



**CHENMKO ENTERPRISE CO.,LTD**

*Halogens free devices*

**SURFACE MOUNT**

**High frequency amplifier Transistor**

**VOLTAGE 6 Volts CURRENT 50 mAmpere**

**2SC4774GP**

**APPLICATION**

\* Small Signal Amplifier .

**FEATURE**

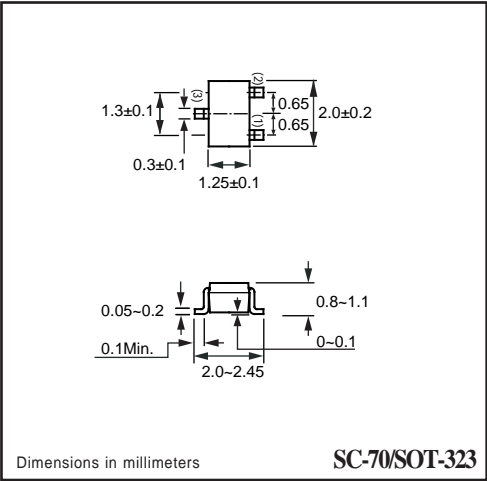
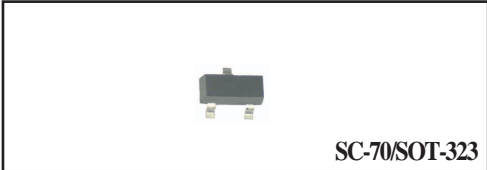
- \* Surface mount package. (SC-70/SOT-323)
- \* Low saturation voltage  $V_{CE(sat)}=0.3V(max.)$
- \* Low cob.  $C_{ob}=1.0pF(Typ.)$
- \*  $P_C= 200mW$  (mounted on ceramic substrate).
- \* High saturation current capability.

**CONSTRUCTION**

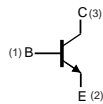
- \* NPN Silicon Transistor
- \* Epitaxial planner type

**MARKING**

\* UW



**CIRCUIT**



**MAXIMUM RATINGS** ( At  $T_A = 25^{\circ}C$  unless otherwise noted )

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	$V_{CB0}$	-	12	Volts
Collector - Emitter Voltage	Open Base	$V_{CE0}$	-	6	Volts
Emitter - Base Voltage	Open Collector	$V_{EB0}$	-	3	Volts
Collector Current DC		$I_C$	-	50	mAmps
Total Power Dissipation	$T_A \leq 25^{\circ}C$ ; Note 1	$P_{TOT}$	-	250	mW
Storage Temperature		$T_{STG}$	-55	+150	$^{\circ}C$
Junction Temperature		$T_J$	-	+150	$^{\circ}C$
Operating Ambient Temperature		$T_{AMB}$	-55	+150	$^{\circ}C$

**Note**

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

## RATING CHARACTERISTICS ( 2SC4774GP )

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

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector Cut-off Current	$I_E=0; V_{CB}=10\text{V}$	$I_{CBO}$	-	-	0.5	$\mu\text{A}$
Emitter Cut-off Current	$I_C=0; V_{EB}=7\text{V}$	$I_{CEO}$	-	-	0.5	$\mu\text{A}$
DC Current Gain	$V_{CE}/I_C=5\text{V}/5\text{mA}$	$h_{FE}$	270	-	560	
Collector-Emitter Saturation Voltage	$I_C=10\text{mA}; I_B=1\text{mA}$	$V_{CEsat}$	-	-	0.3	Volts
Output-on resistance	$I_B=3\text{mA}; V_I=100\text{mVrms}$ $f=500\text{KHz}$	$R_{on}$	-	2	-	$\Omega$
Output Collector Capacitance	$I_E=I_E=0; V_{CB}=10\text{V};$ $f=1\text{MHz}$	$C_{ob}$	-	1	1.7	$\text{pF}$
Transition Frequency	$I_C=10\text{mA}; V_{CE}=5\text{V};$ $f=200\text{MHz}$	$f_T$	300	800	-	$\text{MHz}$

**Note :**

1. Pulse test:  $t_p \leq 300\mu\text{Sec}$ ;  $\delta \leq 0.02$ .

## RATING CHARACTERISTIC CURVES ( 2SC4774GP )

### ●Electrical characteristic curves

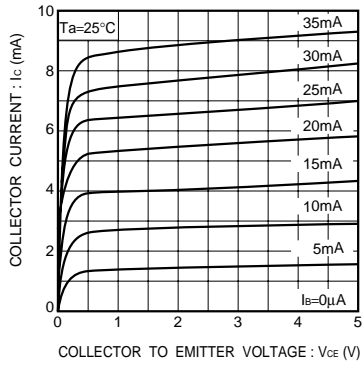


Fig.1 Grounded emitter output characteristics ( I )

