DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N4901-2N4903 – PNP
2N5067-2N5069 - NPN

COMPLEMENTARY SILICON POWER 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	2N4901 2N5067	2N4902 2N5068	2N4903 2N5069	Unit
Collector-base voltage	V_{CBO}	40	60	80	Vdc
Collector-emitter voltage	V_{CEO}	40	60	80	Vdc
Emitter-base voltage	V_{EBO}	5.0			Vdc
Collector current – continuous **Peak**	I_C	5.0 10			Adc
Base current – continuous	I_B	1.0			Adc
Total device dissipation T_C = 25°C **Derate above 25°C**	P_D	87.5 0.5			Watts W/°C
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +200			°C
Thermal resistance, junction to case	$R_{\Theta JC}$	2.0			°C/W

ELECTRICAL CHARACTERSITICS (T_A = 25°C unless otherwise specified)

Characteristics		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector emitter sustaining voltage (I_C = 200mAdc, I_B = 0)	2N4901, 2N5067 2N4902, 2N5068 2N4903, 2N5069	$V_{CEO(sus)}$	40 60 80	- - -	Vdc
Collector cutoff current (V_{CE} = Rated V_{CEO}, I_B = 0)		I_{CEO}	-	1.0	mAdc
Collector cutoff current (V_{CE} = Rated V_{CEO}, $V_{BE(off)}$ = 1.5Vdc) (V_{CE} = Rated V_{CEO}, $V_{BE(off)}$ = 1.5Vdc, T_C = 150°C)		I_{CEX}	- -	0.1 2.0	mAdc
Collector cutoff current (V_{CB} = Rated V_{CB}, I_E = 0)		I_{CBO}	-	0.1	mAdc
Emitter cutoff current (V_{EB} = 5.0Vdc, I_C = 0)		I_{EBO}	-	1.0	mAdc
ON CHARACTERISTICS(1)					
DC current gain (I_C = 1.0Adc, V_{CE} = 2.0Vdc) (I_C = 5.0Adc, V_{CE} = 2.0Vdc)		h_{FE}	20 7.0	80 -	-
Collector emitter saturation voltage (I_C = 1.0Adc, I_B = 0.1Adc) (I_C =5.0Adc, I_B = 1.0Adc)		$V_{CE(sat)}$	- -	0.4 1.5	Vdc
Base emitter on-voltage (I_C = 1.0Adc, V_{CE} = 2.0Adc)		$V_{BE(sat)}$	-	1.2	Vdc

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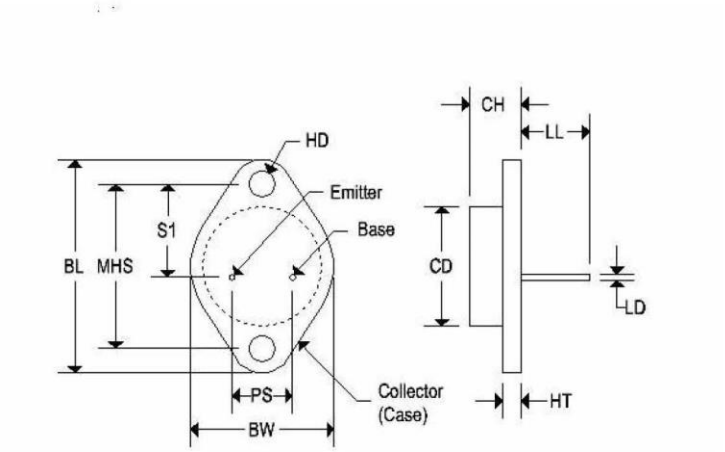
ELECTRICAL CHARACTERSITICS (T_A = 25°C unless otherwise specified)

Characteristics	Symbol	Min	Max	Unit
DYNAMIC CHARACTERISTICS				
Current gain – bandwidth product [2] (I_C = 1.0Adc, V_{CE} = 10Vdc, f = 1.0MHz)	f_T	4.0	-	MHz
Small signal current gain (I_C = 0.5Adc, V_{CE} = 10Vdc, f = 1.0kHz)	h_{fe}	20	-	-

