



**2SA812-M4  
 2SA812-M5  
 2SA812-M6  
 2SA812-M7**

**Features**

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- High DC Current Gain:  $90 \leq h_{FE} \leq 600$  ( $V_{CE} = -6.0V$ ,  $I_C = -1mA$ )
- High voltage:  $V_{CEO} = -50V$
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

**Maximum Ratings**

Symbol	Rating	Rating	Unit
$V_{CEO}$	Collector-Emitter Voltage	-50	V
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{EBO}$	Emitter-Base Voltage	-5.0	V
$I_C$	Collector Current	-100	mA
$P_C$	Collector power dissipation	200	mW
$T_J$	Junction Temperature	-55 to +150	°C
$T_{STG}$	Storage Temperature	-55 to +150	°C

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

Symbol	Parameter	Min	Typ	Max	Units
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**OFF CHARACTERISTICS**

$I_{CBO}$	Collector Cutoff Current ( $V_{CB} = -60Vdc$ , $I_E = 0$ )	---	---	-0.1	$\mu A_{dc}$
$I_{EBO}$	Emitter Cutoff Current ( $V_{EB} = -5.0Vdc$ , $I_C = 0$ )	---	---	-0.1	$\mu A_{dc}$

**ON CHARACTERISTICS**

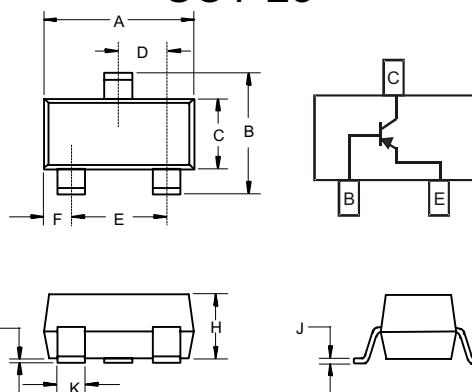
$h_F$	DC Current Gain* ( $I_C = -1.0mA_{dc}$ , $V_{CE} = -6.0Vdc$ )	90	---	600	---
$V_{CE(sat)}$	Collector Saturation Voltage* ( $I_C = -100mA_{dc}$ , $I_B = -10mA_{dc}$ )	---	---	-0.3	Vdc
$V_{BE}$	Base Emitter Voltage* ( $V_{CE} = -6.0Vdc$ , $I_C = -1.0mA_{dc}$ )	---	---	-0.68	Vdc
$f_T$	Gain Bandwidth product ( $V_{CE} = -6.0Vdc$ , $I_E = -10mA_{dc}$ )	180	---	---	MHz

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

Marking	M4	M5	M6	M7
Range	90-180	135-270	200-400	300-600

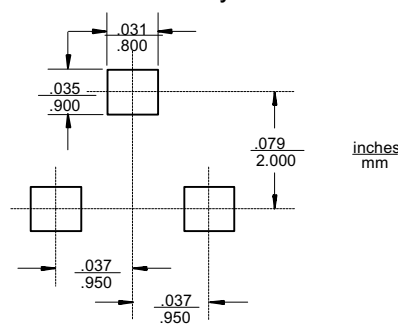
**PNP Silicon  
 Epitaxial Transistors**

