

**2SA1036-P  
 2SA1036-Q  
 2SA1036-R**

**Features**

- Halogen free available upon request by adding suffix "-HF"
- Large  $I_c$ .  $I_{CMax.} = -0.5 A$
- Low  $V_{CE(sat)}$ . Ideal for low-voltage operation.
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

**Maximum Ratings @  $T_a = 25^\circ C$  (unless otherwise noted)**

Symbol	Parameter	Value	Unit
$I_c$	Collector Current	-0.5	A
$P_D$	Collector Power Dissipation	0.2	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ C$

**Electrical Characteristics @  $25^\circ C$  Unless Otherwise Specified**

Symbol	Parameter	Min	TYPE	Max	Units
<b>OFF CHARACTERISTICS</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_c = -1mA, I_E = 0$ )	-32			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_c = -100\mu A, I_E = 0$ )	-40			V
$V_{(BR)EBO}$	Collector-Base Breakdown Voltage ( $I_E = -100\mu A, I_c = 0$ )	-5.0			V
$I_{CBO}$	Collector-Base Cutoff Current ( $V_{CB} = -20V, I_E = 0$ )			-1	$\mu A$
$I_{EBO}$	Emitter-Base Cutoff Current ( $V_{EB} = -4.0V, I_c = 0$ )			-1	$\mu A$

**ON CHARACTERISTICS**

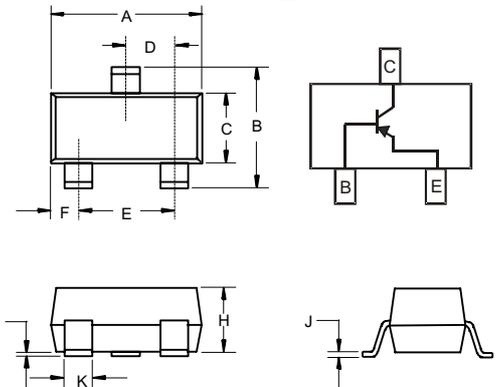
$H_{FE}$	DC Current Gain ( $I_c = -10mA, V_{CE} = -3.0V$ )	82		390	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_c = -100mA, I_B = -10mA$ )			-0.4	Vdc
$F_T$	Transition Frequency ( $V_{CE} = -5V, I_c = -20mA, f = 100MHz$ )		200		MHZ
$C_{ob}$	( $V_{CB} = -10V, I_E = 0, f = 1MHz$ )		7		pF

**CLASSIFICATION OF  $h_{FE}$**

Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	HP	HQ	HR

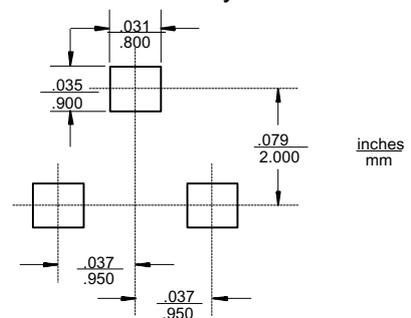
**PNP Silicon  
 Epitaxial Transistors**

**SOT-23**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

**Suggested Solder  
 Pad Layout**



## 2SA1036 Typical Characteristics

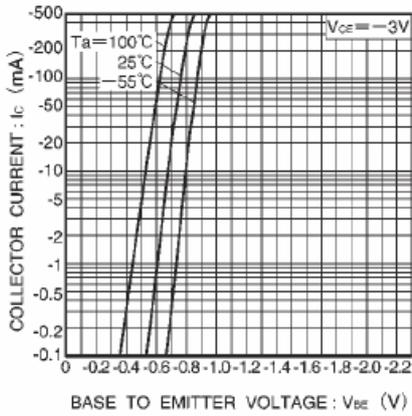


Fig.1 Grounded emitter propagation

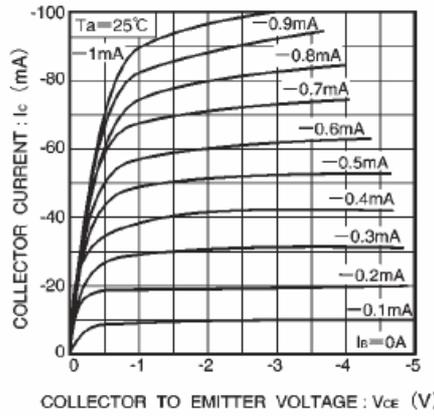


Fig.2 Grounded emitter output characteristics ( I )