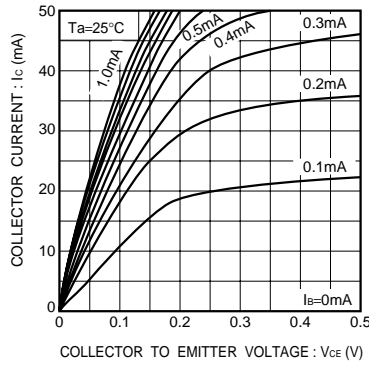


Fig.2 Grounded emitter output characteristics ( II )

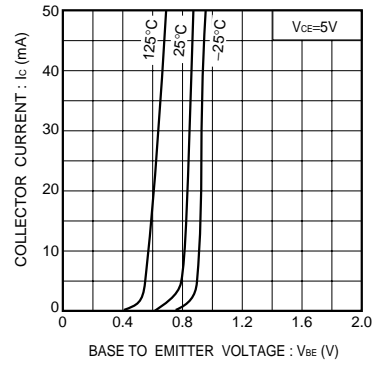


Fig.3 Grounded emitter propagation characteristics

## RATING CHARACTERISTIC CURVES ( 2SC4774GP )

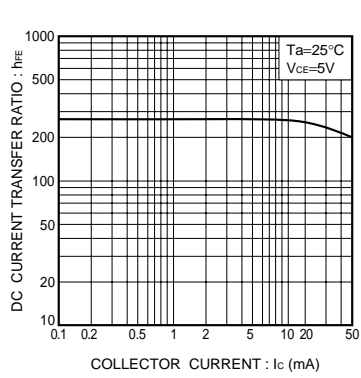


Fig.4 DC current gain vs. collector current

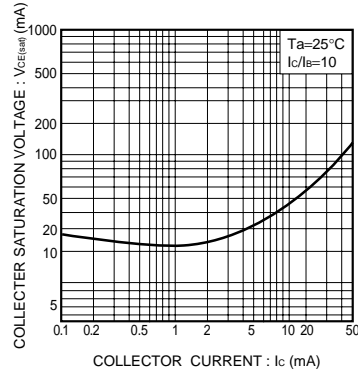


Fig.5 Collector-emitter saturation voltage vs. collector current

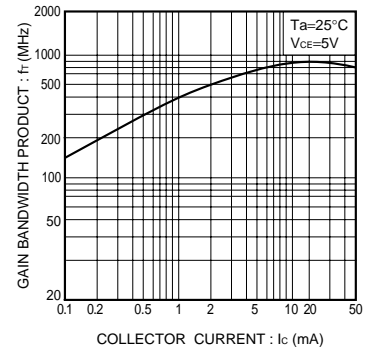


Fig.6 Gain bandwidth product vs. collector current

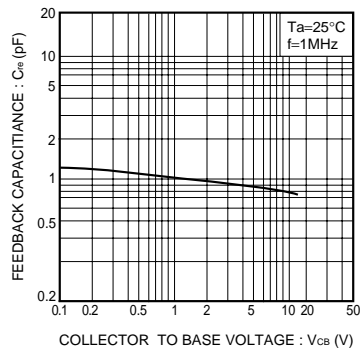


Fig.7 Collector output capacitance vs. voltage

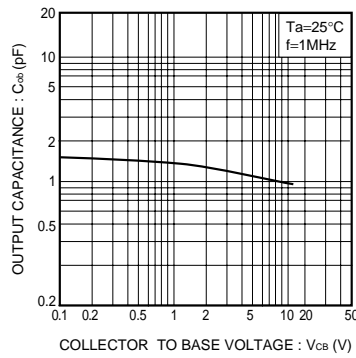


Fig.8 Back capacitance voltage vs. collector to base voltage

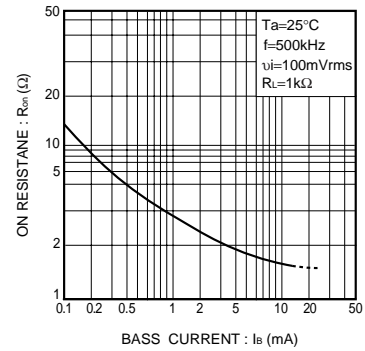


Fig.9 Output-on resistance vs. base current