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by MJ15018/D

MJ15015, MJ15016
(See 2N3055A)

Advance Information

Complementary Silicon Power Transistors

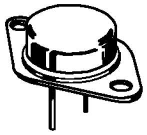
. . . designed for use as high frequency drivers in Audio Amplifiers.

- High Gain Complementary Silicon Power Transistors
- Safe Operating Area 100% Tested
  50 V, 3.0 A, 1.0 Sec.
- Excellent Frequency Response — f_T = 20 MHz min.

NPN
MJ15018
MJ15020*
PNP
MJ15019
MJ15021*

*Motorola Preferred Device

4.0 AMPERES
COMPLEMENTARY
SILICON
POWER TRANSISTORS
200 AND 250 VOLTS
150 WATTS



CASE 1–07
TO–204AA
(TO–3)

MAXIMUM RATINGS

Rating	Symbol	MJ15018 MJ15019	MJ15020 MJ15021	Unit
Collector–Emitter Voltage	V_{CEO}	200	250	Vdc
Collector–Base Voltage	V_{CBO}	200	250	Vdc
Emitter–Base Voltage	V_{EBO}	7.0		Vdc
Collector Current — Continuous	I_C	4.0		Adc
Base Current — Continuous	I_B	2.0		Adc
Emitter Current — Continuous	I_E	6.0		Adc
Total Power Dissipation @ T_C = 25°C Derate above 25°C	P_D	150 0.86		Watts W/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.17	°C/W

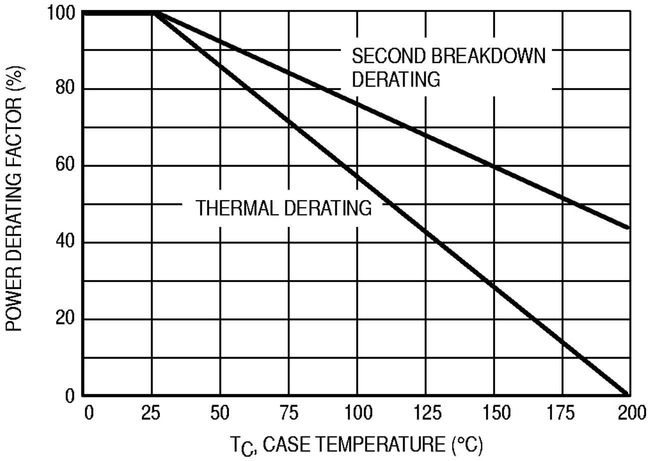


Figure 1. Power Derating

This document contains information on a new product. Specifications and information herein are subject to change without notice.

Preferred devices are Motorola recommended choices for future use and best overall value.

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Sustaining Voltage (1) (I_C = 100 mAdc, I_B = 0)	 MJ15018, MJ15019 MJ15020, MJ15021	$V_{CEO(sus)}$	 200 250	 — —	Vdc
Collector Cutoff Current (V_{CE} = 150 Vdc, I_B = 0) (V_{CE} = 200 Vdc, I_B = 0)	 MJ15018, MJ15019 MJ15020, MJ15021	I_{CEO}	 — —	 500 500	μAdc
Emitter Cutoff Current (V_{EB} = 7.0 Vdc, I_C = 0)		I_{EBO}	—	500	μAdc
SECOND BREAKDOWN					
Second Breakdown Collector Current with Base Forward–Biased (V_{CE} = 50 Vdc, t = 0.5 s (non–repetitive)		$I_{S/b}$	3.0	—	Adc
ON CHARACTERISTICS (1)					
DC Current Gain (I_C = 1.0 Adc, V_{CE} = 4.0 V) (I_C = 3.0 Adc, V_{CE} = 4.0 V)		h_{FE}	 30 10	 — —	
Collector–Emitter Saturation Voltage (I_C = 1.0 Adc, I_B = 0.1 Adc)		$V_{CE(sat)}$	—	1.0	Vdc
Base–Emitter on Voltage (I_C = 1.0 Adc, V_{CE} = 4.0 Vdc)		$V_{BE(on)}$	—	2.0	Vdc
DYNAMIC CHARACTERISTICS					
Current–Gain — Bandwidth Product (I_C = 0.5 Adc, V_{CE} = 10 Vdc, f_{test} = 1.0 MHz)		f_T	20	—	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, F_{test} = 1.0 MHz)		C_{ob}	—	500	pF

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%

TYPICAL DYNAMIC CHARACTERISTICS

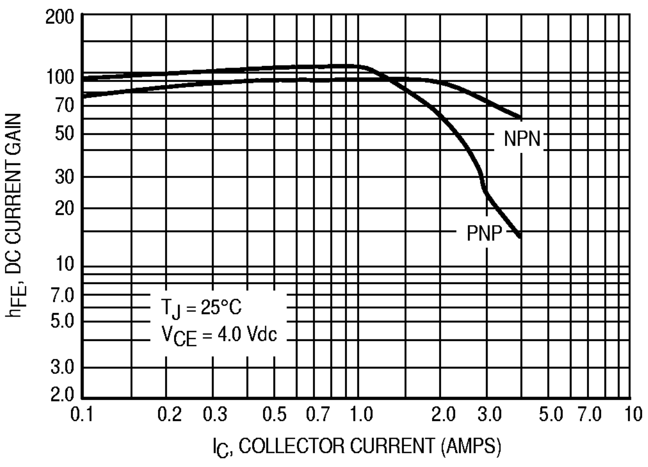


Figure 2. DC Current Gain

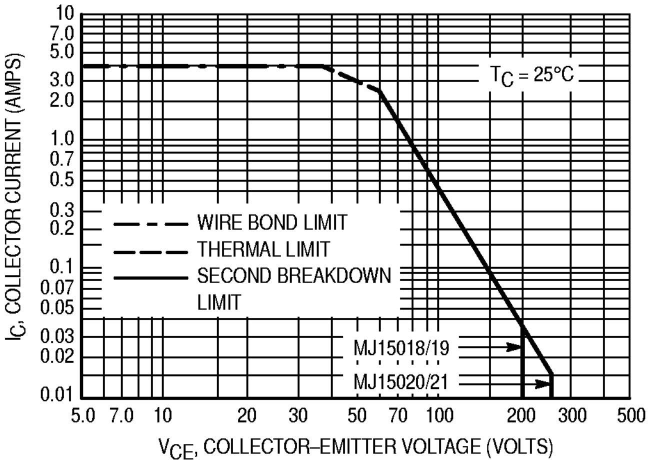
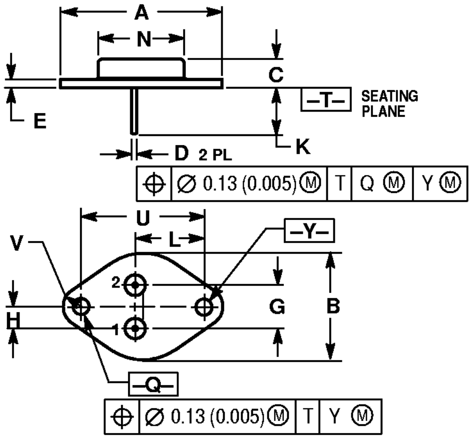


Figure 3. Maximum Rated Forward Biased Safe Operating Area

PACKAGE DIMENSIONS



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.

	INCHES		MILLIMETERS	
DIM	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

CASE 1–07
TO–204AA (TO–3)
ISSUE Z