	V_{CBO}	60	80	100	V
Emitter base voltage	V_{EBO}	5.0			V
Collector current – continuous	I_C	20			A
Collector current – peak	I_C	40			A
Base current	I_B	0.5			A
Total power dissipation T_C = 25°C **Derate above 25°C**	P_D	160 0.915			W W/°C
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +200			°C
Thermal resistance, junction to case	R_{thj-c}	1.090			°C/W

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-emitter sustaining voltage [1] (I_B = 0, I_C = 100mA)	2N6282, 2N6285 2N6283, 2N6286 2N6284, 2N6287	$V_{CEO(sus)}$	60 80 100	- - -	V
Collector cutoff current (V_{CE} = 30V, I_B = 0) (V_{CE} = 40V, I_B = 0) (V_{CE} = 50V, I_B = 0)	 2N6282, 2N6285 2N6283, 2N6286 2N6284, 2N6287	I_{CEO}	 - - -	 1.0 1.0 1.0	mA
Collector cutoff current (V_{CE} = 60V, $V_{BE(off)}$ = 1.5V) (V_{CE} = 80V, $V_{BE(off)}$ = 1.5V) (V_{CE} = 100V, $V_{BE(off)}$ = 1.5V) (V_{CE} = 60V, $V_{BE(off)}$ = 1.5V, T_J = 150°C) (V_{CE} = 80V, $V_{BE(off)}$ = 1.5V, T_J = 150°C) (V_{CE} = 100V, $V_{BE(off)}$ = 1.5V, T_J = 150°C)	 2N6282, 2N6285 2N6283, 2N6286 2N6284, 2N6287 2N6282, 2N6285 2N6283, 2N6286 2N6284, 2N6287	I_{CEX}	 - - - - - -	 0.5 0.5 0.5 5.0 5.0 5.0	mA
Emitter cutoff current (I_C = 0, V_{EB} = 5.0V)		I_{EBO}	-	2.0	mA

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

Characteristic		Symbol	Min	Max	Unit
ON CHARACTERISTICS [1]					
DC current gain (I_C = 10A, V_{CE} = 3.0V) (I_C = 20A, V_{CE} = 3.0V)		h_{FE}	 750 100	 18000 -	-
Collector emitter saturation voltage (I_C = 10A, I_B = 40mA) (I_C = 20A, I_B = 200mA)		$V_{CE(sat)}$	 - -	 2.0 3.0	V
Base emitter saturation voltage (I_C = 20A, I_B = 200mA)		$V_{BE(sat)}$	-	4.0	V
Base emitter on voltage (I_C = 10A, V_{CE} = 3.0V)		$V_{BE(ON)}$	-	2.8	V
DYNAMIC CHARACTERISTICS					
Output capacitance (V_{CB} = 10V, I_E = 0, f = 1.0MHz)	2N6282, 83, 84 2N6285, 86, 87	C_{ob}	- -	400 600	pF
Small signal current gain (I_C = 10A, V_{CE} = 3.0V, f = 1.0kHz)		h_{fe}	300	-	-

Note 1: Pulse test: pulse width ≤ 300µs, duty cycle ≤ 2.0%.

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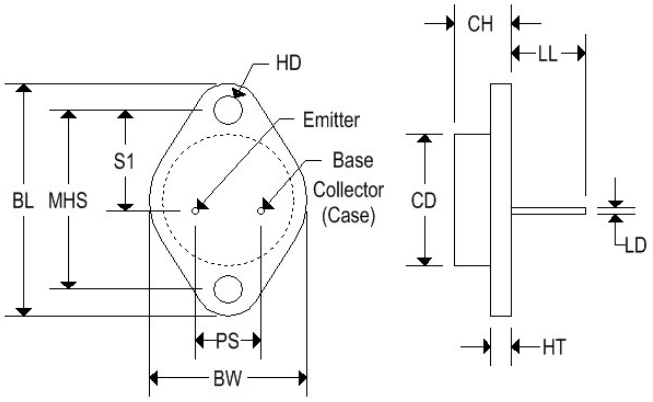
MECHANICAL CHARACTERISTICS

