



**CHENMKO ENTERPRISE CO.,LTD**

**2SC4097GP**

*Halogens free devices*

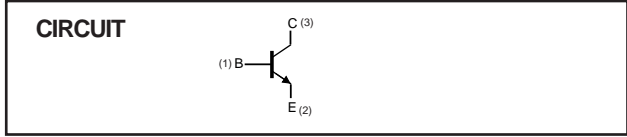
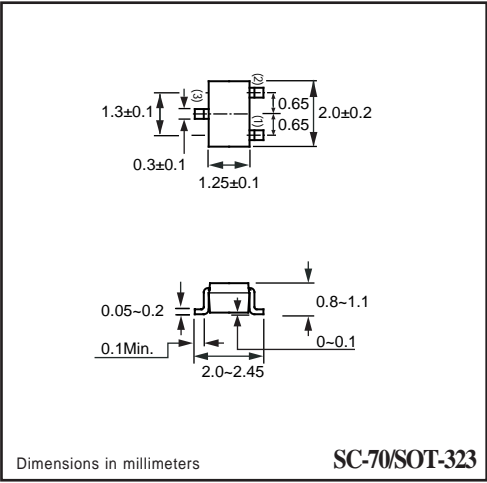
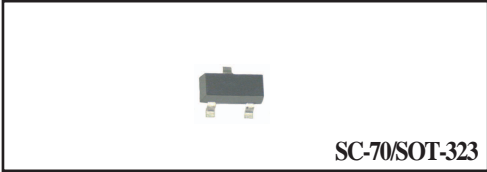
**SURFACE MOUNT**  
**Medium Power NPN Transistor**  
**VOLTAGE 32 Volts CURRENT 0.5 Ampere**

**APPLICATION**  
 \* Medium Power Amplifier .

**FEATURE**  
 \* Surface mount package. (SC-70/SOT-323)  
 \* Low saturation voltage V<sub>CE(sat)</sub>  
 \* Low cob. Cob=6.0pF(TYP)(Ic=500mA)  
 \* P<sub>c</sub>= 200mW (mounted on ceramic substrate).  
 \* High saturation current capability.

**CONSTRUCTION**  
 \* NPN Silicon Transistor  
 \* Epitaxial planner type

**MARKING**  
 \* HFE(P):PT  
 \* HFE(Q):NE  
 \* HFE(R):RA



**MAXIMUM RATINGS** ( At T<sub>A</sub> = 25°C unless otherwise noted )

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	V <sub>CB0</sub>	-	40	Volts
Collector - Emitter Voltage	Open Base	V <sub>CE0</sub>	-	32	Volts
Emitter - Base Voltage	Open Collector	V <sub>EB0</sub>	-	5	Volts
Collector Current DC		I <sub>c</sub>	-	500	mAmps
Peak Collector Current		I <sub>CM</sub>	-	500	mAmps
Peak Base Current		I <sub>BM</sub>	-	10	mAmps
Total Power Dissipation	T <sub>A</sub> ≤ 25°C; Note 1	P <sub>TOT</sub>	-	250	mW
Storage Temperature		T <sub>STG</sub>	-55	+150	°C
Junction Temperature		T <sub>J</sub>	-	+150	°C
Operating Ambient Temperature		T <sub>AMB</sub>	-55	+150	°C