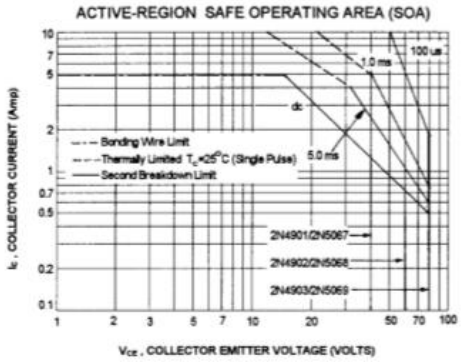
Note 1: Pulse test: Pulse width = 300µs, Duty cycle ≤ 2.0%
Note 2: $f_T = |h_{fe}| \cdot f_{test}$

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



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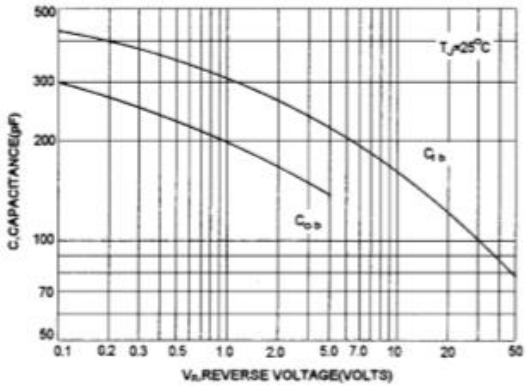
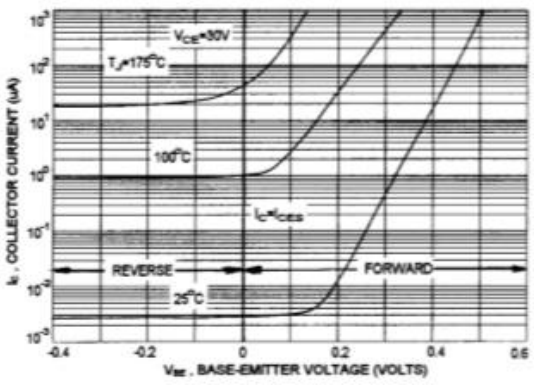
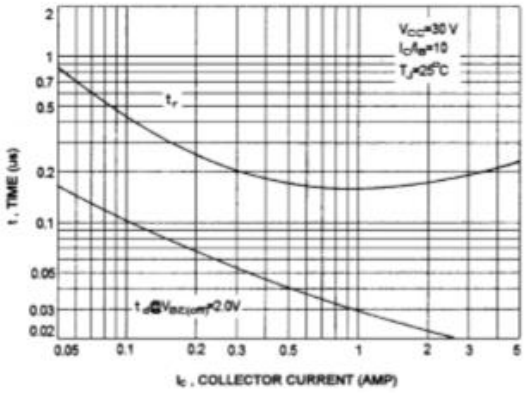
CAPACITANCES



