

**2SC2411-P**  
**2SC2411-Q**  
**2SC2411-R**

**Features**

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- High  $I_C$ .  $I_{CMax.} = 0.5$  A
- Low  $V_{CE(sat)}$ . Optimal for low voltage operation.
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

**NPN Silicon Epitaxial Transistors**

**Maximum Ratings @  $T_a = 25^\circ\text{C}$  (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	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$

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

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

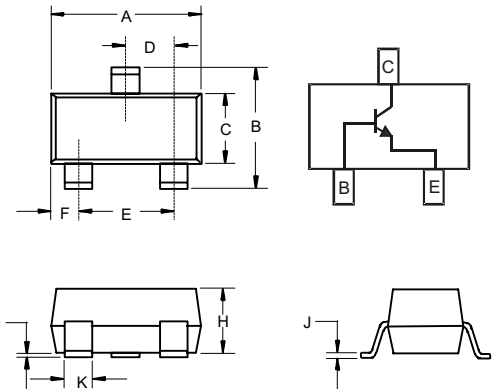
**ON CHARACTERISTICS**

$H_{FE}$	DC Current Gain ( $I_C=100\text{mA}, V_{CE}=3.0\text{Vdc}$ )	82		390	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=500\text{mA}, I_B=50\text{mA}$ )			0.4	Vdc
$F_T$	Transition Frequency ( $V_{CE}=5\text{Vdc}, I_C=20\text{mA}, f=100\text{MHZ}$ )		250		MHZ
$C_{ob}$	( $V_{CB}=10\text{Vdc}, I_E=0, f=1\text{MHZ}$ )		6.0		pF

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

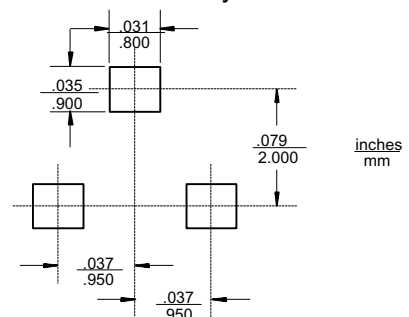
Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	CP	CQ	CR

**SOT-23**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	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**



## 2SC2411 Typical characteristics

### ● Electrical characteristic curves

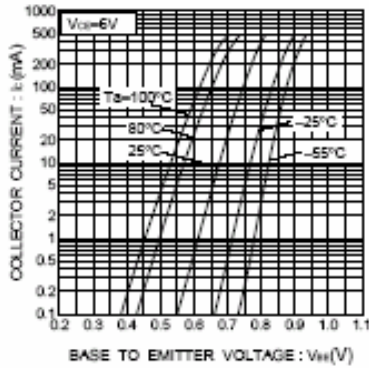


Fig.1 Grounded emitter propagation characteristics

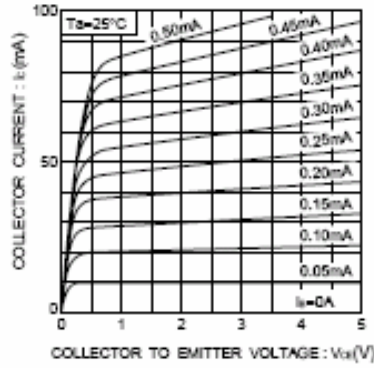


Fig.2 Grounded emitter output characteristics(I)

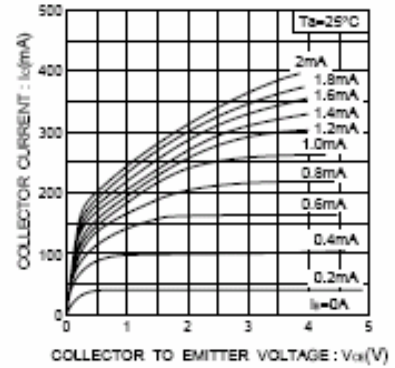


Fig.3 Grounded emitter output characteristics(II)

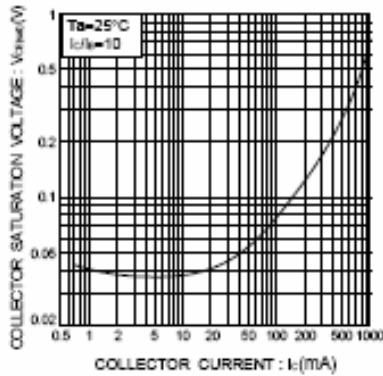


Fig.4 Collector-emitter saturation voltage vs. collector current

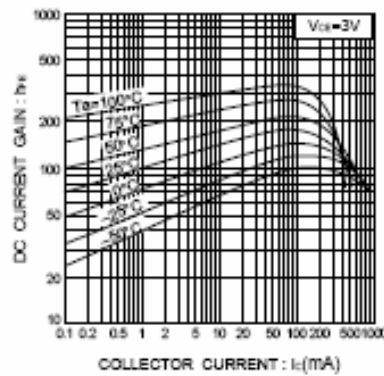


Fig.5 DC current gain vs. collector current

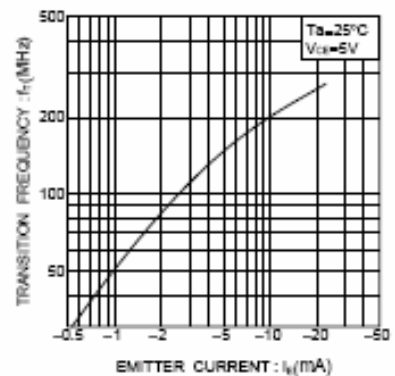


Fig.6 Gain bandwidth product vs. emitter current

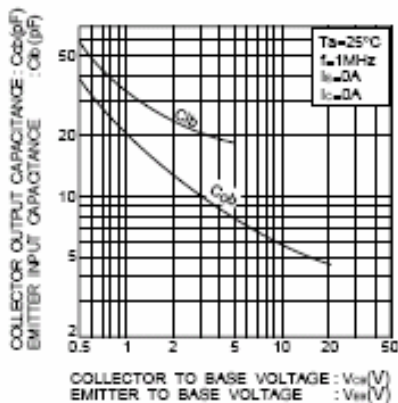


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage



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### Ordering Information :

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

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