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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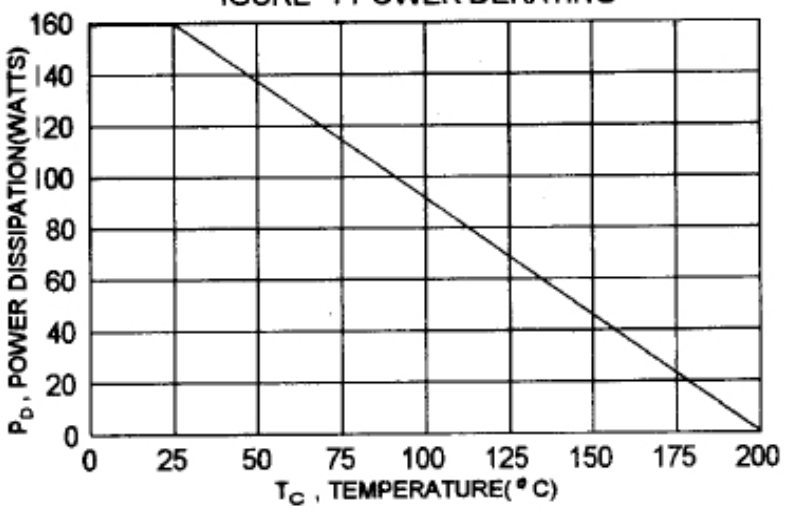
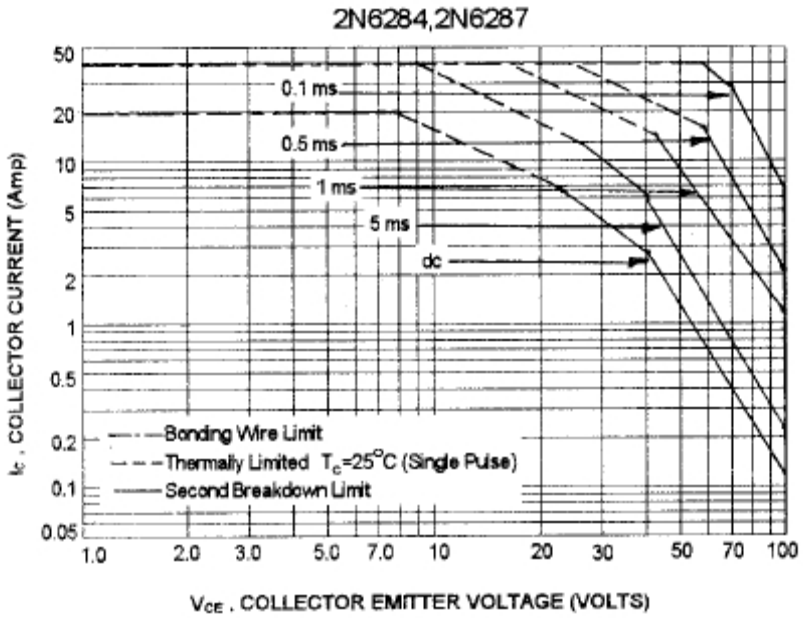
FIGURE -1 POWER DERATING





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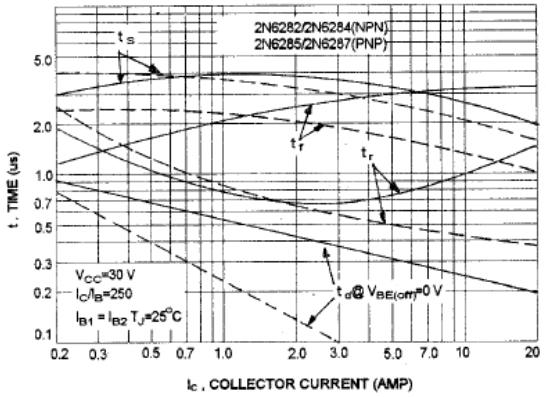
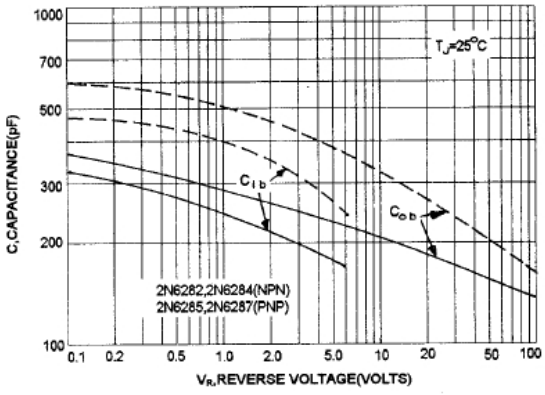
SWITCHING TIME

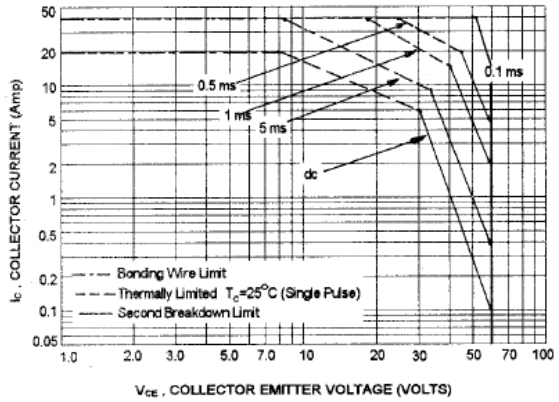


CAPACITANCES



ACTIVE-REGION SAFE OPERATING AREA (SOA)

2N6282,2N6285



2N6283,2N6286