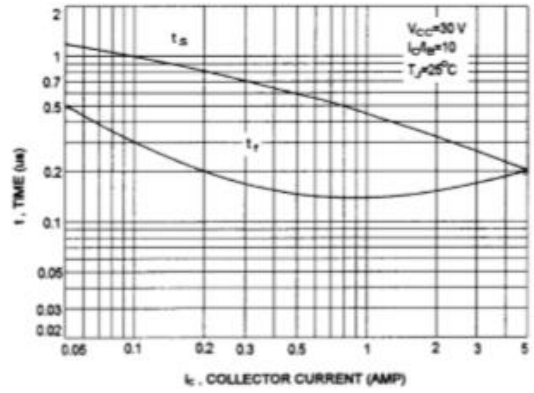
COLLECTOR CUT-OFF REGION



TURN-ON TIME



TURN-OFF TIME



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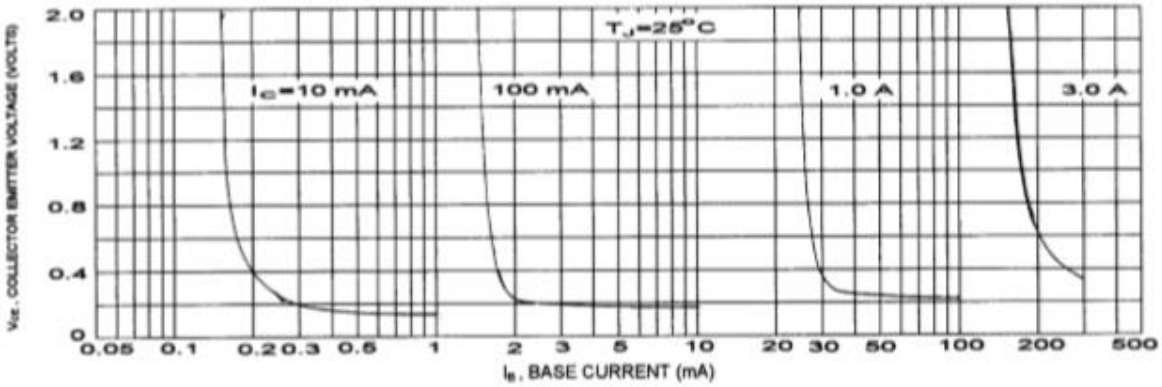
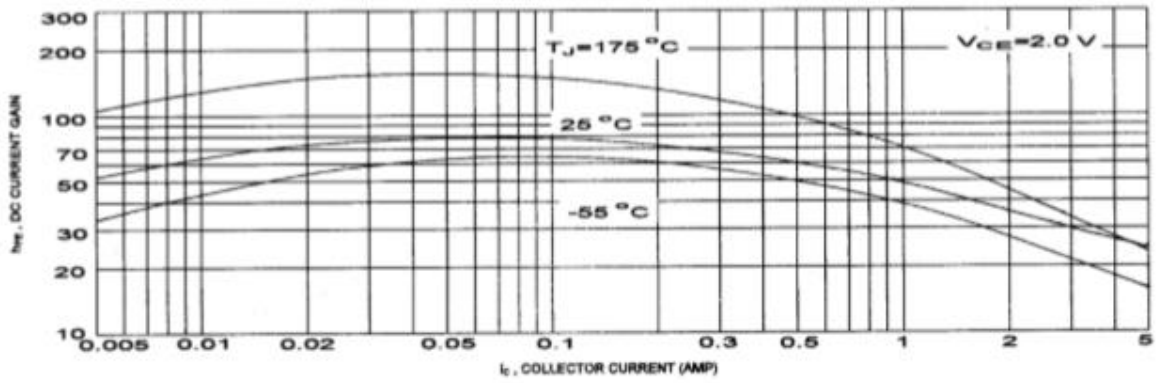
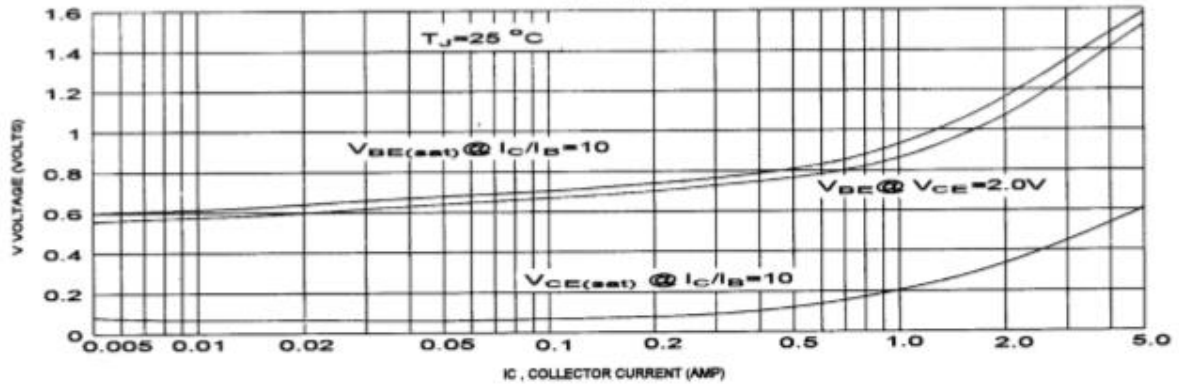
COLLECTOR SATURATION REGION



DC CURRENT GAIN



"ON" VOLTAGE



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