**Note**

1. Transistor mounted on ceramic substrate 50mmX50mmX0.8t.
2. Measured at Pulse Width 300 us, Duty Cycle 2%.

## RATING CHARACTERISTICS ( 2SC4097GP )

**ELECTRICAL CHARACTERISTICS** ( At  $T_A = 25^\circ\text{C}$  unless otherwise noted )

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector Cut-off Current	$I_E=0; V_{CB}=20\text{V}$	$I_{CBO}$	-	-	1.0	$\mu\text{A}$
Emitter Cut-off Current	$I_C=0; V_{EB}=4\text{V}$	$I_{CEO}$	-	-	1.0	$\mu\text{A}$
DC Current Gain	$V_{CE}=3\text{V}$ ; Note 1 $I_C=100\text{mA}$ ; Note 2	$h_{FE}$	82	-	390	
Collector-Emitter Saturation Voltage	$I_C=500\text{mA}; I_B=50\text{mA}$	$V_{CEsat}$	-	-	0.4	Volts
Base-Emitter Saturatio Voltage	$I_C=500\text{mA}; I_B=50\text{mA}$	$V_{BEsat}$	-	-	1.1	mVolts
Output Collector Capacitance	$I_E=I_C=0; V_{CB}=12\text{V}; f=1\text{MHz}$	$C_{ob}$	-	6.0	-	$\text{pF}$
Transition Frequency	$I_C=20\text{mA}; V_{CE}=5\text{V}; f=100\text{MHz}$	$f_T$	-	250	-	MHz

**Note :**

1. Pulse test:  $t_p \leq 300\mu\text{Sec}$ ;  $\delta \leq 0.02$ .
2.  $h_{FE}$ : Classification P: 82 to 180, Q: 120 to 270, R: 180 to 390,

## RATING CHARACTERISTIC CURVES ( 2SC4097GP )

Fig.1 Grounded emitter propagation characteristics

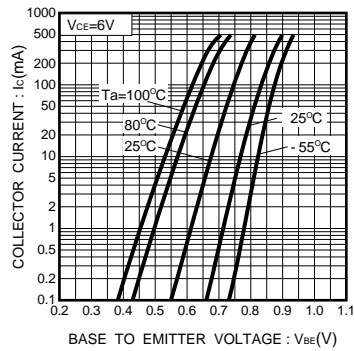


Fig.2 Grounded emitter output characteristics (1)

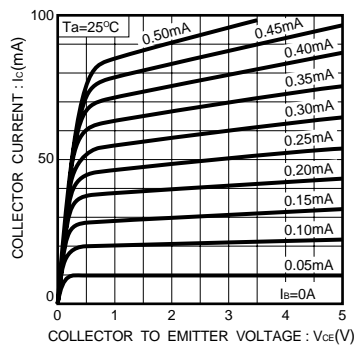
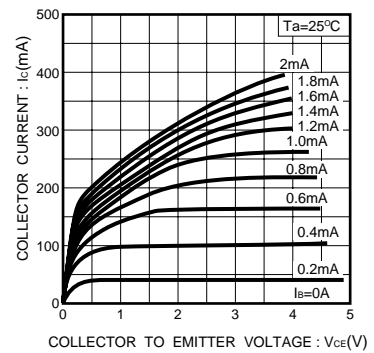


Fig.3 Grounded emitter output characteristics (2)



## RATING CHARACTERISTIC CURVES ( 2SC4097GP )

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

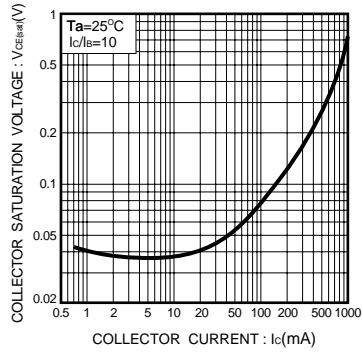


Fig.5 DC current gain vs. collector current

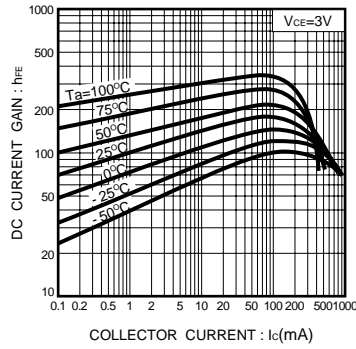


Fig.6 Gain bandwidth product vs. emitter current

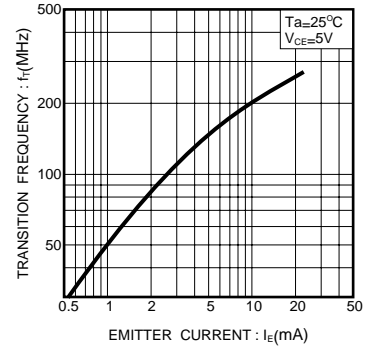


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

