

NPN 2N3773*, PNP 2N6609

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS (Note 3)

Collector-Emitter Breakdown Voltage (Note 4) (I _C = 0.2 Adc, I _B = 0)	V _{CEO(sus)}	140	–	Vdc
Collector-Emitter Sustaining Voltage (Note 4) (I _C = 0.1 Adc, V _{BE(off)} = 1.5 Vdc, R _{BE} = 100 Ohms)	V _{CEX(sus)}	160	–	Vdc
Collector-Emitter Sustaining Voltage (I _C = 0.2 Adc, R _{BE} = 100 Ohms)	V _{CER(sus)}	150	–	Vdc
Collector Cutoff Current (Note 4) (V _{CE} = 120 Vdc, I _B = 0)	I _{CEO}	–	10	mAdc
Collector Cutoff Current (Note 4) (V _{CE} = 140 Vdc, V _{BE(off)} = 1.5 Vdc) (V _{CE} = 140 Vdc, V _{BE(off)} = 1.5 Vdc, T _C = 150°C)	I _{CEX}	– –	2 10	mAdc
Collector Cutoff Current (V _{CB} = 140 Vdc, I _E = 0)	I _{CBO}	–	2	mAdc
Emitter Cutoff Current (Note 4) (V _{BE} = 7 Vdc, I _C = 0)	I _{EBO}	–	5	mAdc

ON CHARACTERISTICS (Note 3)

DC Current Gain (I _C = 8 Adc, V _{CE} = 4 Vdc) (Note 4) (I _C = 16 Adc, V _{CE} = 4 Vdc)	h _{FE}	15 5	60 –	–
Collector-Emitter Saturation Voltage (I _C = 8 Adc, I _B = 800 mAdc) (Note 4) (I _C = 16 Adc, I _B = 3.2 Adc)	V _{CE(sat)}	– –	1.4 4	Vdc
Base-Emitter On Voltage (Note 4) (I _C = 8 Adc, V _{CE} = 4 Vdc)	V _{BE(on)}	—	2.2	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common-Emitter Small-Signal, Short-Circuit, Forward Current Transfer Ratio (I _C = 1 A, f = 50 kHz)	h _{fe}	4	–	–
Small-Signal Current Gain (Note 4) (I _C = 1 Adc, V _{CE} = 4 Vdc, f = 1 kHz)	h _{fe}	40	–	–

SECOND BREAKDOWN CHARACTERISTICS

Second Breakdown Collector Current with Base Forward Biased t = 1 s (non-repetitive), V _{CE} = 100 V, See Figure 12	I _{S/b}	1.5	–	Adc
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3. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2%.

4. Indicates JEDEC Registered Data.

ORDERING INFORMATION

Device	Package	Shipping [†]
2N3773	TO-204	100 Unit / Tray
2N3773G	TO-204 (Pb-Free)	100 Unit / Tray
2N6609	TO-204	100 Unit / Tray

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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NPN