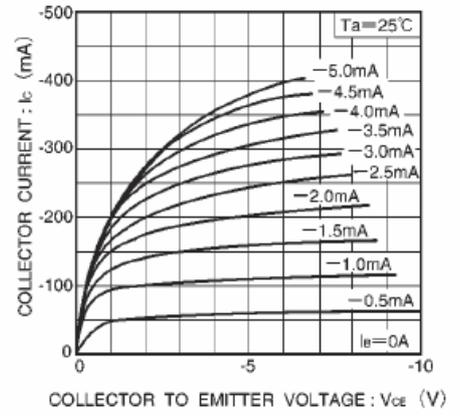


Fig.3 Grounded emitter output characteristics ( II )

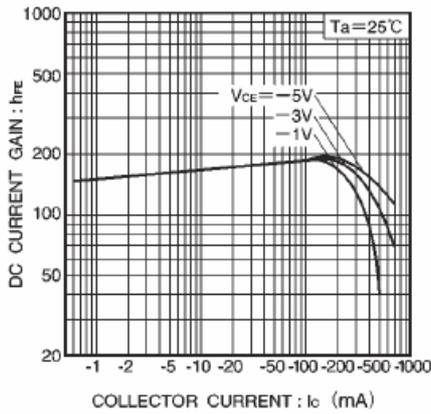


Fig.4 DC current gain vs. collector current ( I )

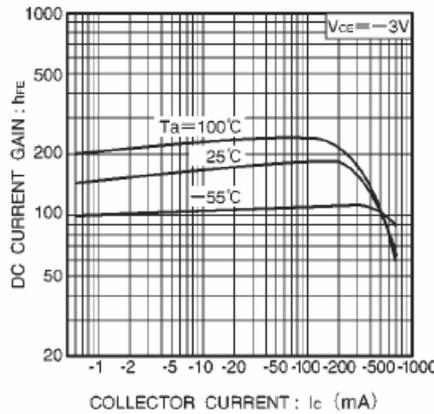


Fig.5 DC current gain vs. collector current ( II )

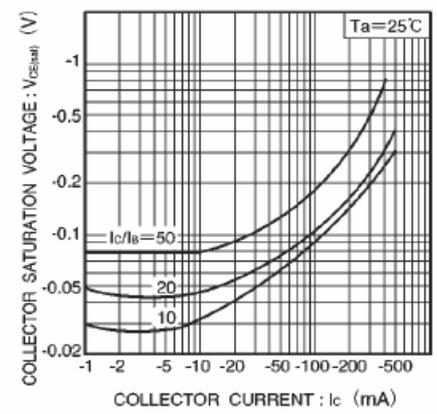


Fig.6 Collector-emitter saturation voltage vs. collector current ( I )

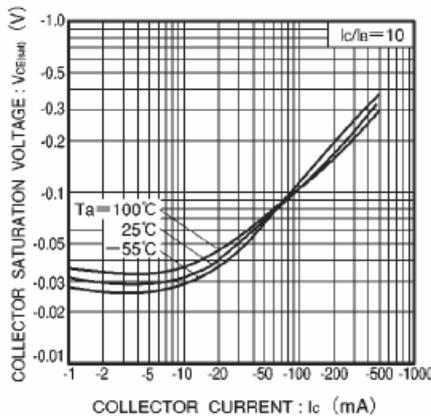


Fig.7 Collector-emitter saturation voltage vs. collector current ( II )

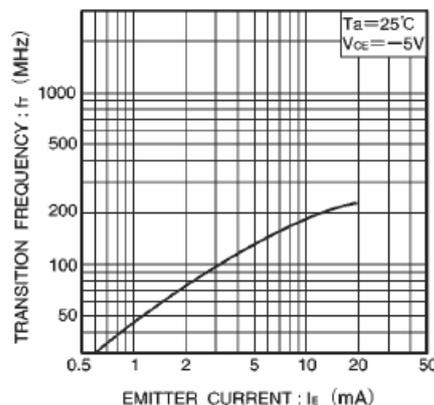


Fig.8 Gain bandwidth product vs. emitter current

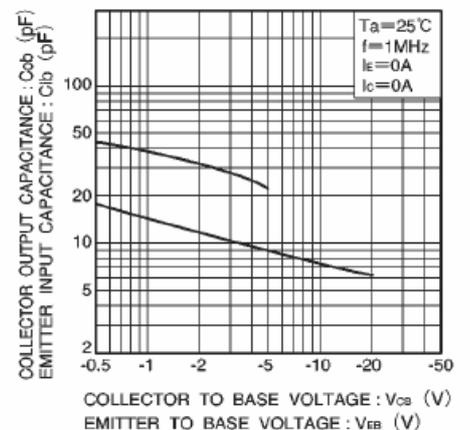


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage



Micro Commercial Components

### Ordering Information :

Device	Packing
Part Number-TP	Tape & Reel; 3 Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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