**SOT-23**

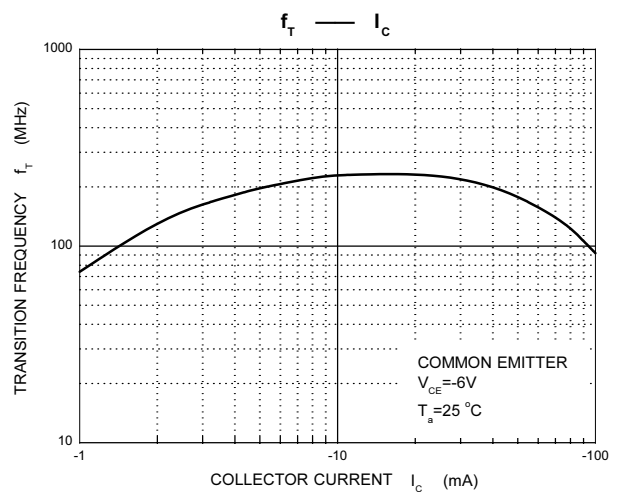
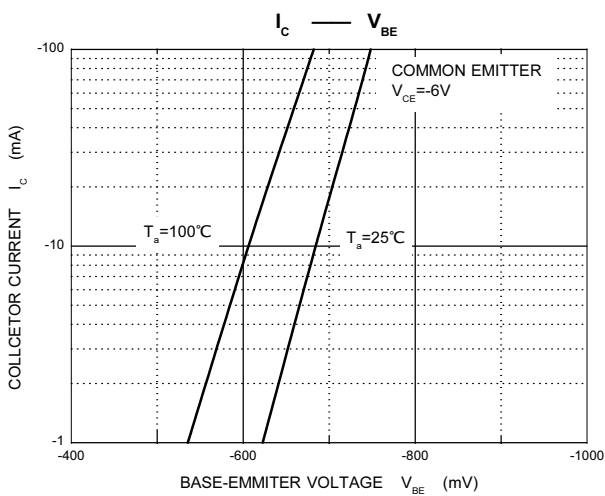
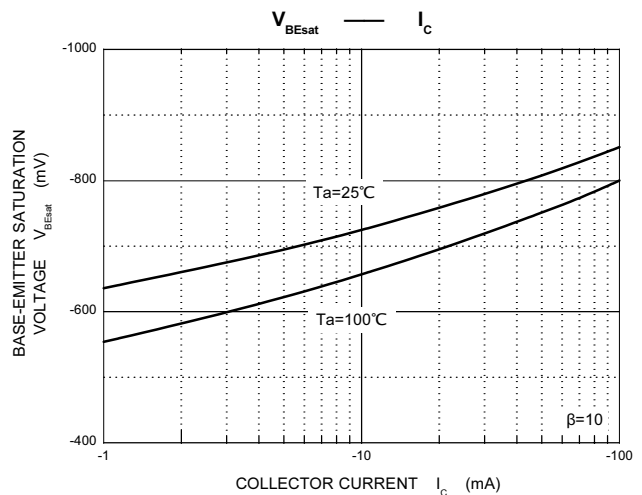
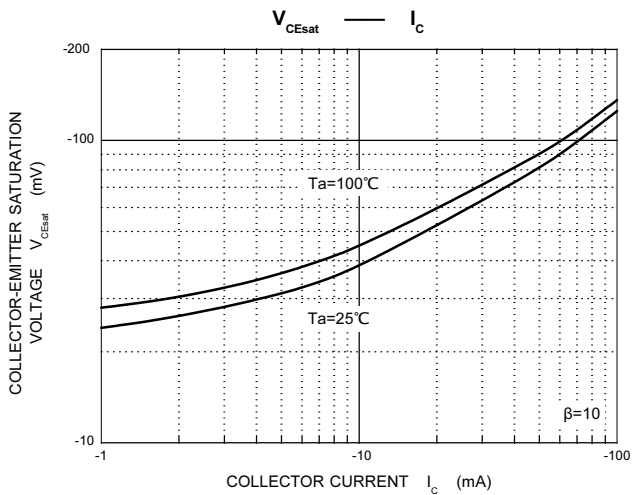
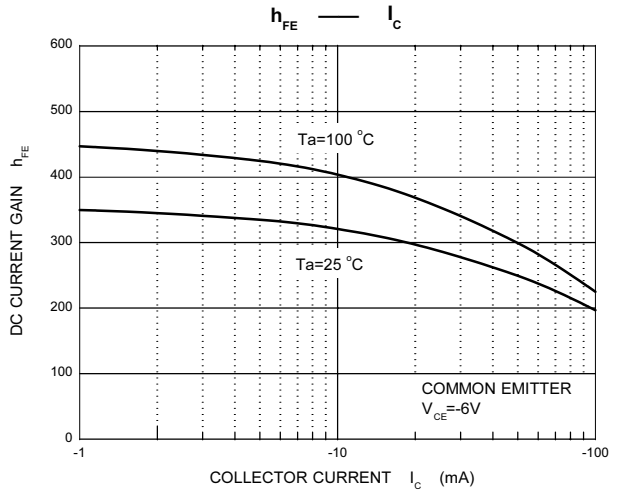
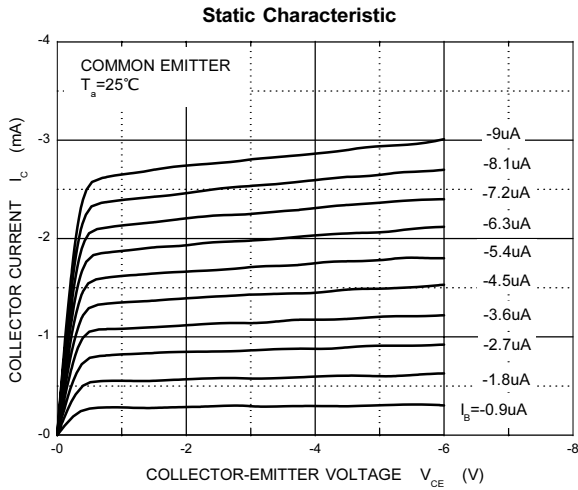


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

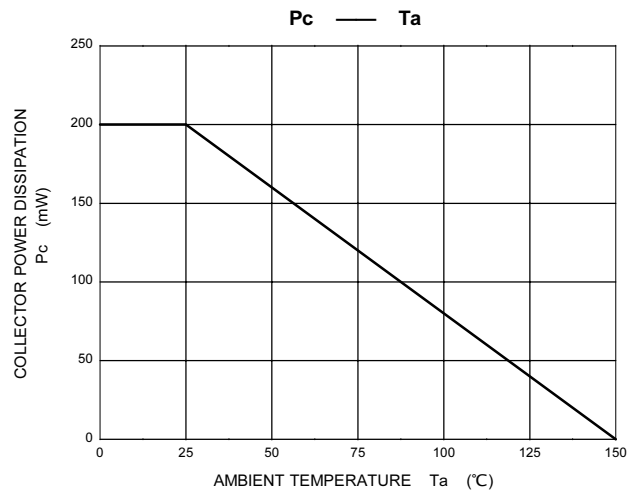
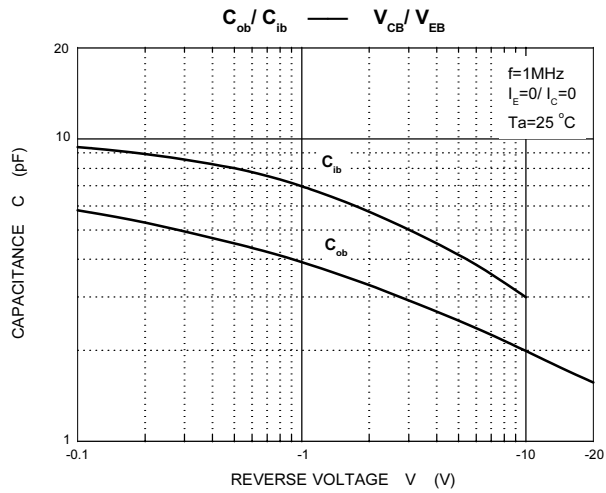
**Suggested Solder  
 Pad Layout**



# Typical Characteristics



# Typical Characteristics





Micro Commercial Components

### Ordering Information :

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

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

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