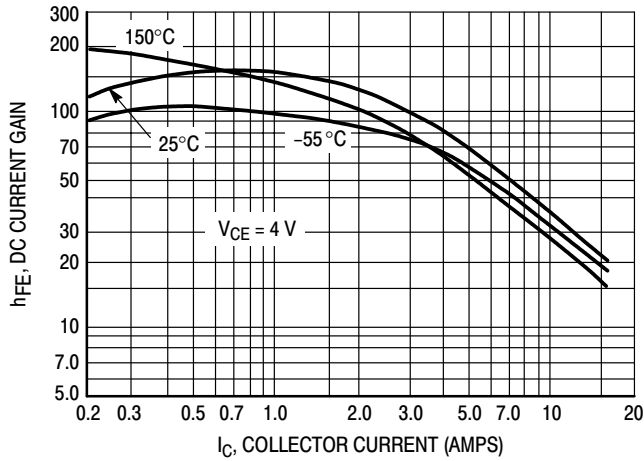


Figure 1. DC Current Gain

PNP

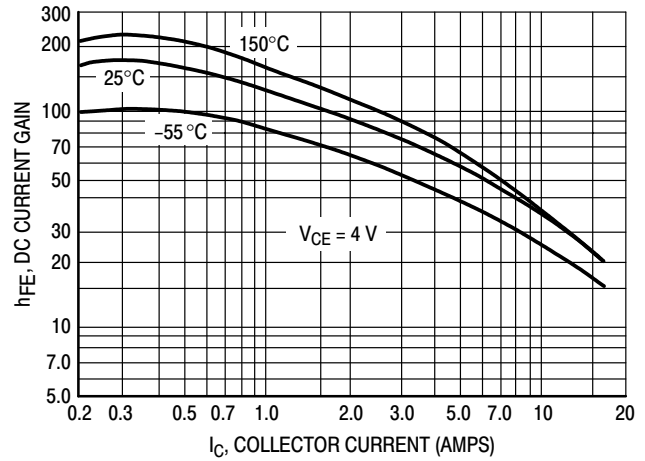


Figure 2. DC Current Gain

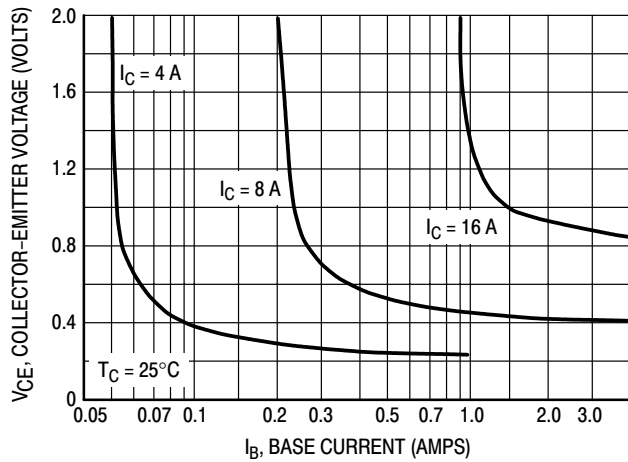


Figure 3. Collector Saturation Region

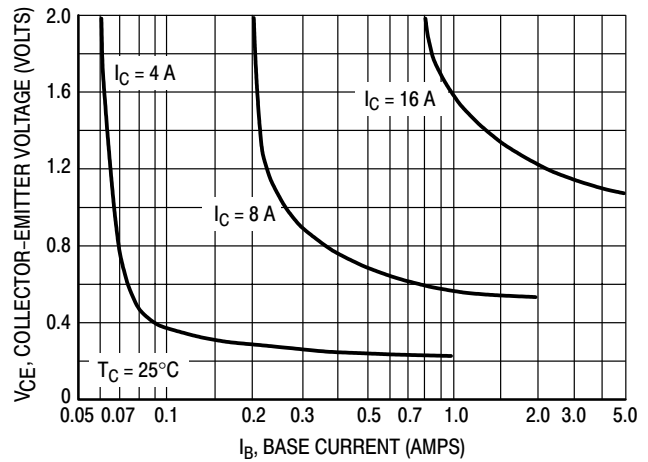


Figure 4. Collector Saturation Region

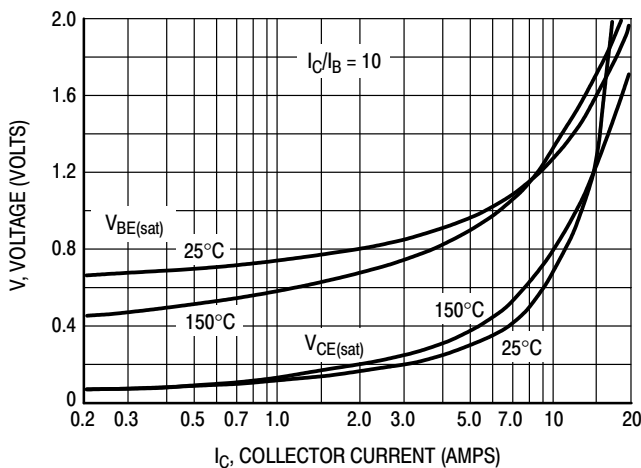


Figure 5. "On" Voltage

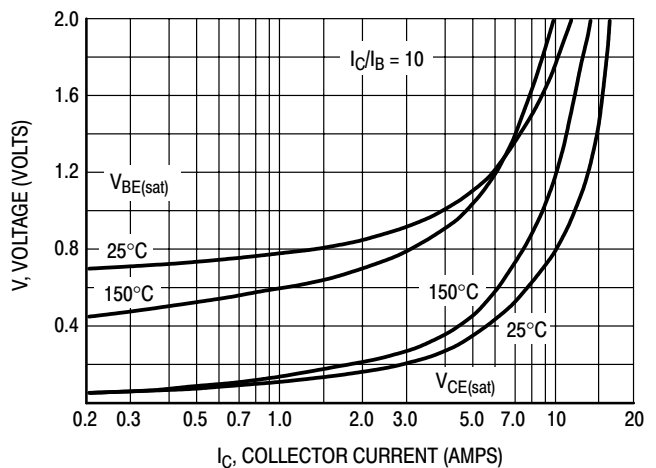


Figure 6. "On" Voltage

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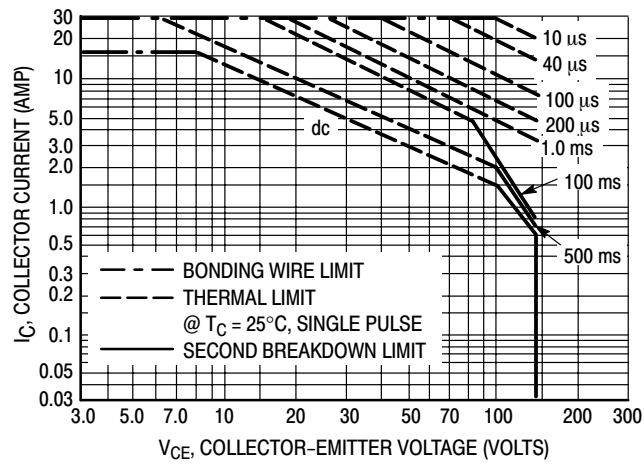


Figure 7. Forward Bias Safe Operating Area

There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate $I_C - V_{CE}$ limits of the transistor that must be observed for reliable operation: i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The data of Figure 7 is based on $T_{J(pk)} = 200^\circ\text{C}$; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(pk)} < 200^\circ\text{C}$. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

