NS2029M3T5G

PNP Silicon General Purpose Amplifier Transistor

This PNP transistor is designed for general purpose amplifier applications. This device is housed in the SOT-723 package which is designed for low power surface mount applications, where board space is at a premium.

- Reduces Board Space
- High h_{FE}, 210-460 (Typical)
- Low $V_{CE(sat)}$, < 0.5 V
- ESD Performance: Human Body Model; > 2000 V,
  Machine Model; > 200 V
- Available in 4 mm, 8000 Unit Tape & Reel
- This is a Pb-Free Device

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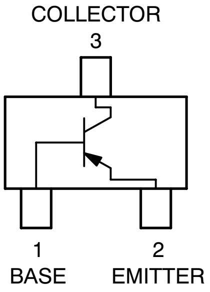
**PNP GENERAL
PURPOSE AMPLIFIER
TRANSISTORS
SURFACE MOUNT**



MAXIMUM RATINGS (T_A = 25°C)

Rating	Symbol	Value	Unit
Collector-Base Voltage	$V_{(BR)CBO}$	-60	Vdc
Collector-Emitter Voltage	$V_{(BR)CEO}$	-50	Vdc
Emitter-Base Voltage	$V_{(BR)EBO}$	-6.0	Vdc
Collector Current - Continuous	I_C	-100	mAdc

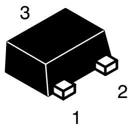
THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Power Dissipation (Note 1)	P_D	265	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 ~ +150	°C

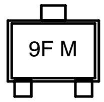
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Device mounted on a FR-4 glass epoxy printed circuit board using the minimum recommended footprint.

MARKING DIAGRAM



**SOT-723
CASE 631AA**



9F = Specific Device Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
NS2029M3T5G	SOT-723 (Pb-Free)	8000/Tape & Reel

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

May, 2007 - Rev. 0

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Characteristic	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage (I_C = -50 μAdc, I_E = 0)	$V_{(BR)CBO}$	-60	-	-	Vdc
Collector-Emitter Breakdown Voltage (I_C = -1.0 mAdc, I_B = 0)	$V_{(BR)CEO}$	-50	-	-	Vdc
Emitter-Base Breakdown Voltage (I_E = -50 μAdc, I_E = 0)	$V_{(BR)EBO}$	-6.0	-	-	Vdc
Collector-Base Cutoff Current (V_{CB} = -30 Vdc, I_E = 0)	I_{CBO}	-	-	-0.5	nA
Emitter-Base Cutoff Current (V_{EB} = -7.0 Vdc, I_B = 0)	I_{EBO}	-	-	-0.1	μA
Collector-Emitter Saturation Voltage (Note 2) (I_C = -50 mAdc, I_B = -5.0 mAdc)	$V_{CE(sat)}$	-	-	-0.5	Vdc
DC Current Gain (Note 2) (V_{CE} = -6.0 Vdc, I_C = -1.0 mAdc)	h_{FE}	120	-	560	-
Transition Frequency (V_{CE} = -12 Vdc, I_C = -2.0 mAdc, f = 30 MHz)	f_T	-	140	-	MHz
Output Capacitance (V_{CB} = -12 Vdc, I_E = 0 Adc, f = 1.0 MHz)	C_{OB}	-	3.5	-	pF

2. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

TYPICAL ELECTRICAL CHARACTERISTICS

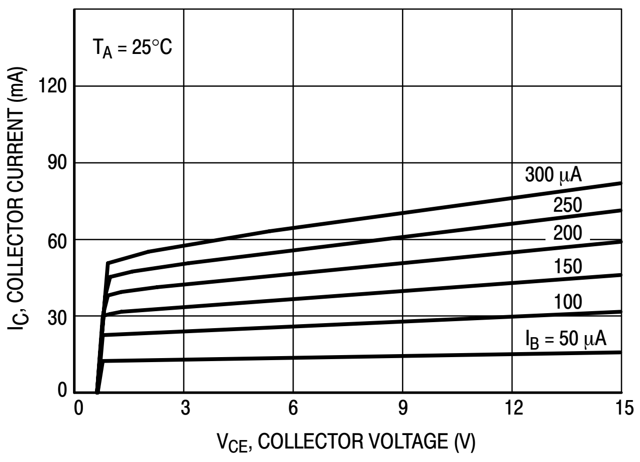


Figure 1. I_C - V_{CE}

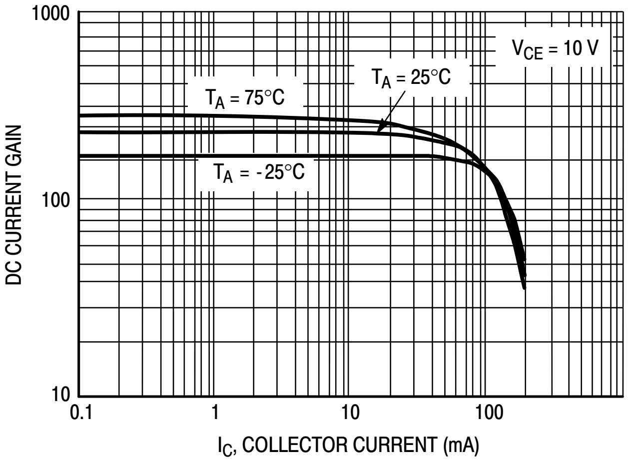


Figure 2. DC Current Gain

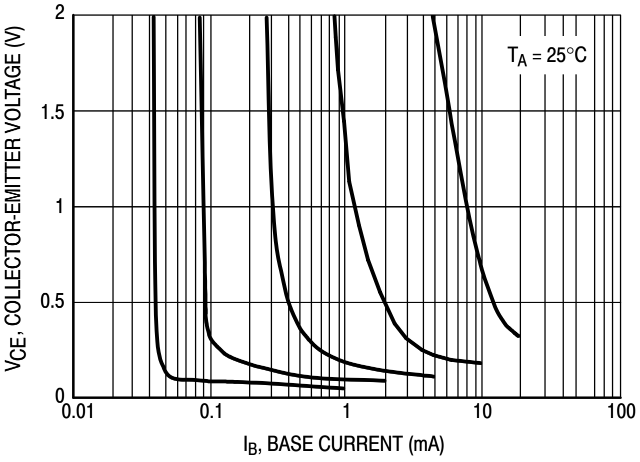


Figure 3. Collector Saturation Region

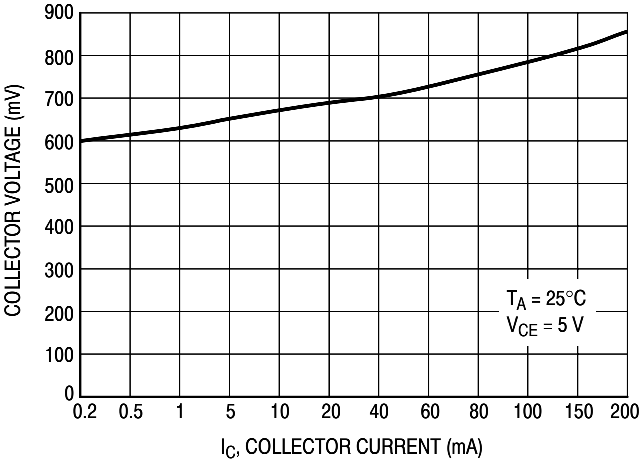


Figure 4. On Voltage

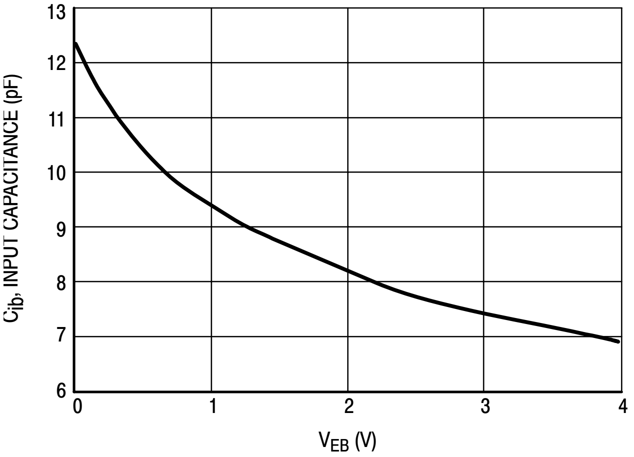


Figure 5. Capacitance

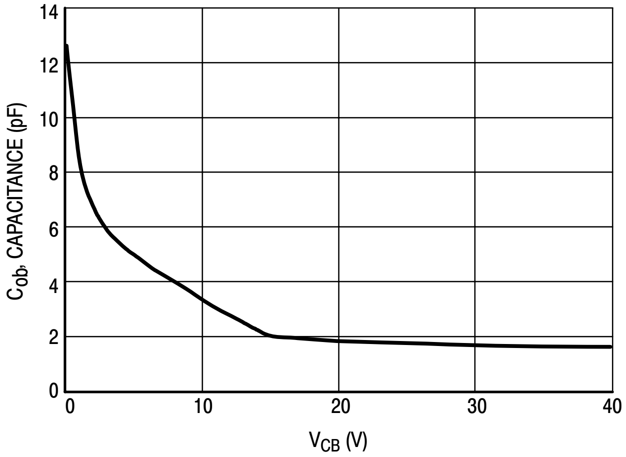
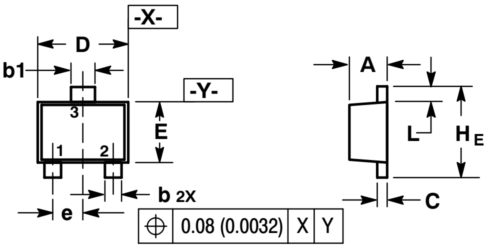


Figure 6. Capacitance

PACKAGE DIMENSIONS

SOT-723

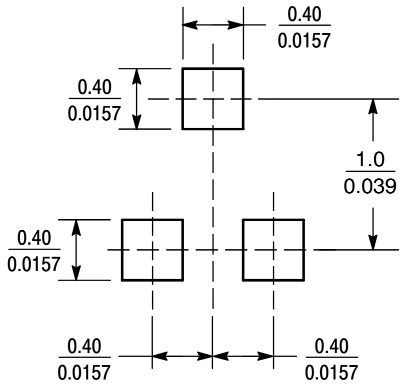
CASE 631AA-01
ISSUE C



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
b	0.15	0.21	0.27	0.0059	0.0083	0.0106
b1	0.25	0.31	0.37	0.010	0.012	0.015
C	0.07	0.12	0.17	0.0028	0.0047	0.0067
D	1.15	1.20	1.25	0.045	0.047	0.049
E	0.75	0.80	0.85	0.03	0.032	0.034
e	0.40 BSC			0.016 BSC		
H_E	1.15	1.20	1.25	0.045	0.047	0.049
L	0.15	0.20	0.25	0.0059	0.0079	0.0098

SOLDERING FOOTPRINT*



SCALE 20:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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