DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N6569

NPN 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

Characteristic	Symbol	2N6569	Unit
Collector-Emitter Voltage	V_{CEO}	40	V
Collector-Emitter Voltage	V_{CBO}	45	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current – continuous **Peak**	I_C I_{CM}	12 24	A
Emitter Current -continuous **Peak**	I_E I_{EM}	17 34	A
Total Power Dissipation @ T_C = 25°C **Derate Above 25°C**	P_D	100 0.572	W W/°C
Operating and Storage Temperature Range	T_J, T_{stg}	-65 to +200	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.75	°C/W

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

Characteristic		Symbol	Min	Max	Unit
Collector-Emitter Sustaining Voltage[1] (I_C = 100mA, I_B = 0)		$V_{CEO(sus)}$	40	-	V
Collector Cutoff Current (V_{CEO} = 40V, I_B = 0)		I_{CEO}	-	1.0	mA
Collector Cutoff Current (V_{CBO} = 45V, I_E = 0)		I_{CBO}	-	1.0	mA
DC Current Gain[1] (I_C = 4.0A, V_{CE} = 3.0V) (I_C = 12A, V_{CE} = 4.0V)		h_{FE}	15 5.0	200 100	-
Collector-Emitter Saturation Voltage[1] (I_C = 4.0A, I_B = 0.4A) (I_C = 12A, I_B = 2.4A)		$V_{CE(sat)}$	- -	1.5 4.0	V
Base-Emitter Saturation Voltage[1] (I_C = 4.0A, I_B = 0.4A)		$V_{BE(sat)}$	-	2.0	V
Current Gain – Bandwidth Product[2] (I_C = 1.0A, V_{CE} = 4.0V, f = 0.5MHz)		F_T	1.5	20	V
Delay Time	V_{CC} = 30V, I_C = 2.0A, I_{B1} = -I_{B2} = 0.2A, t_p = 25µs, duty cycle ≤ 2.0%	t_d	-	0.4	µs
Rise Time		t_r	-	1.5	
Storage Time		t_s	-	5.0	
Fall Time		t_f	-	1.5	

Note 1: Pulse Test: Pulse width = 300µs. Duty cycle ≤ 2.0%.
Note 2: $f_T = |h_{fe}| * f_{test}$

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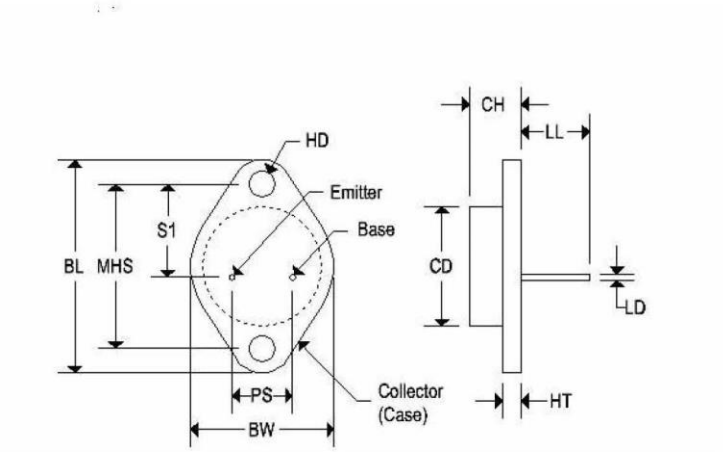
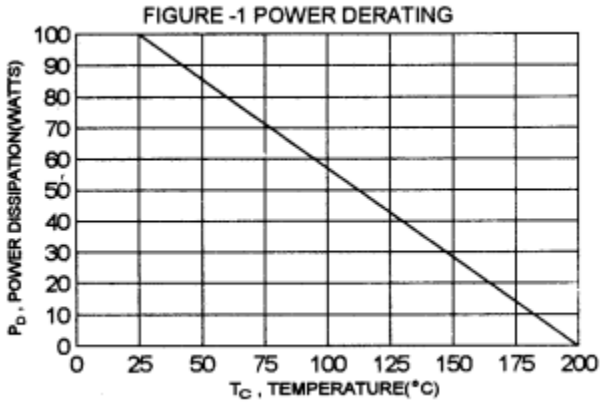
MECHANICAL CHARACTERISTICS

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

FIGURE -1 POWER DERATING



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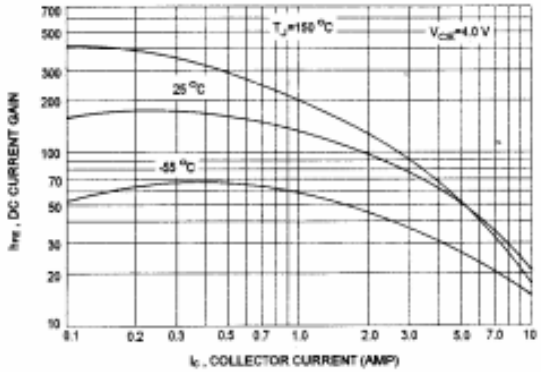
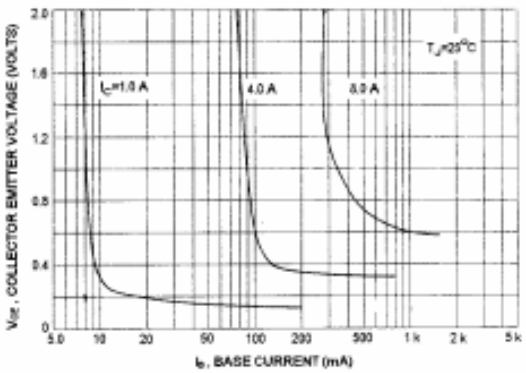
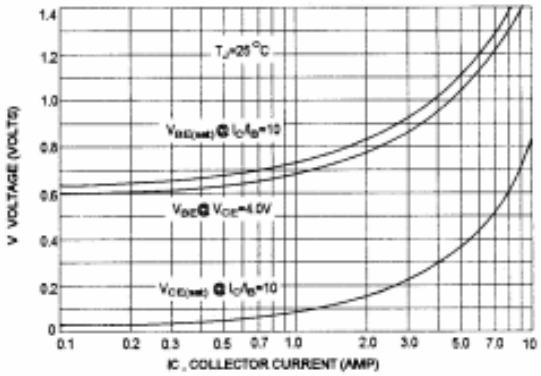
DC CURRENT GAIN



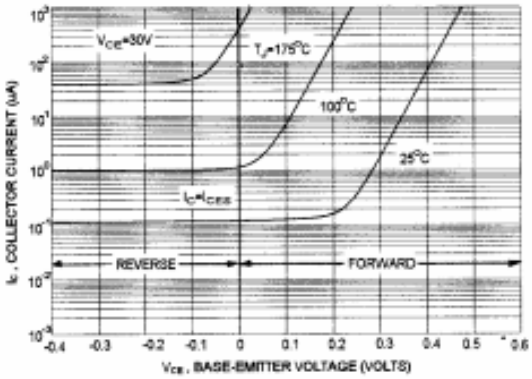
COLLECTOR SATURATION REGION



"ON"VOLTAGES



COLLECTOR CUT-OFF REGION



ACTIVE-REGION SAFE OPERATING AREA (SOA)