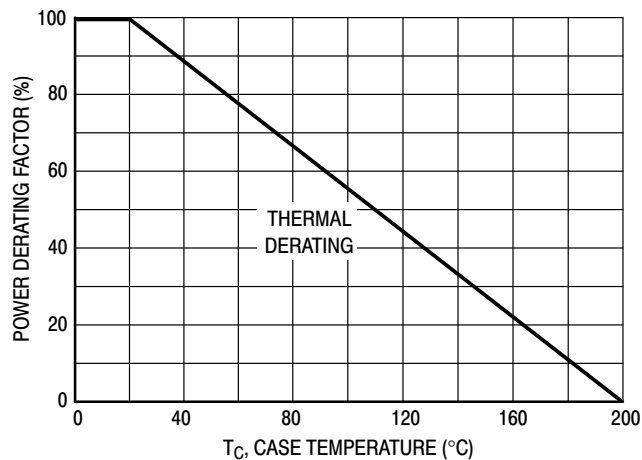
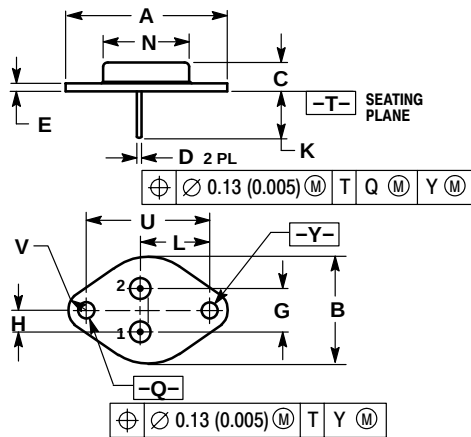


Figure 8. Power Derating

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PACKAGE DIMENSIONS

TO-204 (TO-3)
CASE 1-07
ISSUE Z



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. ALL RULES AND NOTES ASSOCIATED WITH REFERENCED TO-204AA OUTLINE SHALL APPLY.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.550 REF		39.37 REF	
B	---	1.050	---	26.67
C	0.250	0.335	6.35	8.51
D	0.038	0.043	0.97	1.09
E	0.055	0.070	1.40	1.77
G	0.430 BSC		10.92 BSC	
H	0.215 BSC		5.46 BSC	
K	0.440	0.480	11.18	12.19
L	0.665 BSC		16.89 BSC	
N	---	0.830	---	21.08
Q	0.151	0.165	3.84	4.19
U	1.187 BSC		30.15 BSC	
V	0.131	0.188	3.33	4.77

STYLE 1:
PIN 1: BASE
2: EMITTER
CASE: COLLECTOR

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